



## **2021-2022 SCHOOL OF MEDICINE**

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### ***COURSE CATALOG***

# Introduction

The **School of Medicine Student Course Catalog** is a reference for medical and academic health students and others regarding the administrative policies, rules and regulations of Emory University and the Emory University School of Medicine. In addition, the ***Student Handbook*** contains policies and procedures for areas such as admissions, academic and professional standards, progress and promotion, financial aid, student organizations, disability insurance, academic and personal counseling, and student health.

**It is the responsibility of each student enrolled in the Emory University School of Medicine programs to understand and abide by the regulations and policies within the course catalog, student handbook, and within Emory University.**

## Accreditation Statement

Emory University is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award associate, baccalaureate, master, education specialist, doctorate and professional degrees. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033-4097 or call 404-679-4500 for questions about the accreditation of Emory.

## Nondiscrimination Statement

Emory University is an inquiry-driven, ethically engaged, and diverse community dedicated to the ideals of free academic discourse in teaching, scholarship, and community service. Emory University abides by the values of academic freedom and is built on the assumption that contention among different views is positive and necessary for the expansion of knowledge, both for the University itself and as a training ground for society at large. Emory is committed to the widest possible scope for the free circulation of ideas.

The University is committed to maintaining an environment that is free of unlawful harassment and discrimination. Pursuant to the University's commitment to a fair and open campus environment and in accordance with federal law, Emory cannot and will not tolerate discrimination against or harassment of any individual or group based upon race, color, religion, ethnic or national origin, gender, genetic information, age, disability, sexual orientation, gender identity, gender expression, veteran's status, or any factor that is a prohibited consideration under applicable law. Emory University welcomes and promotes an open and genuinely diverse environment.

## Department of Veterans Affairs Pending Payment Rights

In compliance with Title 38 United States Code Section 3679(e) Emory University adheres to the following provisions for any student(s) that are/is considered "a covered individual" who are using Chapter 33 Post 9/11 Gi Bill, or Chapter 31 Vocational Rehabilitation and Employment, U.S. Department of Veterans Affairs benefits:

The University will not:

1. Prevent the student's enrollment in classes
2. Assess a penalty fee (late fees, administrative fees) due to delayed disbursements from the Department of Veterans Affairs under Chapter 31 or Chapter 33
3. Deny access to any school resources, classes, libraries, or other institutional facilities that are available to other paid students
4. Require the student to borrow additional funds for the length of time these provisions are applicable

The university will require students to provide the following documents to be considered a "covered individual":

- An official "Certificate of Eligibility", or "Statement of Benefits" from the VA website or ebenefits [Chapter 33] or a VAF 28-1905 [Chapter 31] on or before the first day of class for the semester.
- A completed Veterans Enrollment Certification Student Data Form ([http://www.registrar.emory.edu/\\_includes/documents/sections/records-transcripts/VeteransEnrollmentDataInformation.pdf](http://www.registrar.emory.edu/_includes/documents/sections/records-transcripts/VeteransEnrollmentDataInformation.pdf))
- Any additional documentation required to ensure proper certification of benefits

Having met all requirements, the Department of Veterans Affairs will provide the university with payment ending on the earlier of either:

- The date on which payment from VA is made to the institution,
- Ninety (90) days after the date the institution certified tuition and fees

Any difference in the amount of the student's financial obligation to the university and the amount the student is eligible to receive from the Department of Veterans Affairs may incur an additional fee, or payment/payment arrangement may be required to cover the difference. Please note that all eligibility documents must be submitted to the School Certifying Official in the Office of the University Registrar. Instructions for submission of this paperwork can be found at the website below.

<http://www.registrar.emory.edu/registration/veterans-education-benefits.html>

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## **DOCTOR OF MEDICINE (MD)**

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Emory University School of Medicine offers a dynamic blend of active learning, early clinical skills training, patient contact, traditional lecture, and small-group learning. The MD program is complemented by close interaction with faculty mentors who are committed to training men and women to become the future leaders of American medicine.

### ***ACCREDITATION***

The Emory University School of Medicine MD Program is fully accredited by the Liaison Committee on Medical Education (LCME). Current accreditation standards and additional information is available at [www.lcme.org](http://www.lcme.org).

### ***ADMISSIONS POLICY***

Emory University is dedicated to providing equal opportunities to all individuals regardless of race, color, religion, ethnic or national origin, gender, genetic information, age, disability, sexual orientation, gender identity, gender expression, and veteran's status. Emory University does not discriminate in admissions or educational programs on the basis of any factor stated above or prohibited under applicable law. Students are assured of participation in University programs and in the use of facilities without such discrimination.

### ***APPLICATION REQUIREMENTS***

#### **A Note to Applicants for Fall 2022**

In this time of uncertainty, we realize that many of you may need to reschedule your MCAT exams, adjust your course plan, and/or cancel clinical experiences. Some of you - or your loved ones - will be personally affected by this global pandemic. Our Admissions Committee assures you that these unforeseen circumstances will be understood in the context of the current situation. We will accept pass/fail courses, as well as online courses, toward our course requirements. We will accept all of your MCAT scores administered throughout the year, but we strongly recommend that you take the exam as early as possible. It is important to both apply early and to know your MCAT scores when you submit your AMCAS application. This will allow you to apply to schools where your application will be competitive. Please also remember that you must meet our MCAT prescreening criteria in order to receive an invitation to complete the Emory Supplemental Application (See Step 3 for more details.)

The 2021-2022 Interview Season will begin in September and end in late February and will be conducted remotely again this year. Please stay safe and healthy.

Completion of at least three years of a balanced undergraduate education, including at least 90 semester hours or 135 quarter hours in arts and sciences is required. For applicants pursuing undergraduate coursework in the United States or Canada, all 90 hours (or 135 quarter hours) must be completed at a regionally accredited U.S. institution or a similarly accredited institution in Canada (completion of the baccalaureate degree is preferred).

If your undergraduate degree is from a college outside the United States and Canada, you must complete all 32 semester hours of the required science coursework at a regionally accredited U.S. institution or a similarly accredited institution in Canada.

**Minimum course requirements:**

- 8 semester hours (with lab) in biology
- 8 semester hours (with lab) in general or inorganic chemistry
- 8 semester hours (with lab) in organic chemistry
- 8 semester hours (with lab) in one of the physical sciences
- 6 semester hours of English
- 18 semester hours of humanities and social and/or behavioral sciences
- Demonstration of a high level of scholarship (the means for those accepted: 3.7 GPA and 11 on the MCAT subtests)

Demonstration of a high level of scholarship (the means for those accepted: 3.7 GPA and 11 on the “old” MCAT subtests or 128-129 on the “new” MCAT subtests).

Completion of the Medical College Admission Test (MCAT) no later than October of the year in which application is made. The test must be taken within four years of the enrollment year. If Emory is designated as one of the medical schools on the applicant’s AMCAS application, results of the test will be sent directly to Emory. Applicants should NOT send MCAT test results to Emory.

For the 2021-2022 application cycle, Emory will prescreen for a minimum MCAT score of 500 with at least a 123 in each of the four subtests. Applicants with a MCAT score of less than 500 or a subtest score of less than 123 on any of the four MCAT subtests will not receive an invitation to complete an Emory Supplemental Application.

If an applicant has more than one MCAT score, the latest score will be used to determine eligibility.

Applications from those who have **taken the MCAT more than three times** will not be reviewed by the Admissions Committee.

Submission of online application through the American Medical College Application Service (AMCAS) at the following web site: [www.aamc.org](http://www.aamc.org).

Submission of a \$120 application fee (fee amount subject to change) and photograph (the application fee and photograph is submitted electronically with the Emory Supplemental Application). Fee waivers of the Emory Supplemental

Application fee are granted to those applicants for whom AMCAS has waived its application fee.

All materials must be submitted online no later than 11:59pm Eastern Time on December 1 of the application cycle.

Submission of the required letters of recommendation via the AMCAS Letter Service. Applicants may submit one of the following:

- A packet of letters or a composite letter from a Pre-Medical or Pre-Health Committee
- A packet of letters from a Career Center or a Letter Writing Service
- Three letters of recommendation from individuals, two of whom should be individuals familiar with your knowledge in the sciences

Exposure to patients in a clinical setting. Examples include volunteering at a local hospital or clinic, clinical volunteer work abroad, or shadowing a physician. The Admissions Committee is most interested in applicants who have face-to-face experience with the patient-doctor relationship.

Completion of a personal interview before the Admissions Committee on the University campus. Not all applicants are invited for interview.

### **International Students**

International applicants (those who are not citizens or permanent residents of the U.S.) are welcome to apply to Emory School of Medicine. All completed applicants will receive a full review of their file, regardless of citizenship or immigration status.

No TOEFL scores are required.

If your undergraduate degree is from a college outside the United States and Canada, you must complete all 32 semester hours of the required science coursework at a regionally accredited U.S. institution or an accredited institution in Canada.

At the present time, Emory School of Medicine does not offer need-based financial aid for international students. All international students must be prepared to document funding resources to pay their tuition and expenses for all four years of medical school. Tuition and expenses are estimated at over \$80,000 per year.

The Emory Office of International Student and Scholar Services (ISSS) works closely with international students who have been accepted to our programs to assist in obtaining or maintaining their immigration status and immigration documents as required by the U.S. government. More information will be provided to students upon their acceptance to Emory.

# ***APPLICATION REQUIREMENTS FOR MD DUAL DEGREE PROGRAMS***

## **MD/PhD**

Those who wish to apply to the MD/PhD Program must submit an application via AMCAS. If the application meets our minimum MCAT scores, an Emory Supplemental Application will be sent, which is where applicants will indicate their interest in our MD/PhD Program. All of the same requirements and deadlines for the MD Program apply. Research experience is required, and applicants will be asked to provide detailed information about their research experience on the Emory Supplemental Application.

## **MD/MPH**

Those who wish to apply to the MD/MPH program must first submit an application via AMCAS. If the application meets our minimum MCAT scores, the applicant will be sent the Emory Supplemental Application, which is where applicants will indicate their interest in the MPH program.

## **MD/MSCR**

Students do not formally apply to the Master of Science in Clinical Research (MSCR) until their third year of medical school. At that time, students apply separately to the MSCR Program through the Laney Graduate School of Arts and Sciences.

## **MD/MA in Bioethics**

Those who wish to apply to the MD/MA program may indicate this on the Emory Supplemental Application. Instructions for submitting a separate application to the Laney Graduate School of Arts and Sciences will be sent to applicants who indicate this interest on their Emory Supplemental Application.

## **MD/MBA**

Students do not formally apply to the Master of Master of Business Administration (MBA) until their third year of medical school. At that time, students apply separately to the MBA Program through the Goizueta Business School

## **Other Program for Medical Students**

Emory medical students may be accepted to graduate program at Emory such as the [Juris Master \(JM\) program at Emory Law School](#). Applicants must follow all AAMC procedures to apply through AMCAS first. Verified applicants will be sent instructions to complete the online Supplemental Application, and all of the same medical school application deadlines apply. Accepted students who wish to apply to the MD/JM program may do so by submitting a **separate application** to Emory Law School in the third year of medical school.



## ***APPLICATION REVIEW PROCESS***

All completed applications will be reviewed and will remain in review until the end of the interview season (September – February). We cannot guarantee the timeframe in which your application will be reviewed – only that it will be reviewed thoroughly. **No completed applications will be rejected during the interview season.** The ONLY decision that is made during this time is the decision to invite for an interview. Applicants selected for an interview will be contacted by email or telephone.

It is extremely critical that you keep your contact information updated with AMCAS during this time. Please also let the Office of Admissions know if you will be out of the country or unreachable by telephone or email for any period of time during the interview season (September – February).

A personal interview is required to be considered for acceptance – there are no exceptions. (Due to the high volume of applications we receive from exceptional candidates each year, it is impossible to interview all qualified applicants. Consequently, failure to be offered an interview is not an indication that a student is considered unsuited for a medical career.)

## ***ADMISSION PROCEDURE***

### **Admissions Committee**

The Admissions Committee will meet monthly during the interview season (October through February) and will select applicants for acceptance. Applicants will be notified of their acceptance via the US Postal Service. Applicants will NOT be notified by email or telephone. Emory School of Medicine operates on a rolling admission cycle, so applicants who are not selected for admission will remain in consideration for all subsequent Admissions Committee meetings until March. No completed applicant is rejected during the interview season. At the close of the interview season, all interviewed applicants will be information of their status (accepted, rejected, or alternate).

## ***CREDIT FOR PRIOR EDUCATION AND TRAINING***

The MD program does not award credits from prior education and training with the exception of the MD/OMF program.

## ***ENROLLMENT POLICY***

Each year, Emory University School of Medicine enrolls 138 new students into the first-year class. To be enrolled in the program, students must have submitted an application, completed an interview and been selected for admission to the program by the Admissions Committee. Students must also have completed all prerequisites and obtained an undergraduate degree prior to enrollment in the program.

## **Accepted Applicants and Conditions of Enrollment**

Accepted applicants to the first-year class are asked to accept their position in the incoming class within two weeks of the receipt of their acceptance letter. The deadline for students to make a final decision for medical school is April 30. No admission deposit is required.

All accepted students are expected to maintain their academic performance, personal characteristics, and behavior. Documented evidence to the contrary may result in revocation of acceptance. This includes, but is not limited to, all Emory University School of Medicine Policies and Regulations for Professionalism, Conduct and Academic Integrity. A complete listing of policies and regulations can be found online at: <http://www.med.emory.edu/handbook/>.

All accepted students will be asked to authorize a third party to perform a criminal background check and drug screen and to release all findings to Emory University School of Medicine. This requirement must be completed prior to matriculation.

All applicants are expected to follow the "AAMC Recommendations for Medical School Applicants."

All students are required to maintain health insurance coverage that meets Emory University minimum coverage requirements throughout the entire period of enrollment at Emory University. Emory will automatically enroll accepted students in the Emory Student Health Insurance Plan. If the student has health insurance coverage with another carrier that meets Emory University minimum coverage requirements, the Emory Student Health Insurance Plan can be waived.

All incoming students will be required to complete and pass health and safety training courses prior to M1 Orientation. Courses will be available online in the summer prior to M1 Orientation.

Attendance and full participation in all orientation sessions for incoming students will be required. No exceptions will be granted and all acceptances are contingent upon attendance at ALL orientation sessions.

## **ATTENDANCE**

Active participation in all aspects of the medical education program is critical to students' development as physicians. Although attendance is expected at all scheduled classes, attendance is mandatory at all small group sessions, preceptorships, and patient presentations. Attendance is also mandatory for all examinations, including written, oral, and observed structured clinical exams (OSCEs). Attendance is likewise mandatory for class meetings. Daily attendance during clinical clerkships is mandatory, except for required days off as outlined below.

## **Duty Hours on Clinical Clerkships**

During the clinical clerkships, students must adhere to the duty hour guidelines as outlined by the Accreditation Council of Graduate Medical Education (ACGME).

Duty hours are defined as all clinical and academic activities related to the program:

- Patient care (both inpatient and outpatient)
- Administrative duties relative to patient care
- The provision for transfer of patient care
- Time spent in-house during call activities
- Scheduled activities, such as conferences

Duty hours do not include reading and preparation time spent away from the duty site.

Students on clinical clerkships are required to report their duty hours on a weekly basis via OASIS. The Executive Curriculum Committee monitors student duty hours and makes any necessary curricular revisions to ensure duty hour compliance.

## **Punctuality**

In addition to attendance, it is considered part of professional duty and is the responsibility of the student to arrive on time for classes, small group sessions, clinical rounds, scheduled examinations, and all other events related to the M.D. program.

## **ABSENCES**

We strongly recommend students to be present for ALL educational activities. And as stated above, for many of the educational sessions attendance is required. These required sessions are described above.

The practice of medicine is collaborative and collegial. Excellent patient care requires good communication and trust among and between colleagues. Medical education requires students to work collaboratively with each other, patients, fellow students, staff, and faculty in a regular and predictable manner.

The nature of our work as caregivers requires that we notify appropriate persons when we must be absent so that patient care is not compromised, and both clinical and educational responsibilities are fairly shared. As a supportive community that values wellness and well-being, the School of Medicine faculty, staff, and administration realize that various circumstances--emergent or otherwise--will require that members of our community must occasionally be absent from required events. Furthermore, we must work together to support each other during circumstances that take us away from required events. This policy outlines a process by which students can be granted excused absences. Failure to comply with this policy will be considered unprofessional behavior.

Excused absences will be *considered* for the following reasons:

- Appointments for medical care that **cannot reasonably** be scheduled outside your MD program responsibilities
- Acute medical illness or family emergency
- To give a scholarly presentation at an academically relevant national meeting
- Running for or holding national office in a relevant professional organization
- Religious observances
- Residency interviews
- Participation in the MD or MD/PhD interview as an invited tour guide related to the admissions process
- Participation in meetings of the EUSOM Executive Curriculum Committee and its subcommittees
- Required student meetings with deans and potential/actual Discovery mentors
- Required MD/PhD meetings, including the annual MD/PhD retreat

## **ABSENCE POLICY**

During the Foundations Phase, students should contact Dr. Ira Schwartz to be granted an excused absence.

During the Application, Discovery, and Translation Phases, students should follow the Absence from Clinical Duties Policy and Process (below).

*Requests should be made as far in advance as possible.* **For emergent absences, students should phone the appropriate Dean and clerkship director (for students on clinical rotations).** All other requests should be made in person or by email.

### **During Foundations**

If the requested absence is approved, Dr. Schwartz will notify the Foundations and course director and the student's Small Group Advisor.

Any required sessions, academic assignments, etc. that are missed must be fulfilled to the satisfaction of the course and Foundations director and the appropriate Dean. Within reason, course directors will assist students to complete all work missed during excused absences, as deemed necessary by the director of the course. If an excused absence does not allow for the missed work to be made up before the end of the course or phase, the student may be assigned a grade of "Incomplete" until the work is completed. If the student is unable to complete the missed work in a timely manner, as determined by the course director, the grade may be converted to "Withdrawal". The designation of "Withdrawal" would require the student to repeat the course.

Repeated unexcused absences during the Foundations Phase will be considered a professionalism concern and will be brought to the attention of the Progress and Promotions (P&P) committee. If a student has three or more unexcused absences,

referral to the P&P committee could result in a letter of concern, warning, probation, or other ramifications as the committee deems appropriate.

### **During Clinical Clerkships**

Clinical training is an essential part of medical education and represents a critical phase of the medical student experience. Given this, any absence from clinical duties (ACD) is considered a serious matter. Clerkship directors understand that circumstances will sometimes require a student to be absent from clinical duties. The following are responsibilities and general guidelines for a medical student considering an ACD:

### ***TERMS AND DEFINITIONS***

#### **Duty hours**

Duty hours are defined as time spent doing all clinical and academic activities related to the program and include patient care, administrative duties related to patient care, and scheduled educational conferences. Clinical service time may occur outside of business hours but should not exceed 80 hours/week.

#### **Scheduled Days Off/Mandatory Time off/Wellness Half-Days**

Each clerkship will assign a number of scheduled days off, which includes the minimum mandatory time off from duty hours, as specified by ACGME guidelines. The total number of scheduled days off will be determined by each clerkship according to clinical service needs and schedules. Required wellness half-days are considered an excused absence from clinical duties and students are expected to request the allotted amount of wellness half-days for each clerkship.

#### **Absence from Clinical Duties (ACD)**

This is an absence that occurs during scheduled duty hours, and does not occur during mandatory time off or on additional scheduled days off from clinical service. It does not include wellness half-days. An ACD will decrease the total amount of time that a student is able to invest in clinical service activities. A student who has an ACD **may** be required to make up the time absent, depending on what activities were missed.

#### **Extended ACD**

This is an ACD that is longer than the limit set based on the length of the clerkship, and which **will need to be made up**. Policies are enforced at the discretion of individual clerkship directors. An extended ACD is defined by the total length of a clerkship/rotation:

- 1-week clerkship/rotation:  $\geq 1$  day
- 4-week clerkship/rotation:  $\geq 2$  days
- 6-week clerkship:  $\geq 3$  days
- 8-week clerkship:  $\geq 4$  days

## **Student Responsibilities**

1. Students should attempt to schedule non-clerkship related activities outside of normal duty hours for that clerkship (e.g., late afternoons/evenings and weekends or scheduled time off).
2. Students must communicate all requests with advance notice (as soon as the need is known to the student) to the clerkship director, clerkship coordinator, and Associate Dean for Clinical Education.
3. All communication regarding requests for time off should be done in a professional manner.
4. Students who are ACD are required to collect any didactic materials/notes from lectures that they may have missed during their time away.

## **Guidelines**

1. Advance communication with the clerkship director, clerkship coordinator, and the Associate Dean for Clinical Affairs is required for any requested activity that could result in an ACD. These types of activities include:
  1. Doctors' Appointments
  2. Meetings with Discovery Mentors
  3. Meetings or conferences at which the student is presenting (poster or podium)
  4. Important personal events (graduations and weddings of close family members)
  5. Residency interviews
  6. Religious observances
  7. Admissions committee interviews/tours
  8. Curriculum committee meetings
2. With advance notice, the clerkship directors will work with the student to avoid an ACD. This may include arranging rotations or shifts to accommodate the request or helping the student select the best days/times to attend their activity and limit time away from clinical duties. If accommodations can be made to align the student's scheduled time off with their activity, the absence will *not* be considered an ACD. *However, clerkship directors may not always be able to accommodate these requests.* In this case, if the clerkship director permits the student to attend the activity, this will result in an ACD.
3. Emergency requests for ACD such as student illness, personal injury, or injury/illness/death of a family member should be communicated as soon as possible to the Associate Dean for Clinical Education *and* the clerkship director and clerkship coordinator.
4. In cases of ACD without prior communication with, or approval by, the Associate Dean for Clinical Education's office and the clerkship director, a Professionalism Report will be filed by the clerkship director. This includes unauthorized extension of a previously authorized ACD.

Further information about common reasons for missing required educational events:

### **Excused Absences for Personal Medical Care**

Medical students are strongly encouraged to maintain their own physical and mental health and well-being. Whenever possible, students should schedule non-emergent healthcare appointments during times that do not conflict with classroom and clinical activities. In the event an appointment must be scheduled during a required educational activity, students must request permission to be excused from the appropriate Dean (see above).

### **Religious Observances**

The Emory School of Medicine recognizes and respects the importance of individual religious beliefs and practices. While the School of Medicine calendar includes only religious observances recognized as U.S. federal holidays, the school seeks to accommodate student religious needs reasonably and within the requirements of the academic schedule. There shall be no adverse or prejudicial effect resulting to any student requesting excused absences for religious observances. Students assigned to patient care educational activities may request assignments that allow the student to meet their religious needs; on occasion, students may be asked to attend patient care activities that cannot be reasonably re-scheduled, such as on-call time with a care team. Required academic work missed as part of an excused absence must be made up to the satisfaction of the supervising faculty member.

### **Residency Interviews**

During clinical clerkships, students MAY be granted one-day excused absences for residency interviews per each two weeks of the clinical rotation. This may vary on rotations that schedule shift clinical duties (e.g. Emergency Medicine). Students should discuss and submit requests for absence from clerkship responsibilities to the Deans Office PRIOR to making travel or other interview plans. Regardless of absences for interviews, students must complete the requirements of the rotation by the last day of the rotation. Any deviation from this policy must be approved by the Associate Dean for Clinical Education.

### **Participation in the MD or MD/PhD Admissions Process or Tour Guide**

Students actively participate in the MD and MD/PhD admissions process, serving as interviewers and tour guides. Students will not be allowed to miss mandatory components of any clerkship to serve as an interviewer and tour guide.

### **Participation in Meetings of the EUSOM Executive Curriculum Committee and its Subcommittees**

Students actively participate in the subcommittees of the EUSOM Executive Curriculum Committee. They play an invaluable role in curricular decisions. Students are allowed to attend

## **Required Student Meetings with Deans and Potential/Actual Discovery Mentors**

During the required clerkships, students are required to meet with the Associate Dean for Clinical Education or his/her designee. In addition, students need to meet with faculty members in order to select a mentor for their Discovery phase project. If possible, these meetings should be scheduled during a time that minimizes student disruptions in clinical care activities.

## ***CURRICULUM***

After nearly 3 years of planning involving hundreds of medical faculty and students, and key members of Emory's schools of nursing, public health, and graduate programs in the arts and sciences, Emory School of Medicine implemented an innovative medical curriculum in August 2007. This exciting program was carefully designed after extensive consultation with other renowned medical institutions and educational experts in the United States and the United Kingdom. Emory's curriculum reflects the extraordinary advances taking place in biomedical science; meets the needs of an ever-changing local and global healthcare environment; takes advantage of the unique educational resources in Atlanta; and respects the intellectually gifted and highly motivated students who choose to come to Emory.

Focusing on small-group learning and increased interaction with faculty, students are immersed in clinical experience from the very beginning. A multitude of clinical sites provide students with extensive training in patient care, including an Outpatient Experience that begins early in the first year. A 5-month Discovery period allows time for clinical or bench research, international experience, or other academic inquiry.

### **Curriculum Philosophy and Design**

The specific structure of the curriculum was designed by the faculty and student leadership in keeping with the following desired characteristics of Emory School of Medicine graduates:

Superb clinicians who demonstrate the highest degree of professionalism; outstanding clinical competency and problem solving skills; and the ability to understand and utilize basic science in the clinical setting;

Curious and creative thinkers with the ability to utilize available resources to answer clinical and research questions and to assess information critically;

Lifelong adult learners with the ability to take ownership of their own present and future educational needs;

Physicians who continue to be passionate about medicine and about making a difference; who are involved in and appreciate efforts to improve the health of local and global communities; who see medicine as profession that seeks to address issues of social justice;



Physicians committed to understanding the sociological, psychological, and economic issues of the patient, the family, and the community;

Future leaders eager and able to play leadership roles in their chosen field of medicine or biomedical science, and in their community.

To achieve graduates with these characteristics, our curriculum:

Is competency-based, through the development and assessment of core competencies as determined by the faculty;

Provides for integration of basic and clinical science--both horizontally (across disciplines) and vertically (across years)--throughout all four years;

Provides an early introduction of clinical medicine and an increase in clinical experience in the ambulatory setting, including a sustained experience in a continuity clinic;

Increases flexibility throughout the four years of the curriculum;

Provides an "in-depth" discovery phase that will enhance creativity, curiosity and the development of leadership skills. Inherent in this opportunity is the potential of a tuition-free fifth year of study, and encouragement of year-long experiences at Emory (e.g. lab-based research, MPH at the Rollins School of Public Health) or at other institutions (e.g. CDC, NIH);

Reduces lecture time and rely less on rote memorization with simultaneous creation of more opportunities for active learning;

Provides better methods of academic and clinical assessment closely linked to the appropriate competencies;

Increases student mentoring throughout the four years of medical school and increases exposure to master clinicians at all Emory clinical sites;

Increases use of clinical simulation and standardized patients for skills training and assessment.

#### **Four Phases in Four Years**

The MD curriculum is divided into four phases ([view a chart of the 4 year MD Curriculum](#)):

- **Phase 1:** *Foundations of Medicine*. This phase provides students with the core knowledge of basic and clinical sciences.
- **Phase 2:** *Application of Medical Sciences*. This phase provides students with core knowledge of the basic clinical medical specialties.

- **Phase 3: Discovery.** This phase is a structured time for students to concentrate in a specific area of interest, such as basic or clinical research, public health, community development, medical ethics, or other areas.
- **Phase 4: Translation of Medical Sciences.** This phase prepares the student for the transition to physician. Rotations as a Sub-Intern; advanced clinical work in an ICU; experience in the Emergency Department; and a final Capstone Course prior to graduation are required.

## The MD Curriculum

(actual dates can vary and content is subject to change)													
	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	
Year 1	PHASE 1: FOUNDATIONS OF MEDICINE												
	Healthy Human				Human Disease								
	Small Group - Essentials of Patient Care (EPC)												
	Community Learning & Social Medicine (CLSM)												
				Outpatient Clinical Experience (OPEX)									
				Anatomy (Dissection) Lab									
Year 2	PHASE 1 - cont'd				USMLE Step 1			PHASE 2: APPLICATION OF MEDICAL SCIENCES					
	Human Disease - cont'd							Core Clinical Rotations					
	Small Group - EPC - cont'd							Surgery, Medicine, Pediatrics, Psychiatry, Neurology, OB-GYN, Dermatology, Ophthalmology, Palliative Care, Anesthesiology, Primary Care, Radiology, Ethics, and EBM (also includes Integrations)					
	CLSM - cont'd												
	OPEX - cont'd												
		Sophomore Elective				Small Group - Clinical Years							
Year 3	PHASE 2 - cont'd						USMLE Step 2	PHASE 3: DISCOVERY					
	Core Clinical Rotations - cont'd												
	Small Group - Clinical Years - cont'd												
Year 4	PHASE 4: TRANSLATION OF MEDICAL SCIENCES								Capstone				
	Emergency Medicine, Critical Care, Sub-Internship, Electives, Residency Interviews												

### Foundations of Medicine (18 months)

Following a week-long shadowing experience, known as "Week on the Wards," students begin "Healthy Human", a 4-month study of healthy human physiology. During this time, students begin their clinical skills training, meeting twice a week with their small group – forming a close relationship with classmates and their faculty mentor early on. Small group discussions about professionalism, ethics, communication, cultural competency, and other "How to be a Doctor" skills add to the "whole person approach" to medical education.

Using those new skills, students begin seeing patients in an outpatient clinic in the early months of medical school. Reporting for service one afternoon every other week for 12-months, first-year medical students are able to learn, hands-on, from a healthcare team – and their patients – in a longitudinal experience.

Approximately five months into the curriculum, students begin studying human disease in organ systems based blocks for the duration of the Foundations Phase. Anatomy lab also takes place during this time period. Each of 24 dissection tables is equipped with a computer to display cross-sectional imaging, study guides, lecture notes, and other electronic references.

An integral part of the MD student experience is the Community Learning and Social Medicine course. This 4-year structured learning experience combines community service with preparation, action and reflection. Learners work with over 50 community based organizations/partners focused on one of four underserved or disadvantaged populations including elderly, disabled, economically disadvantaged, and immigrant/refugee populations.

Upon completion of the formal courses in Foundations, students are given two months of study time for Step 1 of the United States Medical Licensing Exam.

Grading is Satisfactory/Unsatisfactory for the Foundations phase of the curriculum.

### **Course Requirements for MD Degree Program (187 Total Credits)**

#### **Foundation Phase – 86 credit hours**

- |               |   |
|---------------|---|
| <b>MD 505</b> | <b>Foundation – Prologue I Healthy Human</b> – 2 weeks/credits<br>Module Director: Mary Jo Lechowicz, MD<br>Required, S/U                           |
| <b>MD 508</b> | <b>Foundation – Human Development</b> – 1 week/credit<br>Module Directors: Terri McFadden, MD<br>Required, S/U                                      |
| <b>MD 510</b> | <b>Foundation – Embryos, Tissues, and Cells</b> – 3 weeks/credits<br>Module Directors: Winfield Sale, PhD; Victor Faundez, MD, PhD<br>Required, S/U |
| <b>MD 515</b> | <b>Foundation – Neural Function</b> – 2 weeks/credits<br>Module Director: Douglas Falls, MD<br>Required, S/U  |
| <b>MD 520</b> | <b>Foundation – Integrated Healthy Physiology</b> – 2 weeks/credits<br>Module Directors: Inyeong Choi, PhD; Laurence Sperling, MD<br>Required, S/U  |
| <b>MD 525</b> | <b>Foundation – Nutrition and Metabolism</b> – 2 weeks/credits<br>Module Director: David Pallas, PhD; Thomas Ziegler, MD<br>Required, S/U           |
| <b>MD 530</b> | <b>Foundation – Endocrine Control</b> – 1 week/credit<br>Module Directors: Eric Felner, MD; Victor Faundez, MD, PhD<br>Required, S/U                |

- MD 535      Foundation – Genetics and Evolution – 2 weeks/credits**  
Module Director: Kathryn Garber, PhD; Rossana Sanchez Russo, MD  
Required, S/U
- MD 540      Foundation – Aging and Dying – 1 week/credit**  
Module Director: Sivan Ben-Moshe, MD  
Required, S/U
- MD 545      Foundation – Prologue II Human Disease – 4 weeks/credits**  
Module Director: Jennifer Spicer, MD  
Required, S/U
- MD 550      Foundation – Skin, Bones, Muscles & Joints – 4 weeks/credits**  
Module Directors: Jennifer Brandt, MD; Jamie Mackelfresh, MD  
Required, S/U
- MD 555      Foundation – Pulmonary – 5 weeks/credits**  
Module Director: Ashish Mehta, MD  
Required, S/U
- MD 560      Foundation – Cardiovascular – 5 weeks/credits**  
Module Directors: Dimitri Cassimatis, MD; Lakshmi Tummala, MD  
Required, S/U
- MD 565      Foundation – Gastrointestinal – 4 weeks/credits**  
Module Director: Tanvi Dhere, MD  
Required, S/U
- MD 570      Foundation – Renal and Genitourinary – 4 weeks/credits**  
Module Directors: Ali Kashkouli, MD; James Bailey, MD  
Required, S/U
- MD 580      Foundation – Evidence Based Medicine – 1 week/credits**  
Module Director: David Schulman, MD  
Required, S/U
- MD 600      Foundation – Endocrine/Reproductive Health – 5 weeks/credits**  
Module Directors: Eric Felner, MD; Mary Dolan, MD  
Required, S/U
- MD 605      Foundation – Hematology – 3 weeks/credits**  
Module Director: Morgan McLemore, MD  
Required, S/U
- MD 610      Foundation – Neuroscience – 4 weeks/credits**  
Module Director: Daniel Winkel, MD  
Required, S/U

- MD 615      Foundation – Behavioral Science** – 5 weeks/credits  
Module Directors: Rickey Gillespie, MD  
Required, S/U
- MD 620      Foundation – Infectious Disease** – 2 weeks/credits  
Module Director: Wendy Armstrong, MD  
Required, S/U
- MD 625      Foundation – Elective** – 2 credits  
Module Director: Jason Liebrecht, MD  
Required, S/U
- MD 630      Foundation – Review Human Disease** – 3 weeks/credits  
Required, S/U
- MD 635      Foundation – Review and Self Study** – 4 weeks/credits  
Required, S/U
- MD 639      Foundation – Essentials of Patient Care (EPC) I** – 8 credits  
Instructors: Lisa Bernstein, MD; Martha Ward, MD  
Required, S/U
- MD 642      Foundation – Ethics in Medicine I** – 1 credit  
Course Director: Kathy Kinlaw, MDiv  
Required, S/U
- MD 645      Foundation – Community Learning & Social Medicine (CLSM)** – 6 cr  
Course Directors: Maura George, MD  
Required, S/U

### **Application of Medical Sciences (12 months)**

Providing students with core knowledge of the basic clinical medical and surgical fields, each student will complete required rotations in Surgery, Medicine, Pediatrics, Psychiatry, Neurology, Obstetrics & Gynecology, Radiology, Primary Care, Dermatology, Ophthalmology, Palliative Care, and Anesthesiology.

Students complete the Application Phase in the middle of Year 3, at which time an individual student may move directly into five months of Discovery or may choose to take clinical electives in sub-specialty fields. This will afford students the opportunity to choose their research area within their expected field of residency, if desired.

During the Application phase, students still regularly meet with their Small Groups to further develop their professional identity and to process and reflect on their clinical experiences.

## **Application Phase – 53 credit hours**

- MD 701      Application – Pre-Application Clinical Knowledge Skills – 5 cr**  
Clerkship Director: Megan Henn, MD  
Required, S/U
- MD 705      Application – Adult Primary Care – 5 credits**  
Clerkship Directors: Eva Rimler, MD; Emily Herndon, MD  
Required, Letter Grade
- MD 710      Application – Internal Medicine – 6 credits**  
Clerkship Directors: Meredith Lora, MD; Varun Phadke, MD  
Required, Letter Grade
- MD 715      Application – Neurology – 3 credits**  
Clerkship Director: Taylor Harrison, MD  
Required, Letter Grade
- MD 720      Application – Obstetrics/Gynecology – 6 credits**  
Clerkship Directors: Jennifer Goedken, MD  
Required, Letter Grade
- MD 725      Application – Pediatrics – 6 credits**  
Donald Batisky, MD  
Required, Letter Grade
- MD 730      Application – Psychiatry – 6 credits**  
Clerkship Director: Jeffrey Rakofsky, MD  
Required, Letter Grade
- MD 735      Application – Surgery – 6 credits**  
Clerkship Director: Barbara Pettitt, MD  
Required, Letter Grade
- MD 740      Application – Anesthesiology – 1 credit**  
Clerkship Director: Joanna Schindler, MD  
Required, S/U
- MD 741      Application – Dermatology – 1 credit**  
Clerkship Director: Jamie Mackelfresh, MD  
Required, S/U
- MD 742      Application – Palliative Care – 1 credit**  
Clerkship Director: Ashima Lal, MD  
Required, S/U
- MD 743      Application – Ophthalmology – 1 credit**  
Clerkship Director: Emily Graubart, MD  
Required, S/U

- MD 745      Application – Radiology – 2 credits**  
Clerkship Directors: Kieth Herr, MD  
Required, Letter Grade
- MD 750      Application – Ethics in Medicine II – 1 credit**  
Course Director: Kathy Kinlaw, MDiv  
Required, S/U
- MD 755      Application – Integration I – 1 credit**  
Course Directors: David Schulman, MD; Maura George, MD  
Required, S/U
- MD 756      Application – Integration II – 1 credit**  
Course Directors: David Schulman, MD; Maura George, MD  
Required, S/U
- MD 757      Application – Integration III – 1 credit**  
Course Directors: David Schulman, MD; Maura George, MD  
Required, S/U

### **Discovery Phase (20 weeks)**

The Discovery phase is a structured time for students to conduct a hypothesis-driven research project under the direction of a faculty member. While the Discovery project must be a scientific inquiry based in Medicine, students are able to combine their interests in other areas, such as creative writing, public health, community development, education, or health policy into their project. Some

students are also able to include an international experience in their Discovery project. This is a critical opportunity for students to renew their creative energies and explore a new facet of medicine under the tutelage of an Emory faculty member.

During Discovery, medical students work full time on their projects with no other commitments except occasional seminars or workshops relevant to their research. Many students publish their Discovery work in peer-reviewed scientific journals and all students present their Discovery project at Medical Student Research Day in the fourth year.

- MD 800      Discovery Phase – 20 credit hours**  
Director – Maureen Powers, PhD  
Required\*, Letter Grade

*\* Students taking an extra year to obtain a dual degree (other than MD/MBA and certain concentrations of the MD/MPH degree that do not require a thesis) are granted an exemption from this five-month phase.*

## **Translation of Medical Sciences (9 months)**

This phase prepares each individual for the transition to physician. Required senior rotations include Emergency Medicine, Critical Care Medicine (ICU), 3 months of electives, and a sub-internship in Surgery, Medicine or Pediatrics; there is sufficient time for away-rotations during this year. The Translation Phase concludes with a required month-long Capstone course that offers carefully designed lectures, workshops, panel discussions, and exercises which equip the soon-to-be graduate with the practical skills and information that will be crucial to their success as residents.

### **Translation Phase – 28 credit hours**

- MD 905      Translation – Senior Medicine Sub-Internship** – 4 credits  
Course Director: J. Richard Pittman, MD  
Required\*, Letter Grade
- MD 906      Translation – Senior Surgery Sub-Internship** – 4 credits  
Course Director: Joshua Winer, MD  
Required\*, Letter Grade
- MD 907      Translation – Senior Pediatrics Sub-Internship** – 4 credits  
Course Director: Donald Batisky, MD  
Required\*, Letter Grade

*\* Students are required to select and complete one of the sub-internships from this list.*

- MD 910      Translation – Critical Care** – 4 credits  
Course Director: Lisa Daniels, MD; Katherine Nugent, MD  
Required, Letter Grade
- MD 915      Translation – Emergency Medicine** – 4 credits  
Course Directors: Megan Henn, MD, Steven Lindsey, MD  
Required, Letter Grade
- MD 920      Translation – Elective** (3 required)\* – 4 credits each/12 credits total  
Course Directors: Various  
Required, S/U

*\* Students are required to take three electives for a total of 12 credit hours. There are over 100 elective course offerings. If a student has an interest in an area where there is no elective offering, they can create a unique experience with a faculty preceptor. This experience requires the advance approval of the Associate Dean of Clinical Education.*

- MD 940      Capstone – 4 credits**  
Course Directors: Jason Liebrezeit, MD; Bijal Shah, MD  
Required, S/U



# **COURSE REQUIREMENTS FOR MD/PHD AND MD/OMS PROGRAMS**

## **MD/PhD (159-163 total credits)**

In addition to all of the requirements for the PhD degree, students who are enrolled in the MD/PhD program at Emory University School of Medicine must meet all of the requirements for the MD program, with the following minimum course requirements:

### **Foundation Phase – 86 credit hours**

*Curriculum requirements listed above*

### **Application Phase – 53 credit hours**

*Curriculum requirements listed above*

Students re-entering after completion of their PhD will begin with an ungraded IM experience.

### **Discovery Phase – Exempt as listed above – 0 credit hours**

*Curriculum requirement fulfilled by the PhD degree*

### **Translation Phase – 20-24 credit hours**

4 weeks Senior Medicine Sub-Internship, Senior Pediatrics Sub-Internship, or  
Senior Surgery Sub-Internship

4 weeks Critical Care

4 weeks Emergency Medicine (*for those who matriculated in 2015 or later*)

8 weeks electives (2 electives, 4 weeks each)

4 weeks Capstone

Upon return from the graduate program, and during the final year of medical school, MD/PhD students may be required to complete additional elective rotations, as determined by the Associate Dean of Clinical Education. MD/PhD students will be required to participate in the 4-week Capstone course, including Research Day, to present their research project findings.

MD/PhD students are required to be enrolled each semester into the MD/PhD Clinical Research Conference. In addition, MD/PhD students are strongly encouraged to volunteer at clinical sites during their Graduate School years, as they are able, in order to continue to maintain and develop their clinical skills. In the final year as a PhD student, prior to re-entry to medical school, all students must take the MD/PhD Clinical Refresher course, which prepares them to begin clinical clerkships.

*MD/PhD students who meet the requirements for PhD degree will be exempt from completing the Discovery Phase with the School of Medicine in order to receive the MD degree. Students who matriculated before 2015 will not be required to take Emergency Medicine; however, it can be taken toward elective credit.*

## **MD/Oral & Maxillofacial Surgery Program (MD/OMS) (93 Total Credits)**

In addition to all of the requirements for the Oral & Maxillofacial Graduate Medical Education Program, students who are enrolled in the special MD/OMS Program at Emory University must complete the following requirements in order to receive the MD degree:

Students matriculate as a transfer student upon completion of the following requirements:

- passing score on USMLE Step 1, and
- passing score on the End of Foundations Objective Structured Clinical Examination (OSCE).

### **Application Phase – 53 credit hours**

5 weeks – Pre-Application Clinical Knowledge Skills (PACKS)

6 weeks – Internal Medicine

6 weeks – Surgery

6 weeks – Pediatrics

6 weeks – Obstetrics & Gynecology

6 weeks – Psychiatry

5 weeks – Adult Primary Care

3 weeks – Neurology

1 week – Dermatology

1 week – Ophthalmology

1 week – Palliative Medicine

1 week – Anesthesiology

Radiology intertwined with Application clerkships (2 credit hours)

Ethics in Medicine II (1 credit hour)

Integration I, II, and III (1 credit hour each)

### **Discovery Phase – 20 credit hours**

A faculty-mentored research project as described by the Discovery Phase curriculum must be completed. All requirements for the Discovery Phase must be met, including a final paper and poster presentation to be presented on Senior Research Day during Capstone.

### **Translation Phase – 20 credit hours**

4 weeks – Senior Sub-Internship

4 weeks – Critical Care Medicine

4 weeks – Emergency Medicine

4 weeks – Elective (1)

4 weeks – Capstone

MD/OMS students are *exempt* from these regular MD requirements:

*Two 4-week electives in the Translation Phase*

# ***GRADUATION REQUIREMENTS FOR THE MD DEGREE***

## **Student Physician Activities (SPAs)**

The Emory University School of Medicine Executive Curriculum Committee has stated the outcomes of the MD program in terms of the activities characteristic of a physician that students will learn and do. These "Student Physician Activities" (SPAs) define what students should be able to perform prior to graduation.

- |        |   |
|--------|---|
| SPA 1  | Take a patient-centered history (focused and complete)  |
| SPA 2  | Perform a physical examination (standard and "core and cluster") and recognize normal and abnormal findings |
| SPA 3  | Demonstrate understanding of relevant scientific principles of medicine                                     |
| SPA 4  | Prioritize a differential diagnosis based on clinical reasoning   |
| SPA 5  | Develop a patient care plan   |
| SPA 6  | Perform technical procedures  |
| SPA 7  | Communicate with patients and their support system regarding their care                                     |
| SPA 8  | Participate in difficult conversations with patients and their families                                     |
| SPA 9  | Document and present patient findings and treatment plans   |
| SPA 10 | Explain the scientific principles of medicine as applied to differential diagnoses and patient care plans   |
| SPA 11 | Use electronic medical records  |
| SPA 12 | Formulate clinical questions and search the literature for evidence that enhances patient care.             |
| SPA 13 | Contribute to generalizable medical knowledge   |
| SPA 14 | Apply best evidence to the care of individual patients  |
| SPA 15 | Recognize and address ethical dilemmas  |
| SPA 16 | Protect patient information   |
| SPA 17 | Fulfill the unique professional role of a physician in society  |
| SPA 18 | Manage time   |
| SPA 19 | Be a leader   |

- SPA 20     Use feedback to improve one's own practices
- SPA 21     Demonstrate trustworthiness to patients, colleagues, and other healthcare personnel
- SPA 22     Treat patients while understanding own biases
- SPA 23     Treat patients without regard to personal advantage
- SPA 24     Work in interprofessional teams
- SPA 25     Identify personal limitations and seek assistance as needed
- SPA 26     Teach peers and team members
- SPA 27     Serve the community
- SPA 28     Contribute to healthcare quality and safety initiatives

**Before graduation, all medical students should be able to:**

1. Adhere to universal precautions
2. Put on gloves and gowns using sterile technique
3. Attain Basic Life Support certification (as evidence by completion of BLS course)
4. Use an automatic external defibrillator
5. Draw venous blood

**Academic Requirements**

The judgment of the faculty as to the fitness of a student for the MD degree is based not only upon scholastic achievement, but also upon evidence of the student's character and professionalism. Each student must be approved for graduation by the Dean and the School of Medicine Council of Chairs.

To be eligible to receive the degree of Doctor of Medicine from Emory University School of Medicine, students must:

1. Have attained satisfactory standing in all courses and clerkships required for the degree and mastered the 28 Emory University School of Medicine SPAs;
2. Have taken and successfully passed Step 1, Step 2 Clinical Knowledge and Step 2 Clinical Skills of the USMLE;
3. Have completed all academic requirements of the MD degree within no more than six academic years from the date of matriculation.

**Financial Obligations**

It is a requirement for graduation that all financial obligations to the University shall have been satisfied. Students with an unpaid balance on their student accounts may have a hold placed on their diploma and transcripts until the balance is paid in full.

## **GRADUATION REQUIREMENTS FOR OTHER MD DUAL DEGREE PROGRAMS**

### **MD/PhD**

All MD students enrolled in the MD/PhD program at Emory University School of Medicine must meet all of the stated requirements for the MD program, in addition to all of the requirements for the PhD degree as set by the Laney Graduate School of Arts and Sciences and the Director for the MD/PhD program at Emory University.

Students who meet the requirements for MD/PhD degree will be **exempt the Discovery Phase** with the School of Medicine in order to receive the MD degree. Students who **matriculated prior to 2015 are not required to take Emergency Medicine. Total elective credits required is 8.**

Upon return from the Laney Graduate School of Arts and Sciences, and during the final year of medical school, MD/PhD students may be required to complete additional elective rotations, as determined by the Associate Dean of Clinical Education. All MD/PhD students are required to participate in Research Day for their graduating class and present their PhD research findings.

### **MD/MPH**

All students enrolled in the MD/MPH program at Emory University School of Medicine must meet all of the regular requirements for the MD program, in addition to all of the requirements for the MPH degree as set by the Rollins School of Public Health at Emory University.

Students who meet the Discovery research requirements while pursuing the MPH degree will be **exempt from the Discovery Phase** with the School of Medicine in order to receive the MD degree. **MPH programs with a capstone requirement in lieu of a thesis will also be expected to complete the MD Discovery Phase.**

Upon return from the Rollins School of Public Health, and during the final year of medical school, MD/MPH students may be required to complete additional elective rotations, as determined by the Associate Dean of Clinical Education. All MD/MPH students are required to participate in Research Day for their graduating class and present their MPH degree program thesis.

### **MD/MSCR**

All MD students who participate in the MSCR program at Emory University must meet all of the regular requirements for the MD program, in addition to all of the requirements for the MSCR degree as set by the Atlanta Clinical & Translational Science Institute and the Director of the MSCR Program.

Students who meet the requirements for MSCR degree will be **exempt from the Discovery Phase** with the School of Medicine in order to receive the MD degree.

MD/MSCR students are required to complete 5 additional *research* electives to fulfill the requirements for the MSCR degree. All MD/MSCR students are required to

participate in Research Day for their graduating class and present their MSCR project findings.

### **MD/MA in Bioethics**

All MD students enrolled in the MA in Bioethics program at Emory University School of Medicine must meet all of the regular requirements for the MD program, in addition to all of the requirements for the MA in Bioethics degree as set by the Laney Graduate School of Arts and Sciences and the Director for the MA in Bioethics Program at Emory University.

**Students who meet the requirements for MA in Bioethics degree will be exempt the Discovery Phase with the School of Medicine in order to receive the MD degree.**

Upon return from the Laney Graduate School of Arts and Sciences, and during the final year of medical school, MD/MA students may be required to complete additional elective rotations. All MD/MA students are required to participate in Research Day for their graduating class and present their MA degree program thesis.

### **MD/MBA**

All MD students who participate in the MBA program at Emory University must meet all of the regular requirements for the MD program in addition to all of the requirements for the MBA degree as set by the Goizueta Business School.

Students who meet the requirements for the MBA degree will **complete four of the five months of the MD Discovery Phase** and any other requirements set by the Discovery Phase Director with the School of Medicine in order to receive the MD degree.

All MD/MBA students are required to participate in Research Day for their graduating class and present their research findings.

### **Other Dual Degree Programs**

MD Students who wish to pursue other degrees at Emory University or other institutions must meet with the Dean of Medical Education to determine an academic plan for the remainder of the MD requirements prior to matriculation in any other degree program or at any other institution.

## ***STANDARDS OF PROGRESS***

### **Assessment, Evaluation, and Grading**

Assessments are measurements of student performance conducted using instruments such as written exams or observational checklists. Evaluations are comprehensive summaries of student performance measured against a performance standard. Grades are assigned based on data collected from both assessments and summative evaluations.

A wide variety of assessment types are used to measure students' academic and professional performance in relation to the Emory University School of Medicine. Student Physician Activities (SPAs) and are incorporated into grades for courses and clerkships. In addition to written exams and academic papers, instructor observational assessments are often used during small group work, during patient care on clerkships, for elective courses, and in research labs. Objective Structured Clinical Exams (OSCEs) are a regular and vital element of student assessment.

## **Grading Scales**

### **S/U**

"S" indicates satisfactory work; Pass

"U" indicates unsatisfactory work and carries no academic credit; Fail

A grade of "U" carries no academic credit. A student cannot be promoted to the next phase of the curriculum with a grade of "U" on their transcript. Any student who receives a "U" will, at a minimum, have to remediate the course, and will be susceptible to additional actions such as probation or dismissal, as determined by the Progress and Promotions Committee.

### **A-F**

The letter grades "A" through "F" indicate the quality of a student's performance as measured by various assessment instruments and processes: modifiers of 'plus' or 'minus' with letter grades are also used. Letter grades are derived from a comprehensive, summative evaluation of a student's achievement, both academically and professionally. Grades are assigned based on published criteria.

"A" indicates exceptional performance

"B" indicates good performance with no identified weaknesses

"C" indicates acceptable performance with improvement needed

"D" indicates unacceptable performance on at least one criterion, and no academic credit is awarded

"F" indicates unacceptable performance on multiple criteria, and no academic credit is awarded

A student cannot be promoted to the next phase of the curriculum with a grade of "D" or "F" on their transcript. Any student who receives a "D" or "F" will, at a minimum, have to repeat the clerkship, and the student will be susceptible to additional actions such as probation or dismissal, as determined by the Progress and Promotions Committee. Any repetition of coursework must be completed as soon as possible after the grade of "D" or "F" has been submitted.

## **IP and I**

"IP" indicates 'in-progress' course work. Final transcripts cannot carry grades of "IP."

"I" indicates incomplete course work.

The grade of "I" will be assigned to students who have been unable to complete the requirements of the course/clerkship due to absences approved by the dean's office. The grade of "I" is appropriate only when enough work has been completed at an acceptable level of performance such that the student can complete the remaining work without repeating the entire course/clerkship.

If a student receives a grade of "I," the remaining work must be completed within a reasonable time, as determined by Associate Dean for Clinical Education, or the grade of "I" will automatically convert to an "F." The grade of "I" cannot be assigned for unsatisfactory work. The grade of "I" is to be viewed as a non-prejudicial entry on the student's record.

## **W**

"W" indicates withdrawal from course or clerkship without penalty

"WU" indicates unsatisfactory withdrawal

## **Grading in the Foundation Phase**

In the Foundations Phase of the curriculum, grades "S" or "U" are assigned to students for each module. Students will receive a grade of Satisfactory in any module during the Foundations phase if students meet either of the following criteria: A student's total score for the course must be greater than 2 standard deviation units below the mean (i.e.  $z > -2.0$ ) **OR** the student's total percentage score is greater than 68.2%. When appropriate, students may also be assigned the grades of "I," "IP," "W," "WF," or "WU."

Students may not progress to the Application Phase of the curriculum without receiving a final grade of "S" in all Foundations courses. Although Anatomy is not a separately graded course, students must reach a satisfactory standard of performance as defined in the Anatomy syllabus.

## **Remediation During the Foundation Phase**

Assessments are used to identify those students who have not achieved minimal competency during a course: remediation is the process used to improve student performance and ensure that **all** students achieve the designated Student Physician Activities (SPAs) before moving on to the Application Phase of the curriculum.

## **Remediation Policy**

The Office of Medical Education and Student Affairs will notify students of their need to remediate a module no later than three weeks after exam completion. This email will be cc'd to the module director.



## Schedule

- The student must contact the course director within one week after the notification from OMESA. **It is the responsibility of the student to schedule the remediation process with the course director.**
- Students are required to make their first attempt at remediation no later than two weeks after their notification about the need to remediate an anatomy examination, and no later than the end of the week following the next school break for all other courses. Under certain circumstances, remediation may be delayed *with prior permission* from Dr. David Schulman, Director of Foundations.
- Students with remediations outstanding at the end of the Foundations Phase must complete these remediations no later than December 31 of their second year of medical school. All remediations must be complete before a student may move into the Application phase.

## Process

- Students requiring remediation must meet with the director of the course to be remediated. If, during this conversation, the student identifies a non-academic contributor to their poor performance (i.e., something medical or social), this should be brought to the attention of the Executive Associate Dean of Medical Education and Student Affairs, Dr. Bill Eley, [jeley@emory.edu](mailto:jeley@emory.edu) or 404-712-9979.
- The process for remediation, as determined by the course director, should be tailored to the individual student through the identification and correction of specific areas of deficiency. Retaking the entire course exam should only be necessary if the student's performance in all major content areas is unsatisfactory.
- The course director will provide the Office of Medical Education and Student Affairs a record of the remediation process for each student. This record will outline the format of the remediation, the dates on which it occurred, and whether the student successfully remediated on that date. If the student was unsuccessful on an attempt at remediation, the course director will briefly outline how they were unsuccessful. This will be part of the student's record. Failure to demonstrate adequate competence will necessitate additional remediation by the student. If a student is not able to demonstrate mastery of the course material after two attempted remediations, the course director may consult with the Progress and Promotions Committee regarding appropriate next steps.
- Each failed anatomy exam will need to be individually remediated. If a student fails any exam on the first attempt, that failure will be documented for Progress and Promotions.

To more readily identify students in academic difficulty and offer them additional support services in a timely fashion, students who need to remediate more than one course/thread will be provided with information on receiving a learning assessment, the results of which may trigger further support services that may help the student avoid the need to remediate additional courses.

For students required to repeat the Foundations phase of the curriculum, student progression in anatomy will be as follows:

- Students will be allowed to continue in anatomy, at the discretion of the anatomy director, *if* they begin the repetition process after having already started the anatomy thread. In this situation, students will not be required to retake anatomy (as part of repeating Foundations) if they pass ALL of the anatomy exams.

### **Grading in the Application, Discovery, and Translation Phases**

In the Application, Discovery, and required clerkship portion of the Translation Phases of the curriculum, grades "A+" through "F" are assigned to students. For electives taken during in the Translation Phase, grades of "S" or "U" are assigned. When appropriate, students may also be assigned the grades of "I," "IP," "W," "WF," or "WU."

If a student fails any aspect of a clerkship that is required to pass the clerkship, the student will receive a failing grade ("D" or "F") for the clerkship and be required to repeat the clerkship in its entirety. The student will be re-enrolled in the clerkship and a second grade will be issued after repetition of the clerkship; however, the "D" or "F" grade earned after completing the clerkship for the first time will remain on the student's official transcript.

Students must successfully complete all Applications clerkships before proceeding to the next phases of the curriculum.

### **Completion of Clerkship Requirements**

All clerkship requirements, as defined by the individual clerkship directors, must be completed by 5pm on the final day of the rotation, including but not limited to patient logs in OASIS and direct observation forms. Students who fail to complete clerkship requirements on time will be subjected to penalties outlined by the clerkship directors and may result in a grade deduction or a failing grade for the clerkship.

### **Remediation During the Application, Discovery, and Translation Phases**

Students who receive a D or F in a clerkship or Discovery will have to repeat and successfully pass the respective clerkship or Discovery in order to progress to the next phase of the curriculum.

### **Conflicts of Interest in Grading**

Residents and faculty members with a conflict of interest (e.g., professional, personal, or familial relationship to a student, including providing health services or psychiatric/psychological counseling) should not participate in assessing a student in which a conflict exists. The EUSOM Separation of Roles outlines this in further detail.

On the rare occasion when a student's Small Group Advisor is also a clerkship director, the department Vice Chair for Education (or designee) will be responsible for assigning grades for those students in which a conflict exists.

## **Grade Appeals**

Students are encouraged to discuss their final grades with the course, clerkship, or elective director. Although grades are assigned as an accurate and fair representation of a student's work, students have the right to appeal a grade and to receive an independent review of the grading criteria and their performance.

If a student wishes to appeal a final grade, this should be presented in writing to the Executive Associate Dean of Medical Education and Student Affairs **within 14 days** of receiving the grade. The appeal may be based on the process that led to the grade and/or questions of factual content used in the evaluation process. The Executive Associate Dean for Medical Education and Student Affairs or his/her designee will then review the basis for the appeal of the grade.

Upon review, the Executive Associate Dean for Medical Education and Student Affairs may find that based on process or factual content, there is no basis for a change of an evaluation or grade.

Alternatively, the Executive Associate Dean for Medical Education and Student Affairs may recommend that the grade be changed.

After review by the Executive Associate Dean for Medical Education and Student Affairs and submission of the reconsidered grade, the student may appeal any decision to the Dean of the medical school. The decision by the Dean shall be final.

It should be noted that any and all grade appeals should be conducted in a professional manner by the student involved; that is, demonstrating respectful disagreement with the perspective and judgment used by faculty members. Failure to exhibit appropriate professional attitudes may immediately terminate the appeal process and lead to an unprofessional conduct report.

## **End of Phase Required Objective Structured Clinical Examinations (OSCE)**

As a requirement of the longitudinal Essentials of Patient Care course, students must successfully pass the "End of Foundation OSCE" and the "End of Application OSCE." Failure of passing either OSCE requires appropriate remediation and subsequent passing of the OSCE in order to pass the course and progress to the next phase of the curriculum.

## **National Board of Medical Examiners (NBME) Subject and United States Medical Licensing Examination (USMLE) Requirements for Medical Students**

### **NBME Subject Exams**

NBME Subject Examinations are an important part of the educational process, evaluating the performance of a large, representative group of examinees at the same stage of training. These exams are used throughout the curriculum as one part of the evaluation process. Students are required to take NBME Subject Examinations at scheduled times and locations. Those students granted accommodations for testing must present them to Ms. Sherice Allen-Henry, Assistant Director of Medical Education, a letter from the Department of Accessibility Services each semester outlining the student's specific accommodations.

Individual arrangements will be made for the student at each exam in accordance with the specified accommodations.

To prevent additional charges, exam orders must be placed at least 22 days prior to the testing date. Therefore, it is important for the Office of Medical Education and Student Affairs (OMESA) to know well in advance the number of students scheduled to test at every exam. Unexcused absences from NBME exams will result in the student being charged for any additional costs associated with rescheduling of the examination.

For NBME examinations, students MUST test during the exam time (and date) supported by the medical school. A published exam schedule is available through the student portal.

To ensure the security of NBME materials and compliance with testing regulations, all NBME subject exams must be administered by trained proctors in an NBME-approved testing site.

### **Arriving Late for an NBME Exam or Missing Examinations**

It is considered part of professional behavior and the responsibility of the student to arrive on time for scheduled examinations with their Emory cards.

Emory designates a Chief Proctor for NBME exams. It is the responsibility of the Chief Proctor and his or her designees to assure that NBME exams are given in strict accordance with NBME policy. As per this policy, a student may be admitted to a testing room up to 30 minutes after the exam has started, provided the student's name is on the check-in roster and the Chief Proctor approves the late start. Students arriving late for an exam will be expected to end the exam at the same time as other examinees; no extra time will be allotted to compensate for their tardiness.

For any student who is more than 30 minutes late for the exam, the NBME must be contacted by the Chief Proctor to seek approval for taking the examination. The Chief Proctor and his or her designees are not required to allow any student to start an exam late if doing so will be excessively disruptive to the other students.

### **United States Medical Licensing Examination (USMLE)**

The USMLE is an examination series with three complementary steps, the first two of which are graduation requirements for Emory University School of Medicine. Students must successfully pass Step 1 and Step 2 Clinical Knowledge in order to graduate from Emory University School of Medicine.

#### **USMLE Step 1**

In addition to successful performance during the Foundation Phase, students must also earn a passing score, as set by the USMLE, on Step 1 examination of the United States Medical Licensing Examination (USMLE) prior to beginning the Application Phase of the Emory University School of Medicine curriculum. With written permission from the Executive Associate Dean, a student may begin the

Application Phase after having taken the USMLE Step 1 before the test score has been released by the USMLE.

For the Class of 2024, USMLE Step 1 must be taken by **February 7, 2022**, following completion of the Foundations Phase. Prior to taking USMLE Step 1, all academic requirements of the Foundations Phase, including any necessary remediation, must be completed. For students who do not meet these deadlines, the School cannot guarantee Application, Discovery and Translation schedules that will permit the student to graduate at the expected time. Any delay in taking USMLE Step 1 must be approved in writing by the Executive Associate Dean for Medical Education and Student Affairs or his/her designee. Students who do not meet these deadlines for completion of academic requirements and for taking and passing USMLE Step 1 may be referred to the Progress and Promotions Committee for action.

The following guidelines have been adopted regarding failure to pass the first administration of Step 1 of the USMLE.

A student whose overall academic record warrants promotion, but whose failing Step 1 score is 15 points or less below the passing level has two options to gain promotion into the clinical years:

- **Option A** - permits re-taking the test at the next available administration. Once the examination has been retaken, the student may begin clinical work. If a passing score is achieved, the student will continue the Application Phase; if a passing score is not achieved, the student will cease Application Phase course work and be allowed to retake the examination a 3rd time. It is highly encouraged that such students engage in an intense review of the basic sciences and consider auditing courses prior to re-taking the examination for the third and final time.
- **Option B** - grants a year's time during which time the student is encouraged to obtain remedial help and engage in an intense review of the basic sciences, with retake of the examination by February 1<sup>st</sup> of the following year. If the test is passed at that time, the student then enters the Application Phase.

A student whose failing score is more than 15 points below the passing level is generally required to take a leave of absence to prepare for retaking the test the following year. Such students may appeal to the Executive Associate Dean for Medical Education and Student Affairs and request an earlier re-take if extenuating circumstances can be shown.

A student who fails USMLE Step 1 on the second administration will be given a third and final opportunity to successfully pass Step 1. A student who has three unsuccessful attempts to pass Step 1 of the USMLE will be considered for dismissal.

### **USMLE Step 2 Clinical Knowledge (CK)**

Students are encouraged to take Step 2 CK as soon as feasible after the Application Phase. At the latest however, students must take Step 2 CK **by October 31st of their senior year**. Passing Step 2 CK is a requirement for graduation. Students will

have no more than 3 attempts to pass USMLE Step 2 CK. A student who has three unsuccessful attempts to pass Step 2 CK of the USMLE will be considered for dismissal.

## ***PROMOTIONAL GUIDELINES AND THE PROGRESS AND PROMOTIONS COMMITTEE***

### ***PROMOTIONAL GUIDELINES***

A student is considered to be achieving satisfactory academic progress as long as he or she passes the sequence of courses and clerkships established by the Curriculum Committee and meets the performance standards for the 28 SPAs as set by the Executive Curriculum Committee. The assessment of academic progress includes the domains of knowledge, skills, behaviors, and attitudes – as expressed in the form of SPAs. Hence, professionalism is an integral component when considering academic progress.

Independent of the final grade, unprofessional behavior may be the sole criterion for which a student may be recommended for a letter of concern, academic warning, academic probation, suspension, dismissal, or other sanctions as described throughout this document.

Students must be aware that the designation of academic probation or suspension may result in the loss of federal financial aid.

### ***PROGRESS AND PROMOTIONS COMMITTEE***

The Progress and Promotions Committee (P & P) monitors the progress of students during the EUSOM curriculum to ensure that students are performing at an acceptable level to successfully complete their present phase and advance to the next phase of the medical curriculum. In the process of these reviews, the P & P Chair will make recommendations to the EAD regarding academic advancement and academic sanctions according to the criteria below. The EAD or his/her designee will make the final decision as to whether a student can advance with or without sanctions or if a student will receive an academic sanction.

#### ***Academic Advancement***

At the completion of each phase of the EUSOM curriculum, the Registrar will provide the Chair of the P & P with a list of students who are scheduled to advance to the next phase of the academic curriculum. The P & P will then determine if the students meet criteria to advance to the next phase by considering all aspects of a student's performance, including course grades and adherence to the Emory School of Medicine (SOM) Conduct Code, Honor Code and medical school student policies.

During the academic year, the P & P will regularly review the progress of all students to assess whether they are making satisfactory progress toward attaining the achievement levels required for promotion to the next phase of the academic

curriculum. The P & P members will also determine if students are performing below standards, and may determine that a student should receive an academic sanction according to the criteria outlined below.

The Chair of the P & P will inform the EAD of decisions regarding individual student's pending promotion using the following criteria:

1. Adequate Progress: Students with passing grades in all courses/clerkships.
2. Inadequate Progress (these students would not be promoted):
  1. Students with performance below expectations who did not complete the course requirements;
  2. Students placed on academic probation who did not satisfactorily complete the necessary remediation outlined in their probation, or;
  3. Students who are on suspension.

For those students who have two or more incompletes in any phase, this should prompt a review at the level of the EAD (or his/her designee) to create an academic plan for the student that will be shared with the P&P committee at their next meeting.

### **Academic Sanctions**

A *letter of concern* will be considered when the P & P has concerns about a student's performance but feel that the concern is not indicative of a pattern of underperformance, or lapses in professional behavior. The following is a nonexhaustive list of reasons why a student would automatically be recommended by the P and P to receive a letter of concern:

- In the Foundations Phase students will be recommended to receive a letter of concern when they require remediation of two courses.
- In the Foundations, Application, Discovery or Translation phases, students will be recommended to receive a letter of concern when they have a professionalism or performance issue that is significant and the P & P members are concerned, but do not feel this behavior represents a pattern of poor performance or professionalism problems.

An *academic warning* will be considered when a student's deficiencies are of a more serious nature. The following is a nonexhaustive list of academic difficulties for which a student would automatically be recommended to receive an academic warning:

- In the Foundations Phase, students will be recommended to receive an academic warning when they have been required to remediate three courses and the summed credit hours for the three courses is 6 credit hours or more.
- In the Application or Translation phases, an academic warning will be recommended to be given when a student is noted to have a deficiency in their clinical skills over several clerkships or courses (e.g., difficulty synthesizing clinical information); or, when a student receives a grade of C in two or more clerkships in either the Application or Translation phase.

- In the Discovery Phase, students will be recommended to receive an academic warning if they are late in turning in their materials to start their Discovery project.
- In the Foundations, Application, Discovery and Translation phases, a student will be recommended to receive an academic warning if professionalism problems are recurrent over multiple courses or clerkships or a single professionalism transgression that rises above the level of *letter of concern*.

The entirety of the student's academic performance is factored into decisions by the P & P, and an academic warning may also be recommended if a student had difficulties in the Foundations Phase and continues to struggle academically in the Application Phase. An academic warning is intended to alert the student that, without improvement, they are in danger of more serious academic sanctions such as probation.

*Academic probation* will be considered when the P & P is concerned about a student's performance and, without improvement, the student is in danger of being suspended or dismissed. The following is a non-exhaustive list of academic difficulties for which a student would automatically be recommended to receive an academic probation:

- In the Foundations Phase, students will be recommended to be placed on academic probation if they are required to remediate four courses and the total credit hours for the four courses is 10 credit hours or more.
- In the Application, Discovery Phase or Translation phases, students will be recommended to be placed on academic probation if they receive a D or F in a clerkship or course. The student will not progress in the phase until they have completed remediation of the clerkship or course. The period of probation will continue until they have successfully completed the phase.
- Any student who is required to repeat a phase will be recommended to be placed on academic probation while they are repeating the phase.
- In any phase, a student will be recommended to be placed on academic probation if the student has a professionalism issues that the P & P members judge to be significant and concerning.

Academic probation serves three functions:

1. It is official documentation that the student is deficient in areas related to academic performance;
2. It provides a pathway and defines a timeline that the student must follow in order to regain good standing. This may include, but is not limited to, remediation, maintaining appropriate performance standards and/or adhering to professional expectations;
3. It describes the consequences that will result if a student does not meet stated expectations during the period of academic probation.

*Repetition* allows the student to repeat a phase of the curriculum. There are two primary reasons for repetition. 1) Students may voluntarily repeat a phase because of specific events (e.g., health, personal or family issues). This voluntary repetition can only be approved by the EAD or the EAD's designee. In these cases, the



student can repeat the phase without any academic penalties. 2) Repetition of a phase is recommended by the P & P, due to a concern that the student has not mastered the academic skills of that phase.

The following is a non-exhaustive list of actions for which the P & P would require a student to repeat a phase or course in the curriculum:

- Required remediation of five or more courses
- Grade of D or F in the Discovery Phase.

*Suspension* is considered for serious academic issues when the P & P has information regarding the student's academic performance or professional behavior that would support the student benefitting from a period to manage external distractions or other concerns. The period of suspension is recommended by the P & P and will include the conditions for restarting the medical school curriculum. Students who are on academic suspension cannot proceed to the next phase and can only restart their program after the concerns that placed them on suspension have been resolved.

*Dismissal* is considered for either serious breaches in professional conduct or academic concerns including failure of a course and/or clerkship.

The following is a non-exhaustive list of actions that would automatically lead to dismissal:

- *During required repetition of a phase:*
  - Any student in the Foundations Phase who is required to remediate four courses and the total credit hours for the four courses is 10 credit hours or more.
  - In the Application, Transition or Discovery phases, students who receive a D or an F in any course or course.
- Two F's, two D's or a D and an F in the initial grades for clerkships in the Application Phase or the same criteria for courses or clerkships in the Translation Phase.
- The P & P would recommend dismissal for a professionalism violation that the P & P members consider gross negligence which could include negligence that, in the mind of the committee, could have led to the death or serious injury of a patient, or behavior in the clinic setting that is grossly inappropriate by the standards of the profession.

### **Student Right to Appeal P & P Decisions**

Students may appeal any academic sanction. If a student wishes to appeal an academic sanction, this request should be presented in writing to the EAD within 14 calendar days of receiving the academic sanction from the P & P. The appeal may be based on the following grounds:

1. To consider new information, sufficient to alter the decision, or other relevant facts that the person appealing the decision feels the P & P may not have

known, but should have taken into account, in considering their academic sanction.

2. To allege a procedural error within the process that led to the P & P decision that may have substantially impacted the fairness of the decision.

For appeals of academic sanctions not involving dismissal, the EAD will make the final decision on the appeal and will notify the student of that decision. For appeals from P & P findings that include dismissal, the EAD will convene an ad-hoc review panel of faculty members to consider the appeal. The review panel, at its discretion, can meet with the student, EAD, faculty or chair of the P & P to get clarification of any issues. The review panel reviews the documentation from the P & P and sends its recommendation to the EAD whether or not to uphold the decision of the P & P. The EAD will ultimately make the final decision on the appeal and will notify the student of that decision. All appeal decisions are final.

It should be noted that all appeals should be conducted in a professional manner by the student involved; that is, demonstrating respectful disagreement with the perspective and judgment used by faculty members. Failure to exhibit appropriate professional attitudes may immediately terminate the appeal process and lead to an unprofessional conduct report.

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### **Length of Time to Complete Degree**

The standard MD program at EUSOM takes four years to complete; however, students may apply to postpone graduation for a year if they:

1. Want to obtain another degree (e.g., MPH)
2. Want to spend a year doing a scholarly project (or extended Discovery)
3. Want to take an additional year of formal coursework
4. Students who need time off for extenuating medical/personal issues are advised to take a Leave of Absence (LOA) from medical school (Section 9). Students may be eligible to be enrolled at EUSOM for additional periods for purposes of remediation or completion of degree requirements.
5. Students who plan to obtain the MD degree with no additional degrees or certificates must complete all academic requirements of the MD degree within no more than six academic years from the date of matriculation. Approval for a well-planned fifth year is required. The academic records of students who are approaching the deadline of "Time to Degree" for the MD degree will be reviewed by the Registrar and the Progress and Promotions Committee, with enough notice to enable the student to complete the requirement by the end of "Time to Degree."

# **HONORS**

## **Alpha Omega Alpha**

Founded in 1902, Alpha Omega Alpha Honor Medical Society is a professional organization that recognizes and advocates for excellence in scholarship and the highest ideals in the profession of medicine. Students are elected based on their embodiment of the AOA mission:

Alpha Omega Alpha – dedicated to the belief in the profession of medicine we will improve care for all patients by:

- recognizing high educational achievement
- honoring gifted teaching
- encouraging the development of leaders in academia and the community
- supporting the ideals of humanism and
- promoting service to others.

The National AΩA Constitution stipulates that up to 20% of a medical school graduation class may be inducted, and up to one-half of the total may be nominated during the junior year. New members are elected by the student members of Alpha Omega Alpha. Elections occur during the spring of junior year and the fall of senior year.

The AOA provides chapters the flexibility to value the diversity of qualities that contribute to high quality patient care, leadership, service, and scholarship. Membership to AOA at Emory School of Medicine takes into consideration the following:

- Students who are in the upper half (50%) of their class in grade point average and/or clinical performance are eligible for nomination.
- Additional criteria include leadership capabilities, ethical standards, fairness in dealing with colleagues, demonstrated professionalism, scholarship and service to the school and community at large.

## **Gold Humanism Honor Society (GHHS)**

GHHS is a national honor society that honors senior medical students, residents, role-model physician teachers and other exemplars recognized for demonstrated excellence in clinical care, leadership, compassion and dedication to service. GHHS was created by the Arnold P. Gold Foundation for Humanism in Medicine with the goal to sustain the humanistic passion that motivates physicians throughout their practice. GHHS is comprised of over 25,000 healthcare professionals in training and in practice who have been recognized for practicing patient-centered care. Peer nominations are reviewed by the Executive Committee of the Emory GHHS Chapter. Up to 15% of a medical school class can be inducted.

## **Graduating with Academic Honors**

Academic honors are determined by a School of Medicine faculty committee. The designation of students graduating cum laude, magna cum laude, and summa cum laude is based on a combination of grade point average and other academic accomplishments, including Discovery and other academic pursuits, inclusive of work done as part of dual degree work or external fellowships.

## ***REQUIRED SUPPLIES***

### **Laptops**

Laptops are required of all Emory University School of Medicine students. Laptops must meet technical specifications and have the required software programs installed. The School of Medicine Information Technology Services (SOMITS) is available to assist students with technical and software issues for their laptops that meet the specifications.

All newly enrolled School of Medicine students are encouraged to visit the School of Medicine's IT office before orientation to obtain help configuring laptops and mobile devices for Emory's wireless network (Emory Unplugged) and Exchange Email System.

Please verify your laptop meets all Minimum Requirements by using the requirements guide provided by IT.

## **Other Equipment**

### ***ID Badges***

Upon matriculation, all first-year medical students will be given a set of Emory University ID badges. Badges must be worn at all time when in the hospitals and clinics.

During the clinical years, additional hospital ID badges will be provided to students. Hospital ID badges should be worn whenever in the hospital for clerkships or other training.

### ***White Coats***

Students are required to wear white coats for all clinical clerkships and outpatient clinics. Medical student white coats must have the EUSOM patch sewn on the upper left sleeve.

The Office of Admissions will provide all first-year medical students with a white coat. Additional white coats can be purchased by students at the University bookstore. Patches are available in the Office of Admissions and in Student Affairs.

Lab coats will be provided for the Anatomy lab.

**Required Tools**

- Stethoscope (with separate bell and diaphragm end pieces)
- Otoscope-Ophthalmoscope (with ear speculae of varying sizes +/- insufflator bulb)
- Reflex Hammer
- Sphygmomanometer (with adult and pediatric blood pressure cuffs)
- Tuning forks (128 Hz, 512 Hz)
- Pen light

**Other items you will need:**

- Tongue depressors
- Cotton swabs
- Small flexible metric ruler or tape measure
- Safety pins
- Rosenbaum hand-held Visual Acuity chart
- Small notebook and writing instruments
- Nitrile or latex rubber gloves (for Anatomy lab)

**Helpful to have – not required:**

- Medical bag

**Books**

The Emory University Bookstore, located on Oxford Road on the Emory Campus, offers books and supplies at reasonable prices to students, faculty, and staff.

**TUITION AND FEES**

The Board of Trustees sets the tuition and fee rates for the upcoming academic year every February. Below are the MD program tuition and fees rates for 2021-2022:

Tuition per semester	\$26,000
Athletic Fees per Semester	\$150
Activity Fees per Semester	\$98
Transcript Fee (Entering students only) one-time fee	\$70
Health and Wellness Fee per Semester	\$94
Clinical Administrative Fee per Semester	\$75
Student Immunization and Disability Fee per Semester	\$125
Technology Fee per Semester	\$50

**REFUND POLICY**

Students who withdraw from the curriculum for any reason may qualify for a tuition refund on a semester basis. Tuition refunds will be calculated as follows:

<b>Withdrawal during</b>	<b>Charge</b>	<b>Credit</b>
First 5 class days (through drop/add)	0%	100%
Second 5 class days	20%	80%
Third 5 class days	40%	60%
Fourth 5 class days	60%	40%
Fifth 5 class days	80%	20%

*There will be no refunds after the fifth week of any semester.*

### **Financial Aid Resources/Helpful Links**

**Emory University Office of Financial Aid:** Detailed instructions and information regarding the financial aid application process: [www.studentaid.emory.edu](http://www.studentaid.emory.edu)

**Emory University Student Financial Services (Student Accounts Office):**  
Sends bills, accepts payment for tuition and fees, and processes refunds:  
[www.studentfinancials.emory.edu](http://www.studentfinancials.emory.edu)

**Free Application for Federal Student Aid (FAFSA):** [www.fafsa.ed.gov](http://www.fafsa.ed.gov)

**CSS PROFILE:** [www.collegeboard.org](http://www.collegeboard.org)

### **Are there programs that can reduce my indebtedness?**

Yes, there are a number of employment arrangements in which students can reduce their indebtedness after they complete their degree. Some of these include the National Institutes of Health, the U.S. military and state health agencies. Also, some healthcare facilities will offer loan repayment incentives to potential employees. These arrangements often require the employee to commit to employment for a specific number of years. Also, students who work for a non-profit healthcare facility may qualify to have the balance of their loans forgiven after 10 years of repayment through the [Public Service Loan Forgiveness Program](#).

# **ACADEMIC CALENDAR**

## **Class of 2025**

Fall Semester Begins	July 12, 2021
Orientation	July 19-22, 2021
Week on the Wards	July 26-30, 2021
Healthy Human Begins	August 2, 2021
Labor Day (no class)	September 6, 2021
Human Disease Begins	November 15, 2021
Thanksgiving Break	November 20-28, 2021
Winter Break	December 18, 2021-January 3, 2022
Spring Semester Begins	January 4, 2022
Martin Luther King, Jr. Day (no class)	January 17, 2022
Spring Break	April 9-17, 2022
Memorial Day (no class)	May 30, 2022
Summer Break	June 18-July 10, 2022

## **Class of 2024**

Fall Semester Begins	July 12, 2021
M2 Class Returns	July 12, 2021
Labor Day (no class)	September 6, 2021
Fall Break	October 9-12, 2021
Thanksgiving Break	November 20-28, 2021
Winter Break	December 18, 2021-January 3, 2022
Spring Semester Begins	January 4, 2022
Self Study – Step 1	January 4-31, 2022
Deadline to take Step 1	February 7, 2022
Break	February 8-20, 2022
Integration 1	February 21-24, 2022
Orientation to the Clinical Years	February 28-March 4, 2022
Clerkships Begin	March 7, 2022
Break	May 28-June 5, 2022
Juneteenth	June 20, 2022
Independence Day	July 4, 2022

**Class of 2023**

Fall Semester Begins	July 12, 2021
Independence Day (no class)	July 4-5, 2021
Break	July 10-18, 2021
Integration 2	August 30-September 3, 2021
Labor Day (no class)	September 6, 2021
Thanksgiving Break	November 25-28, 2021
Integration 3	December 20-23, 2021
Winter Break	December 24, 2021-Jan. 3, 2022
Spring Semester Begins	January 4, 2022
MLK Day (no class)	January 17, 2022
Last Clerkship Ends	March 4, 2022
Discovery/Translation Begins	March 7, 2022
Break	May 28-June 5, 2022
Juneteenth	May 20, 2022
Independence Day (no class)	July 4, 2022

**Class of 2022**

Fall Semester Begins	July 12, 2021
Labor Day (no class)	September 6, 2021
Deadline to take Step 2 CK	October 31, 2021
Thanksgiving Break	November 20-28, 2021
Winter Break	Dec 24, 2021 - Jan 3, 2022
Spring Semester Starts	January 4, 2022
MLK Day (no class)	January 17, 2022
Match Day	March 18, 2022
Break	March 26-April 3, 2022
Research Day	April 21, 2022
Capstone	April 4-29, 2022
Discovery/Translation Ends	April 28, 2022
Diploma Ceremony	May 6, 2022 (tentative)
Degree Conferral	May 9, 2022



# ***COURSES***

## **REQUIRED COURSES**

### **MD 505 Prologue I (Health Human), 2 credits**

Foundation Phase, Required, S/U

Module Directors: Mary Jo Lechowicz, MD

An introduction to the large themes of medicine – what it means to be a patient, what it means to be a physician, the definitions of health and disease, and balance and homeostasis.

### **MD 508 Human Development, 1 credit**

Foundation Phase, Required, S/U

Module Directors: Terri McFadden, MD; Rickey Gillespie, MD

Illustration of the significance of the biopsychosocial model in medicine; identification of the major biological and psychosocial milestones of healthy individuals at infancy, childhood, adolescence and adulthood; and the differentiation of the major causes of morbidity and mortality at different age groups.

### **MD 510 Embryos, Tissues, and Cells, 3 credits**

Foundation Phase, Required, S/U

Module Directors: Winfield Sale, PhD; Victor Faundez, MD, PhD

A description of the fundamentals of development including mechanisms of differentiation and morphogenesis, the embryonic origin of tissues and mechanisms of birth defects; the fundamental features of the basic tissues; the basic design of the cell, and the control of cell growth and relationship of cell growth and death to cancer.

### **MD 515 Neural Function, 2 credits**

Foundation Phase, Required, S/U

Module Director: Douglas Falls, MD

A description of the basic cellular biology of neurons and glia and the biophysics of neuronal electrical signaling; the overall process of chemical synaptic transmission; the autonomic nervous system; the somatosensory and special sensory systems; voluntary movement; the interaction of sensory and motor modalities within association areas of the cortex and of the contributions of the vestibular organ, the cerebellum, and the basal ganglia in modulating body movement and the neuroanatomy and neural function of each clinical function tested in the neurological examination.

### **MD 520 Integrated Healthy Physiology, 2 credits**

Foundation Phase, Required, S/U

Module Directors: Inyeong Choi, PhD

Explanation of the principles of osmosis and the balance of fluids between different compartments of the body; the principles of thermodynamics in relation to free energy; the oxidation of nutrients to produce useful energy; the electrical and mechanical properties of the heart; the dependency of blood pressure on pressure and volume and how these parameters determine blood flow in the arteries and

veins; essential functions of the kidney; regulation of gas exchange in the lungs and peripheral tissues; the regulation of body temperature; the response of the major organ systems to the challenge of exercise.

**MD 525 Nutrition and Metabolism, 2 credits**

Foundation Phase, Required, S/U

Module Directors: David Pallas, PhD; Thomas Ziegler, MD

A description of the major pathways of metabolism of carbohydrates, proteins, nucleotides, minerals, and lipids; the integration of various metabolic pathways through hormonal regulation; the cell biology and histology of the human digestive tract; the physiology of digestion and absorption of nutrients; the role of gut bacteria in health and disease; the role of macro- and micronutrients in human nutrition and identify the components of a healthy diet and key concepts in nutritional assessment of patients, causes and consequences of micronutrient and macronutrient depletion, and nutritional support strategies.

**MD 530 Endocrine Control, 1 credit**

Foundation Phase, Required, S/U

Module Director: Eric Felner, MD

A description of the regulatory functions of the endocrine system including pituitary, thyroid and parathyroids, adrenocortical and reproductive hormones, the physiological effects of these systems and the physiology and endocrinology of normal pregnancy.

**MD 535 Genetics and Evolution, 2 credits**

Foundation Phase, Required, S/U

Module Director: Kathryn Garber, PhD, Rossana Sanchez Russo, MD

Explanation of the inference of disease risk based on pedigree and family history; the application of genetic/genomic variation to explain variation in normal phenotype, disease phenotypes, and treatment options; the application of cytogenetics and molecular genetics to describe the basic principles, uses and limitations of genetic testing technologies; appropriate indications for specific genetic testing and the limitations, implications of test results, and ethical concerns associated with genetic testing; the basic concepts of population genetics; the indications for genetic referral, and effective communication with patients and professionals.

**MD 540 Aging and Dying, 1 credit**

Foundation Phase, Required, S/U

Module Director: Sivan Ben-Moshe, MD

Key concepts of geriatric medicine; basic science of aging; aging physiology; the built environment and aging; gait and function in the elderly; illness trajectory and palliation; death and dying.

**MD 545 Prologue II (Human Disease), 4 credits**

Foundation Phase, Required, S/U

Module Director: Jennifer Spicer, MD

A description of beneficial and detrimental interactions between microbes and the human host; the defense mechanisms of the human body operate and how their coordinated to prevent infection; the protective and injurious effects of

inflammatory responses; disturbances in blood flow and the disruption of hemostasis and resulting vascular injury; the factors that determine if a compound can be an effective drug and how it is prescribed and the perturbation of normal cellular function resulting in neoplasia.

**MD 550 Skin, Muscle, Bones and Joints, 4 credits**

Foundation Phase, Required, S/U

Module Directors: Jennifer Brandt, MD; Jamie Mackelfresh, MD

A description of the infections, autoimmune/inflammatory conditions, malignancies/tumors, effects of wounds/trauma, effects of toxic exposures and metabolic derangements that can affect skin, muscle, bones and joints, and for these conditions, the factors that predispose to these conditions and the treatment of such conditions, as well as a description of the genetic diseases that occur in skin, muscle, bone and joints and the treatments for such conditions, if any are available.

**MD 555 Pulmonary Module, 5 credits**

Foundation Phase, Required, S/U

Module Director: Ashish Mehta, MD

A description of the common infections and their manifestations in the lung; normal respiratory epithelial function and its participation in host defense; factors that regulate the transfer of gases between the atmosphere and tissues; common pathological processes that disturb airflow and gas exchange and how these derangements are measured; factors that cause airflow limitation and therapeutic approaches to reverse these abnormalities; the normal anatomy of the lung and surrounding structures and how derangements in the airways, lung parenchyma, and pulmonary circulation lead to alterations in pulmonary function; regulation of blood flow through the lung in health and disease; common disorders involving the lung interstitium; the development of thoracic neoplasms, characteristic manifestations of lung cancer, and common therapeutic approaches used in its treatment.

**MD 560 Cardiovascular, 5 credits**

Foundation Phase, Required, S/U

Module Directors: Dimitri Cassimatis, MD; Lakshmi Tummala, MD

Review normal cardiovascular physiology; describe cardiovascular pathophysiology; describe common and uncommon cardiovascular diseases in terms of their pathophysiology, symptoms, and physical exam findings and describe the key diagnostic and treatment options for these common and uncommon cardiovascular diseases

**MD 565 Gastroenterology, 4 credits**

Foundation Phase, Required, S/U

Module Director: Tanvi Dhere, MD

A description of the basic function of the GI tract and liver; the risk factors, causes, and/or pathophysiological mechanisms underlying common GI symptoms; clinical presentations and complications of major GI and liver diseases; pathological

features of major GI and liver diseases ; the indications for endoscopic procedures; and the definition and correlation pathological features with imaging and laboratory studies.

**MD 570 Renal and Genitourinary, 4 credits**

Foundation Phase, Required, S/U

Module Directors: Ali Kashkouli, MD; James Bailey, MD

A description of the basic anatomy and physiology of the genitourinary system; the pathophysiological mechanisms underlying clinical symptoms and signs of major disease; the anatomical pathological disease correlates with respect to the genitourinary system, and the complexity of the kidney, the diversity of the pathology and the adaptive and maladaptive responses that occur under normal conditions and diseased states.

**MD 580 Evidence Based Medicine (EBM), 1 credit**

Foundation Phase, Required, S/U

Course Director: David Schulman, MD

Clinicians are entrusted to help patients make informed decisions regarding their care; in order to do this, they must be able to identify and critically appraise medical literature. Almost every clinical decision should be guided by available medical literature, which answers the question at hand. The goal of this course is to begin mastering the skills that will allow students to *ask* appropriate clinical questions, *access* the medical literature, *assess* the validity and results of individual studies as well as summary literature, and determine the *applicability* of the available medical literature to a particular patient problem.

**MD 600 Endocrine/Reproductive Health, 5 credits**

Foundation Phase, Required, S/U

Module Directors: Eric Felner, MD; Mary Dolan, MD

A description of the pathophysiology of endocrine conditions; endocrinologic diseases from the molecular to the clinical level; common endocrine diseases from neonate to geriatric patient; surgical aspects of endocrine diseases; imaging techniques used to evaluate endocrine diseases; laboratory & clinical research methods in the endocrine system; endocrine conditions affecting females and reproduction; the reproductive health issues women may experience throughout their lifetime; the menstrual cycle, abnormalities and associated pathology; options for fertility management, ethical principles of choices regarding reproductive health; female sexual dysfunction; medications commonly used in reproductive pharmacology, side effects, and implications for use during pregnancy and lactation; sexually transmitted infections; pregnancy; lactation, benign vs malignant gynecologic and breast pathology and systemic disorders and their effects on reproductive function.

**MD 605 Hematology, 3 credits**

Foundation Phase, Required, S/U

Module Director: Morgan McLemore, MD

A description of benign and malignant hematology including normal marrow function, anemia, infections in the immunocompromised host; lymphoid and

myeloid malignancies, premalignant conditions, emergent presentations , end of life care issues; coagulation including primary and secondary hemostasis and disorders of hemostasis.

**MD 610 Neuroscience, 4 credits**

Foundation Phase, Required, S/U

Module Directors: Daniel Winkel, MD

A description of the structure and function of the brain, brainstem, spinal cord and meninges; including gross anatomy, blood supply, and spinal reflexes; the characteristic clinical features, natural history and prognosis and the etiology and pathogenesis of key neurological diseases; the mechanisms of action, use, and adverse effects of drugs for the treatment of nervous system disorders.

**MD 615 Behavioral Science, 5 credits**

Foundation Phase, Required, S/U

Module Directors: Rickey Gillespie, MD, PhD

Behavioral Science concludes the examination of clinical topics in neurology and ophthalmology. The majority of the course surveys clinical topics in behavioral sciences, psychopharmacology, psychology, and psychiatry. Methods of instruction include lectures, small-group problem-based learning, live patient interviews, experiential exercises, and reflective writing.

**MD 620 Infectious Disease, 2 credits**

Foundation Phase, Required, S/U

Module Director: Wendy Armstrong, MD

Translation of basic microbiology and immunology to human disease, including generating a differential diagnosis and develop an approach to therapy; integration of information from individual organ systems to understand multi-system disease and the implications of health policy and decision-making on a population level, including the influence of economics, politics and culture on a global level.

**MD 625 Elective, 2 credits**

Foundation Phase, Required, S/U

Module Director: Jason Liebrecht, MD

This Foundation Phase elective is an opportunity for students to explore fields outside the standard curriculum. They may choose to participate in activities directed to a specific career goal or they may choose to participate in activities outside the primary field of interest. The electives can take the form of a faculty organized experience in which several students participate or a directed study where an individual student is guided by a single faculty member of their choosing. The minimum requirement for either of these kinds of elective is 15 contact hours with the faculty member.

**MD 639 Essentials of Patient Care (EPC) I, 8 credits**

Foundation and Application Phases, Required, S/U

Course Director: Lisa Bernstein, MD; Martha Ward, MD

This longitudinal course spans the four years of the MD program and is designed to teach students the knowledge, skills, attitudes and behaviors necessary to become competent, ethical and caring physicians. Through interactive discussion, case analysis and role-play in small group sessions, along with experiential learning by

practicing on each other and with patients, both standardized and real, students will attain the clinical and diagnostic skills they will need to take excellent care of patients.

**MD 642 Ethics in Medicine, 1 credit**

Foundation and Application Phases, Required, S/U

Course Director: Kathy Kinlaw, MDiv

Ethics is integral to the everyday practice of medicine. Our integrated ethics curriculum is designed to provide the knowledge and skills to analyze and address ethical issues commonly encountered in clinical practice. Throughout the 4 years, ethics lectures, small group discussions, embedded clinical rotation sessions, case analyses, and creative encounters help students develop critical thinking skills and provide foundational concepts and decision-making frameworks in medical ethics.

**MD 645 Clinical Learning & Social Medicine (CLSM), 6 credits**

Foundation Phase, Required

Course Director: Antonio Graham, MD, Maura George, MD

Community Learning and Social Medicine is a multi-year structured learning experience that combines community engagement with preparation, action, and reflection. Learners work with over 50 community based organizations/partners through the Atlanta area.

**Outpatient Experience (OPEX)**

Foundation Phase, Required

Module Director: Pamela Vohra-Khullar, MD

A regular, consistent exposure to clinical medicine and mentorship in a primary care setting emphasizing continuity of care and evidence-based medicine; learn and practice communication styles which are culturally sensitive and effective with patients, and professional, with colleagues; multiple experiences to learn and improve history taking and physical exam skills; multiple experiences to learn and deliver effective techniques in health promotion; opportunities for reflection on professionalism and process improvement; exposure to the various roles and responsibilities of members of the healthcare team and the office support staff necessary to manage an efficient, effective medical practice, and observation of the impact of culture, socioeconomic status, spirituality, health beliefs and practices, and lifestyle and behavior(s) on the provider/patient relationship and healthcare outcomes.

**MD 701 Application – Pre-Application Clinical Knowledge Skills – 5 credits**

Applications Phase, Required, S/U

Course Director: Megan Henn, MD

This course aims to bridge the gap between Foundations and Applications. Through a combination of didactics, small group sessions, hands on procedure training, and work with standardized patients students will strengthen their knowledge and skills to transition seamlessly into the clinical setting and direct patient care.

**MD 705 Adult Primary Care, 6 credits**

Applications Phase, Required, Letter Grade

Clerkship Directors: Eva Rimler, MD; Emily Herndon, MD

Students are assigned to one adult primary care practice for six weeks. The other six weeks are split between a pediatric primary care office (Ambulatory Care Block/Pediatric Primary Care, credit, 3 hours), and outpatient subspecialties in dermatology, ophthalmology, orthopedics, otolaryngology, palliative care, and urology. Students work up one to four patients in each half-day session focusing on health promotion, disease prevention, and acute and chronic disease management in the ambulatory setting. Additionally, students participate in a Quality Improvement (QI) curriculum which includes developing a QI project for one of their primary care practices, and weekly seminars and workshops related to primary care and subspecialty topics. Students are assessed by direct observation by preceptors, reflection papers, QI project proposals, and written and oral examinations. Examinations include pediatric and subspecialty written exams, an adult primary care oral exam, and the National Board of Medical Examiners (NBME) Adult Primary Care computerized shelf exam.

**MD 710 Internal Medicine, 6 credits**

Applications Phase, Required, Letter Grade

Clerkship Directors: Meredith Lora, MD; Varun Phadke, MD

Students spend eight weeks rotating on the general medicine wards of Grady Memorial Hospital, the Atlanta Veterans Affairs Medical Center, Emory University Hospital Midtown and Emory University Hospital. Each student collects the database, formulates the problem list, draws up the initial plans, and follows each patient in a problem-oriented fashion. To a large extent, the students have primary responsibility for their patients, working under the close supervision of house staff and faculty. Students work as an integral member of the ward team, which consist of an attending faculty member, junior assistant resident, two interns, and two students. Students make ward rounds with the house staff and present patients to the attending faculty. Each student completely works up two to three new patients per week for a total of eighteen patients during the rotation. Student goals are to learn how to collect data, identify and define individual problems, separate multifarious problems into their individual components and clarify their relationships to each other, and organize problems and follow them systematically through to their resolution. Students attend frequent conferences where patients are presented and discussed by members of the teaching staff. Conferences extend throughout the field of internal medicine and its subspecialties. Weekly, throughout the eight weeks, students convene together with the clerkship directors to cover case-based questions and problems to complement their clinical experience. Final examinations include oral, standardized patient exams and the National Board of Medical Examiners (NBME) subject exam.

**MD 715 Neurology, 3 credits**

Applications Phase, Required, Letter Grade

Clerkship Director: Taylor Harrison, MD

This rotation is required of all medical students and is taken during the Application phase of the curriculum. The student receives two two-week assignments to rotate at two of the following: to Grady Hospital, Emory University Hospital - Main

Campus, Emory University Hospital - Midtown, Veterans Affairs Medical Center, The Emory Clinic, Wesley Woods, and Children's Healthcare of Atlanta at Egleston.

**MD 720 Obstetrics/Gynecology, 6 credits**

Applications Phase, Required, Letter Grade

Clerkship Directors: Jennifer Goedken, MD

This six-week clerkship is divided into rotations in labor and delivery, gynecology, and outpatient experience. Students are involved in all aspects of patient care. They are responsible for making rounds and writing notes under the supervision of the house staff, attending assigned clinics, and participating in the activities of the operating and delivery rooms.

**MD 725 Pediatrics, 6 credits**

Applications Phase, Required, Letter Grade

Clerkship Director: Donald Batisky, MD

This six-week clerkship is divided into rotations in labor and delivery, gynecology, and outpatient experience. Students are involved in all aspects of patient care. They are responsible for making rounds and writing notes under the supervision of the house staff, attending assigned clinics, and participating in the activities of the operating and delivery rooms. In addition to this clinical experience, there is a structured didactic curriculum that includes departmental weekly conferences, skills practicum, lectures, debates, and web based instruction. The final grade in the clerkship is based on clinical performance evaluations, a debate presentation, an oral evaluation, a standardized written examination, and the National Board subject exam.

**MD 730 Psychiatry, 6 credits**

Applications Phase, Required, Letter Grade

Clerkship Director: Jeffrey Rakofsky, MD

The emphasis on this clerkship is the clinical application of principles of psychiatry learned in the first two years. Students are assigned clinical clerkships on the inpatient psychiatric wards at Grady Memorial Hospital, the Atlanta Veterans Affairs Medical Center, Wesley Woods Health Center, the DeKalb Crisis Center, and Emory University Hospital. Rotations are offered on the consultation-liaison services at Grady Memorial Hospital, Emory University Hospital, Emory University Hospital Midtown, and the Atlanta Veterans Affairs Medical Center. Assignment to child psychiatry at Children's Healthcare of Atlanta is also possible. Outpatient experience is available at Skyland Trail and is also possible at many of the clinical teaching sites. Clinical responsibilities include obtaining admission history and physical examinations, formulating psychodynamic aspects of the case, psychiatric differential diagnosis, and actively participating in the psychotherapeutic and the psychopharmacologic management of patient treatment. Students attend and participate in rounds and ward teaching conferences as well. An additional component of the clinical duties of this rotation is participation in emergency room call at the Crisis Intervention Service at Grady Memorial Hospital. A weekly clinical case teaching conference is held with an attending physician to demonstrate interview techniques, discuss differential diagnosis and allow for in-depth discussion of psychodynamics of selected patients. A lecture series covers major clinical aspects of the diagnosis and treatment of major psychiatric disorders including the anxiety disorders, depression, dementia, delirium, personality disorders,



psychopharmacology, psychiatric emergencies and schizophrenia. A comprehensive syllabus with selected readings is provided. There is a midterm oral examination and an end of clerkship departmental oral examination in addition to the national miniboard in psychiatry. Clinical evaluations are a part of the final letter grade.

**MD 735 Surgery, 6 credits**

Applications Phase, Required, Letter Grade

Clerkship Director: Barbara Pettitt, MD

Students are assigned to 4 weeks of a general adult or pediatric surgery service and 3 weeks of a surgical subspecialty. Assignments to these rotations are determined by preference sheets sent into the Clerkship Coordinator before the clerkship begins. Students serve as junior members of our surgical teams with graded responsibility for patient care and the opportunity to assist and practice skills in the operating room. Students are responsible for doing the history and physical examination of patients assigned to them and work closely with the faculty and resident staff in determining necessary preoperative, intraoperative, and postoperative care. Students are assigned to small groups that meet weekly with a faculty mentor. During the clerkship, each student takes several nights of call on the Grady Trauma Service. A didactic lecture series is presented two mornings per week, which includes lectures on a variety of surgical topics, as well as lectures by Emory ethicists and radiologists on topics from those disciplines pertinent to surgery. Students also attend several skills labs that cover suturing, knot-tying, and advanced vascular access techniques. Students' grades are based on the clinical evaluations from their attendings and residents, scores on two oral examinations and the National Board of Medical Examiners Surgery Shelf exam given at the end of the rotation, and written patient summaries and patient logs.

**MD 740 Anesthesiology, 1 credit**

Applications Phase, Required, S/U

Clerkship Director: Joanna Schindler, MD

This clerkship is a basic introduction to the principles and techniques involved in the care of the perioperative patient. An anesthesiologist assists the student in discovering the techniques and principles of basic life support including airway management, maintenance of cardiopulmonary stability, and intensive monitoring. The student shall acquire an appreciation of the needs of the acutely ill patient and the role of the anesthesiologist in their care. Students also participate in morning/afternoon conferences and a case-based problem set discussion. Reading assignments are from a provided text. The final grade is based on problem set submission and participation/performance.

**MD 741 Dermatology, 1 credit**

Application Phase, Required, S/U

Clerkship Director: Jamie Mackelfresh, MD

The Dermatology Clerkship is a one week required course that builds on the basic dermatologic principles taught in the Skin Muscle Bone and Joint course taught in the Foundation Phase. Those principles are applied during the actual evaluation and care of patients with skin diseases. Students work alongside faculty assessing patients in the dermatology ambulatory care clinics, primarily at The Emory Clinic & occasionally at Grady Memorial Hospital or the Atlanta VAMC.

**MD 742 Palliative Medicine, 1 credit**

Application Phase, Required, S/U

Course Director: Ashima Lal, MD

Palliative Medicine is one of the newest subspecialties of medicine and is the physical, spiritual, psychological and social aspect of caring for patients and families from diagnosis to death or cure of a life threatening or serious illness. Palliative Medicine is practiced in an interdisciplinary team and is then called Palliative Care. The core skill focus of palliative medicine includes: pain and non-pain symptom management, advance care planning, risk-burden assessments, communication of serious illness, prognostication, spiritual assessment, psychosocial assessment, ethics and care at the end of life (to include hospice eligibility and management). The unit of care is the patient, family, and caregivers. Palliative Care is appropriate at any stage of illness. On this rotation, students will be working directly with the Palliative Care Interdisciplinary Team (IDT) that includes: attending physicians, nurse practitioners, chaplain, social worker, pharmacist, and psychologist (team composition varies by site). Students will participate directly in consultation as well as family meetings with a focus on communication skills training and will be an active member of the interdisciplinary team while on rotation. The interdisciplinary care team will work together to help patient and families across their continuum of illness. All students will participate in inpatient palliative care consultation and some students may have exposure to outpatient palliative care depending on their rotation site.

**MD 743 Ophthalmology, 1 credit**

Application Phase, Required, S/U

Clerkship Director: Emily Graubart, MD

The Ophthalmology Clerkship introduces each student to the field of ophthalmology. The clerkship emphasizes the examination and evaluation of common eye disease, and it is designed to provide exposure to the various subspecialties within the field while increasing the ophthalmic knowledge base of each student. The clerkship involves participation in ambulatory clinical and surgical settings while emphasizing opportunities for self-directed learning based on the ophthalmic diseases encountered in these settings.

**MD 745 Radiology, 2 credits**

Applications Phase, Required, Letter Grade

Clerkship Directors: Keith Herr, MD

This is a 2-credit "virtual" radiology course integrated into the seven free standing clerkships during the Applications phase of the UME curriculum. The radiology presentations have been tailored to emphasize imaging features of diseases and conditions that students will encounter in the hospital wards and in clinic during the rotation the student is on. The virtual clerkship is structured as an introduction to the fundamentals of Radiology, including basics of Chest X-ray interpretation, recognition of 22 life or limb threatening imaging findings and principles of diagnostic testing. Typically included are lectures and small group sessions on genitourinary, gastrointestinal, cardiothoracic, pediatric, musculoskeletal and interventions are also taught using clinical radiology experiences, attendance at Radiology noon conference, assigned readings, and various electronic methods including podcasts. Graded portions of the rotation include small group and

individual presentations, a practical exam and multiple written radiology exams given at the same time that students take their end rotation shelf exams.

**MD 750 Ethics in Medicine II, 1 credit**

Foundation and Application Phases, Required, S/U

Course Director: Kathy Kinlaw, MDiv

Ethics is integral to the everyday practice of medicine. Our integrated ethics curriculum is designed to provide the knowledge and skills to analyze and address ethical issues commonly encountered in clinical practice. Throughout the 4 years, ethics lectures, small group discussions, embedded clinical rotation sessions, case analyses, and creative encounters help students develop critical thinking skills and provide foundational concepts and decision-making frameworks in medical ethics.

**MD 755 Application – Integration I – 1 credit**

Course Directors: David Schulman, MD; Maura George, MD

Required, S/U

**MD 756 Application – Integration II – 1 credit**

Course Directors: David Schulman, MD; Maura George, MD

Required, S/U

**MD 757 Application – Integration III – 1 credit**

Course Directors: David Schulman, MD; Maura George, MD

Required, S/U

**MD 905 Sr. Medicine Sub-Internship, 4 credits**

Translation Phase, Required, Letter Grade

Course Director: Richard Pittman, MD

The Sub-Internship is a required, graded rotation in the Translations Phase of medical school, and may be done in the disciplines of Surgery, Medicine or Pediatrics. During this 4-week rotation completed at Grady Hospital, students will take on a higher level of responsibility and function just like an intern with support from the resident. Students will sharpen data collection skills, deepen clinical reasoning, and practice hospital skills. The ensuing responsibilities students will assume are an invaluable practice and maturing experience that will accelerate their growth toward being an intern.

**MD 906 Sr. Surgery Sub-Internship, 4 credits**

Translation Phase, Required, Letter Grade

Course Director: Jonathan Meisel, MD

The Sub-Internship is a required, graded rotation in the Translations Phase of medical school, and may be done in the disciplines of Surgery, Medicine or Pediatrics. Students may choose to do their Surgery Sub-I in one of almost a dozen surgery services related to general surgery at Emory University Hospital – Main Campus, Emory University Hospital at Midtown, Children’s Hospital of Atlanta – Egleston Campus, VA General Surgery, Emory University Hospital at St. Joseph’s, or Grady Hospital. Students will be exposed to a variety of surgical diseases, and learn the medical care of the surgical patient. Didactic and laboratory experience includes mock nurse calls and an extensive debrief, a laboratory on the fundamentals of laparoscopic surgery and mandatory check-offs on a variety of

technical and cognitive skills related to the care of the surgical patient. Students will be expected to take three 12 hour shifts of night call, and complete a teaching presentation to their team as well as identify a specific technical skill they would like to work on in the operating room that month.

**MD 907 Sr. Pediatric Sub-Internship, 4 credits**

Translation Phase, Required, Letter Grade

Course Director: Donald Batisky, MD

The Sub-Internship is a required, graded rotation in the Translations Phase of medical school, and may be done in the disciplines of Surgery, Medicine or Pediatrics. The fourth year Pediatric Sub-Internship presents first opportunities to be the primary direct caregiver to patients. This is a four week time frame on the general Pediatric wards at Egleston and occasionally Hughes Spalding. Students take either 3 or 5 nights of night-float during the rotation. Through direct patient care, students will fine-tune their history gathering and physical exam skills, further develop their patient/family-clinician interaction style and learn much about pediatric conditions. Students will have opportunities to perform admission histories and physicals and to write admissions orders. In addition they will be given new patients admitted by the night float team to take as their own. Students will follow their patients daily until discharge. Presentation skills are developed and a final case presentation is part of the course grade.

**MD 910 Critical Care Medicine, 4 credits**

Translation Phase, Required, Letter Grade

Course Director: Lisa Daniels, MD; Katherine Nugent, MD

Critical care is a 4-week required clerkship in the Application Phase of medical school, proving students with exposure to a wide range of critically ill patients. Students spend 4 weeks in an intensive care unit as a member of the critical care team at either Emory University Hospital (EUH), Egleston, Emory University Hospital Midtown (EUHM), the Atlanta Veterans Administration Medical Center (VAMC), Grady Memorial Hospital (GMH) or Emory St. Joseph's Hospital (ESJ). Students also participate in additional curriculum including Society of Critical Care Medicine's standardized Fundamental Critical Care Support (FCCS) course, simulation exercises in the Emory Center for Experiential Learning (ExCEL), and experiences addressing ethical issues encountered in intensive care practice.

**MD 915 Emergency Medicine, 4 credits**

Translation Phase, Required, Letter Grade

Course Directors: Megan Henn, MD; Steven Lindsey, MD

Emergency Medicine is a 4-week, required rotation in the Translation Phase. Students will have an opportunity to participate in the care of patients presenting to high volume, inner city emergency department with a wide variety of medical and traumatic illnesses. Each student will function as a sub-intern, working closely with Emergency Medicine residents and faculty. Each student will have the opportunity to participate as a third rider with Grady EMS.

**MD 940 Capstone, 4 credits**

Translation Phase, Required, S/U

Course Director: Jason Liebzeit, MD; Bijal Shah, MD

Capstone is the final course of medical school, required for all graduating students. Utilizing a mix of lectures, case-based small groups, standardized-patient interactions and skills labs, Capstone's goal is to prepare students for the transition to their new role as physician. A focus is placed on communication, high-yield patient care issues, and personal well-being (psychological, physical, emotional and financial). Capstone takes place predominantly in the School of Medicine, with occasional sessions at an Emory-affiliated clinical site.

**ELECTIVES****MD 920 AN01 Cardiothoracic Anesthesia & Critical Care, 4 credits**

Translation Phase, Elective, S/U

Course Director: Ratna Vadlamudi, MD

For the OR period, the student will be exposed to the pre-operative evaluation and intra-operative care of patients undergoing cardiothoracic surgical procedures. This will take place at both Emory University Hospital and Emory Crawford Long Hospital, with students spending one week at each site. Students will be paired with a senior resident or fellow each day. Duties will include OR room preparation, patient evaluation, and assistance with intraoperative monitoring. It is expected that the student will become familiar with the interpretation of invasive monitors, the anesthetic concerns of cardiopulmonary bypass, and gain exposure to intraoperative echocardiography (observation only). Hours are generally from 6am to 3pm.

**MD 920 AN02 Anesthesia for Surgical Subspecialties, 4 credits**

Translation Phase, Elective, S/U

Course Director: Joanna Schindler, MD

To introduce the student to the principles and techniques involved in the care of the peri-operative patient. An anesthesiologist and resident will assist the student in discovering the techniques and principles of basic life support including airway management, maintenance of cardiopulmonary stability, and intensive monitoring. The student shall acquire an appreciation of the needs of the acutely ill patient and the role of the anesthesiologist in their care. The student will also observe and participate in the management of acute and chronic pain patients while rotating on the Pain Service under the direction of both anesthesiology attendings and residents. The student will also have the opportunity to be involved in the anesthetic management of pediatric patients while rotating on the Pediatric Anesthesiology Service and obstetric patients while rotating on the Obstetric Anesthesiology Service.

**MD 920 AN03 Pediatric Anesthesiology, 4 credits**

Translation Phase, Elective, S/U

Course Director: Shivani Mulkamala, MD

This elective will introduce senior medical students to the principles and techniques involved in the care of the perioperative pediatric patient. Students will be involved in the preoperative assessment of pediatric patients, learn about special considerations during induction of pediatric patients, intraoperative monitoring, as

well as the postoperative period, including pain management in the post anesthesia care unit. Students will be in various locations where pediatric patients require anesthesia, including the operating room, radiation oncology, MRI, and interventional radiology units. Students will come away with the unique considerations for pediatric patients undergoing surgery and will be exposed to various congenital abnormalities and disease states in pediatric patients.

**MD 920 AWAY Elective-Away, 4 credits**

Translation Phase, Elective, S/U

Students may choose to do an elective outside of Emory. The majority of the away elective experiences can be applied through the American Association of Medical Colleges Visiting Student Application Service (VSAS). Students may begin to apply for away electives in March following their Application Phase.

**MD 920 CO01 Cardiology (Harvey), 4 credits**

Translation Phase, Elective, S/U

Course Director: Joel M. Felner, MD

In addition to exposure to Cardiology patients at the Grady clinic, the Cardiology Patient Simulator (Harvey), and UMedic – a multimedia computer system – will be used extensively. Harvey can simulate the most common cardiovascular diseases, including hypertension, coronary artery disease, HOCM, mitral valve prolapse, and valvular and congenital heart disease. The UMedic multi-media computer system is case based and presents 15 different diseases. Didactic lectures, group discussions, bedside rounds, and 12 EKG lectures and unknowns will be presented.

**MD 920 CO02 Cardiology (VA), 4 credits**

Translation Phase, Elective, S/U

Course Director: Andro Kacharava, MD

The student will participate in patient care activities in the areas of the outpatient clinic, CCU, consultations, echocardiography, nuclear cardiac studies including stress testing and cardiac catheterization laboratory. In all instances, the students' activities will be directed in accomplishing the goals of this elective. The student will attend and participate in weekly conferences (patient presentations and/or literature reviews). The specific format will be outlined at the beginning of the elective for each student based on her/his preference and needs.

**MD 920 CO05 Preventative Cardiology, 4 credits**

Translation Phase, Elective, S/U

Course Director: Ijeoma Isiadinso, MD

In this elective, the student will be working in an outpatient office practice setting. Our practice is billed as Preventative and General Cardiology. The patient we see fall in the spectrum of those who have no cardiac problems and are interested in lowering their risk of future problems to those with established cardiac problems of a variety of types. We have four attending cardiologists in our group and there is an opportunity to work with all of us. We offer in-office ECG, echocardiography, ECG treadmill stress testing, and stress echocardiography. Our physician staff also serves as the Director of the cardiac rehabilitation program at Emory. There is a large gym on the top floor of our building where we hold our cardiac rehab sessions. We are fortunate to have a great staff of exercise physiologists with whom you will have the opportunity to work in hands-on cardiac rehab experience.

**MD 920 CO08 Coronary Care Unit (Emory), 4 credits**

Translation Phase, Elective, S/U

Course Director: Lakshmi Sridharan, MD

The Cardiovascular Care Units (CCU) consists of the ICU units on 3G and 4G. The 14-bed intensive care unit is designed for the care of patients with acute cardiac disorders requiring intensive monitoring and nursing support. The CCU team is a multidisciplinary team that includes a cardiovascular disease attending physician, a cardiovascular disease fellow, internal medicine house officers, and allied health professionals. The attending and fellow will lead morning multidisciplinary patient management rounds at least once daily with the housestaff and mid-level providers. Formal teaching at the bedside occurs daily during these rounds.

**MD 920 CO09 Women's Heart Clinic, 4 credits**

Translation Phase, Elective, S/U

Course Director: Susmita Parashar, MD

Emory Women's Heart Program provides cardiac risk assessment, diagnosis and heart disease care through a women-focused approach to cardiovascular care. Our goal is to help women prevent heart disease and improve cardiovascular outcomes through the highest quality patient and family-centered care, research and education. Emory Women's Heart Clinic consists of outpatient cardiology clinics. Our multi-disciplinary team includes female and male cardiologists, female nurse practitioners, nurses, nutritionist, exercise physiologists and a full-range of specialists. We provide counseling on weight loss, exercise programs, diet, and other lifestyle changes to help treat and reduce risk of heart disease in women. We help women understand how stress, obesity, depression, and menopause may impact their heart. The attending and/or fellow and resident lead multidisciplinary patient care in an outpatient cardiology setting.

**MD 920 CO10 Hurst Cardiology, 4 credits**

Translation Phase, Elective, S/U

Course Director: Byron Robinson Williams III, MD

This is a general cardiology elective centered on the Hurst inpatient cardiology service at Emory University Hospital. The medical student will be part of the team, which is comprised of an attending cardiologist, a cardiology fellow and three internal medicine interns. On the Hurst service, the medical student will be exposed to a wide variety of cardiac disease, including acute coronary syndromes including ST elevation MI's, congestive heart failure, arrhythmias, valvular disease, hypertrophic cardiomyopathy and many others. In addition to helping care for inpatients, the medical student will also have direct exposure to multiple aspects of cardiology including cardiac catheterization and coronary interventions, echocardiography, stress testing, cardiac MRI, EKG's, and cardiac electrophysiology procedures (cardioversions, ICD and pacemaker implants). The medical student will also attend a half-day of general cardiology clinic with either Dr. Williams or Dr. Gerald McGorisk. There are also multiple teaching conferences for the medical student including cardiology morning report with Dr. Doug Morris, cardiovascular grand rounds on Monday and Friday mornings, internal medicine noon conference, including internal medicine grand rounds on Tuesdays. There will be a weekly student-centered teaching session with Dr. Williams and/or McGorisk. The teaching will center on EKG's and the cardiac physical exam.

**MD 920 CO11 Outpatient Clinical Cardiology, 4 credits**

Translation Phase, Elective, S/U

Course Director: Gina Lundberg, MD

This elective will allow the senior student to participate in an outpatient setting in a busy cardiology practice. The student will be involved in the evaluation of new patients and consultations, including history and physical examinations and discussion of acceptable methods of diagnosis and treatment. Cardiovascular assessment, diagnosis and treatment are emphasized. Hyperlipidemia management and genomics are a special focus. The student will be involved with exercise stress treadmill testing, Echoes, EKGs, Holter monitoring and event recordings, which are reviewed daily; as well as weekly Nuclear Stress Thallium testing. The student will also have exposure to MDCT for the early diagnosis of CAD and CTA.

**MD 920 CO13 Advanced Heart Failure, 4 credits**

Translation Phase, Elective, S/U

Course Director: Divya Gupta, MD

This elective will provide insight for the M4 on the diagnosis and management of heart failure, particularly end stage heart failure, patients who have had heart transplants, and patients who have left ventricular assist devices. Students will be caring for patients in the hospital setting to gain firsthand knowledge about strategy for care and disease progression.

**MD 920 CO14 General Cardiology – St. Joseph, 4 credits**

Translation Phase, Elective, S/U

Course Director: Alex Sommerfeld, MD; Michael Balik, MD

The General Cardiology Elective should serve to help foster increased exposure to cardiovascular medicine in both the ambulatory and inpatient settings. On the ambulatory weeks, students will rotate with clinical faculty assisting in office based encounters. Opportunities to observe cardiac catheterization, exercise stress testing, Transesophageal echo and cardioversion will be available. The rotation will also include 1 to 2 weeks of inpatient exposure where students are able to round with the attendings, see new patient and follow up consultations. The rotation is designed to be a 4 week elective though 2 weeks blocks can also be considered.

**MD 920 CR01 Radiation Oncology, 4 credits**

Translation Phase, Elective, S/U

Course Director: Jolinta Lin, MD

As an introduction to clinical radiation oncology, students will participate in the daily clinical practice of radiation oncology with resident and staff physicians. Learning by tutorial and hands-on experience, students will spend time at The Emory Clinic, Emory University Hospital Midtown, Grady Hospital, and Atlanta VA Medical Center.

**MD 920 D01 Dermatology, 4 credits**

Translation Phase, Elective, S/U

Course Directors: Salma de la Feld, MD

The dermatology sub-internship elective is available for both students interested in going into dermatology as well as those who wish to learn about cutaneous disorders but who are not planning on making dermatology their career. For those students who want to become dermatologists, they may either take (1) month sub-



internship consisting only of clinics, or to combine their clinical month with one or two other months of research. Students are encouraged to contact faculty directly to arrange research projects (see MD 920 D02 Dermatology Clinical Research elective.)

**MD 920 D02 Dermatology Clinical Research, 4 credits**

Translation Phase, Elective, S/U

Course Director: Howa Yeung, MD, MSc; Wendy Fox, MD

The dermatology clinical research elective is geared to students who are interested in going into dermatology as a career *and have already started a research project with Emory Dermatology*. Students taking both the clinical and research dermatology electives will have a few clinics per week during their research elective and a heavier clinic schedule during their clinical elective. In this way, students can utilize more than one month to complete their research project and still have exposure to clinics throughout their rotations.

**MD 920 D05 Telederm, 4 credits**

Translation Phase, Elective, S/U

Course Director: Suephy Chen, MD

The COVID-tailored Dermatology Clinical Research Elective will be completely virtual. Many of the endeavors will involve the inaugural video teledermatology efforts at Grady, Emory, and the VA. Other requirements will involve working with a resident and attending to understand a skin disease process in the context of a case report, systematic review of the literature, or assisting in a large dataset review

**MD 920 DD01 Digestive Diseases (Emory), 4 credits**

Translation Phase, Elective, S/U

Course Director: Saurabh Chawla, MD

The student will participate in the clinical services provided by the digestive disease team at Emory University Hospital. The team consists of an attending physician, one to two GI fellows, and one to two medical residents. The team will cover both GI inpatient service and consultation service to the hospital. The student will be responsible for responding to a consultation request or inpatient admission by performing a history and physical on the patient, and evaluating the initial laboratory and radiological test results. The student will then present the patient to the team on round and help formulate a list of differential diagnosis and plan diagnostic and therapeutic approaches. Following the initial consultation or admission, the student is responsible for tracking the progress including writing a progress on the patient on a daily basis until the patient is discharged. The student will be able to observe endoscopic procedures performed on the patient for clinical correlation. The student will attend several weekly conferences including GI Grand Rounds, didactic lecture series, and radiology and pathology rounds. The student will read basic GI text book and some current GI literature pertinent to the patient he or she is following. On occasions, the student may be asked to provide informal presentations on literature findings related to the case.

**MD 920 DD02 Digestive Diseases (Grady), 4 credits**

Translation Phase, Elective, S/U

Course Director: Emad Qayed, MD

The student will participate in the clinical services provided by the digestive team at Grady Memorial Hospital. The team will cover both GI inpatient service and consultation service to the hospital. The student will respond to a consultation request or inpatient admission by performing a history and physical on the patient and evaluating the initial laboratory and radiological test results. The student will then present the patient to the team on rounds and help formulate a list of differential diagnosis and plan diagnostic and therapeutic approaches. Following the initial consultation or admission, the student is responsible for tracking the progress including writing a progress note on the patient on a daily basis until the patient is discharged. The student will be able to observe endoscopic procedures performed on the patient for clinical correlation. The student will attend several weekly conferences including GI Grand Rounds, didactic lecture series, radiology, and pathology rounds. On occasions, the student may be asked to provide informal presentations on literature findings related to the case.

**920 E01 Endocrinology & Diabetes, 4 credits**

Translation Phase, Elective, S/U

Course Director: Guillermo Umpierrez, MD

Students will participate in outpatient and inpatient consultations of endocrine and diabetic patients in one of the three main hospitals. Students will initially see the patient, review the history, physical examination, and laboratory data, formulate and assess problems, and plan a diagnostic and therapeutic approach. He/she will then present that patient to the attending and write a consultant note. In addition, the student will be expected to read both basic text and some of the current literature pertinent to the patient. He/she may be asked to present at the Endocrine and Metabolic conferences. The students will attend 3 to 5 weekly diabetes, endocrine and journal club didactic lectures at different hospitals. In addition, students will have the opportunity to learn and be involved in different clinical research programs. The student will meet daily with endocrinology fellows and faculty members.

**MD 920 EM02 Medical Toxicology, 4 credits**

Translation Phase, Elective, S/U

Course Director: Melissa Gittinger, MD

The student will review records of patients admitted to Grady Hospital, Emory Midtown, Emory University Hospital, Egleston Hospital and Hughes Spalding for toxicologic problems and will discuss and make rounds on selected patients on a daily basis under direct supervision. The student will determine the outcome of poisoning incidents reported to the Georgia Poison Center by doing follow-up calls and later may assist the staff in the management of telephone calls to the extent of demonstrated ability. Each day the student will follow three cases that are seen at bedside. An oral report will be prepared and discussed with a preceptor. The student will evaluate at least 1 clinic patient and help prepare a report under the supervision of the toxicology fellow assigned to the patient. The student will participate in a weekly case conference. The student will attend and participate in a weekly journal club, a weekly emergency medicine conference, a weekly toxicology

conference, and all toxicology lectures (at least twice a week) during the rotation. At the end of the rotation, the student will present a 20 to 30 minute long PowerPoint presentation on a toxicology topic (approved by fellows or faculty). If the student is interested, he/she may also answer Poison Control calls under the supervision of an experienced specialist in poison information. The student may take part in a public education program by assisting the speaker in the field and may, optionally conduct such sessions according to demonstrated ability and interest. The student may elect to complete, during the elective, a project on some phase of poison control work, such as development of a management protocol, an epidemiological study, or development of patient education material.

#### **MD 920 EM06 Research in Emergency Medicine, 4 credits**

Translation Phase, Elective, S/U

Course Director: Debry Houry, MD

Students will participate in various stages of the process of conducting and evaluating Emergency Medicine research. The stages of the processes in which the students participate depend on the status of ongoing projects and may include data collection and entry, patient enrollment, database construction, and exposure to grant writing. Students will work as part of multi-disciplinary research teams within the Department of Emergency Medicine. Students will have the option to participate in the Emergency Medicine elective medical student lectures and skills labs and to attend the weekly lectures of the Residency Program. These learning objectives are knowledge based.

#### **MD 920 EM07 Emergency Ultrasound, 4 credits**

Translation Phase, Elective, S/U

Course Director: Kahra Nix, MD; Liang Liu, MD; Douglas Ander, MD

The use of emergency ultrasound is now commonplace in community and academic emergency departments. Focused bedside emergency ultrasound is utilized to diagnose acute life-threatening conditions, to guide procedures, and to help emergency medicine physicians make real-time decisions regarding patient treatment and care. Emergency ultrasound is a goal-directed focused ultrasound examination that answers specific and important clinical questions. The goal of the Emergency Ultrasound Elective is to expose fourth year medical students to the core ultrasound applications used in daily practice by emergency medicine physicians. This elective will allow students to develop hands on skills in image acquisition and bedside interpretation of images. Students will be expected to perform 100 independent ultrasound exams, which will be reviewed for quality and completeness by ultrasound credentialed faculty. Residents and interns are often called upon to perform ultrasound guided procedures and quickly develop competence with the use of ultrasound. This elective will provide medical students with early hands-on exposure to this valuable tool. Students will develop competency in performing FAST, AAA, Cardiac, Biliary, Renal, Thoracic, and Soft tissue/Abscess imaging. Students will also be exposed to more advanced emergency ultrasound applications including ocular, advanced cardiac, DVT, testicular, and procedural applications. During this rotation, students will spend their mornings performing self-directed learning activities and completing online didactic modules. In the afternoons students will perform supervised scanning shifts with residents and ultrasound faculty.

**MD 920 FP02 Family Medicine Preceptorship, 4 credits**

Translation Phase, Elective, S/U

Course Director: Jose Villalon-Gomez, MD

Students work with faculty attendings and residents as members of the medical care teams during the four-week rotations. Students are expected to improve their proficiency in caring for patients with the most common outpatient and inpatient diagnoses. They will provide care throughout the full spectrum of family medicine. Students spend two weeks on the inpatient service and two weeks in the outpatient residency clinic. During the inpatient phase, there will be one night of call per week, with one of them being a weekend call. The medical students are responsible for attending and participating in morning report, including making presentations themselves, when appropriate. Students are expected to attend weekly didactic sessions and to give one presentation at didactics during the rotation. During the outpatient phase, students will provide care to patients being seen in the ambulatory clinic. They will attend conferences before and after each clinic session. Students must be able to provide their own transportation.

**MD 920 FP03 Hispanic Health Care in Resource Limited Environments, 4 cr**

Translation Phase, Elective, S/U

Course Directors: Susy Alfonso, MD; Lisa Flowers, MD; Emily Herndon, MD; Erin Lepp, PA, MMSc; Flavia Mercado, MD; Alfred Brann, MD

This elective will be offered during the month of *June only*. The purpose of the elective is to expose students to the challenges of providing health care to Hispanic patients, especially in resource-poor environments. The elective is divided into 4 one-week blocks. The first will be a series of didactic sessions for half the day covering cultural competence (how to take a culturally competent health history, working with interpreters), common Hispanic traditional/alternative practices (cuarenderos, common herbs, etc.), barriers to health facing Hispanics in the metro Atlanta area (access, linguistically appropriate providers), in the farmworker setting (safety, mental health issues, food scarcity), and in resource poor health setting such as Cuba and Puerto Rico (access to medicines/procedures, the pros/cons of a socialized system). The second half of the day will be spent touring local community clinics, community and non-profit health advocacy programs and counseling services that serve predominately Hispanic patients. The second and third week, students will attend one week of the South Georgia Farmworker Project (SGFP) at either Bainbridge or Valdosta and spend the other week working in a local community clinic in the metro Atlanta area. The last week will be spent either in Cuba or Puerto Rico where students will be able to see first-hand how the country delivers healthcare, the unique challenges it has faced, and how they have addressed those challenges.

**MD 920 GM05 Service & Advocacy in Medicine, 4 credits**

Translation Phase, Elective, S/U

Course Director: Maura George, MD

A physician's role in his or her community extends beyond individual patient care and identifying and treating illnesses. The social determinants of health are the conditions in which people are born, grow, live, work, and age. Research supports the fact that many social determinants are at the root of individuals and communities health and well-being. This elective helps students look beyond their

current training in disease pathophysiology, diagnosis, and treatment and exposes them to the multiple complex factors that are at the root of our patients' health and well-being. The curriculum will be a combination of didactic lectures, experiential learning, direct service activities and personal reflection to equip future physicians to practice medicine in a socially complex world. Participants will also complete a scholarly activity that directly benefits our community.

**MD 920 GM08 Literature and Medicine, 4 credits**

Translation Phase, Elective, S/U

Course Director: Clyde Partin, MD; Sally Wolff-King, MD

Chekhov wrote in a letter to a friend that "Medicine is my lawful wife, and literature is my mistress." This course will introduce students to the study of medicine through the lens of great literature, and students will benefit from exposure to both disciplines. Such a course encourages students in medical school to think of medicine in terms of the human condition: suffering, personhood, and responsibility to each other, as well as a historical perspective on medicine. Studying medicine in close connection with literature and the arts helps to develop and nurture skills of observation, analysis, empathy, and self-reflection – all essential for understanding and practicing humane medical care. The elective will focus on literature that considers medical topics – including disease, healing, and death. The course will consider the work of many gifted writers who are physicians, as well as other great writers who consider important medical topics. This course is dedicated to poet and cardiologist, Dr. John Stone, and honors his fine work at Emory both in medicine and literature. Dr. Stone was a physician/poet and consummate humanist.

**MD 920 GM11 Geriatric Medicine, 4 credits**

Translation Phase, Elective, S/U

Course Director: Antonio Graham, MD

This elective will offer residents an opportunity to participate in the care of older, often frail patients in multiple settings of care, and under the supervision of Emory geriatric medicine faculty. This will often take place in an interdisciplinary care setting. The rotation will also give students an opportunity to learn about the complexities of the health care system as they relate to the care of older adults. Experiences may include, but not be limited to: Geriatrics outpatient clinic, home visits, experiences in skilled nursing facilities, hospital consults.

**MD 920 GM15 Preventative Medicine 4 credits**

Translation Phase, Elective, S/U

Course Director: Elizabeth Tong, MD, MPH

This elective is for fourth year medical students considering a career in Preventive Medicine, a board specialty through the American Board of Preventive Medicine. Monday through Thursday will be divided between time with face to face patient care in an academic Internal Medicine clinic and project time for scholarly activity in Public Health/ General Preventive Medicine. A typical week would be Monday project time, Tuesday morning clinic time, Tuesday afternoon project time, Wednesday project time, Thursday all day clinic. Fridays will be spent with the Emory Preventive Medicine Residency Didactics program (interactions with current Emory Preventive Medicine residents and Faculty at Emory in Preventive Medicine, instruction in topics covered by the American Board of Preventive Medicine board examination, and guest lectures from practitioners of Preventive Medicine). This

Preventive Medicine elective is based on the current month long rotation with Dr. Tong in Clinical Preventive Services offered to Emory Preventive Medicine residents as part of their residency training program. Topics of instruction during supervised clinical time will focus on applications of current U.S. Preventive Services Task Force recommendations and motivational interviewing with patients on health behaviors impacting health (for example, changes in diet, physical activity, sleep hygiene, stress management, weight loss to achieve normal body weight, smoking cessation, CDC recommended levels of alcohol consumption, and medication adherence). Scholarly activity in Public Health/General Preventive Medicine will include participation in ongoing research or quality projects that can lead to publication or poster presentation.

**MD 920 GM18 Intro to Medical Education & Clinical Training, 4 credits**

Translation Phase, Elective, S/U

Course Director: Jennifer Spicer, MD

As you look forward to your future roles as housestaff, it can be challenging to step into the role of teacher while juggling the many other responsibilities you will have for individual learning and patient care. The goal of this elective is to equip students with concrete strategies for teaching in varied settings (bedside, small group, large-scale, etc.) and to introduce future academic clinician educators to scholarship and leadership opportunities in medical education. Workshops, projects, and hands-on experiences will focus on the themes of teaching and learning, leadership, and educational research, so students can be more intentional about their teaching practices and more effective at fostering learning.

**MD 920 GM20 Medicine, Compassion & the Arts, 4 credits**

Translation Phase, Elective, S/U

Course Director: Ruth M. Parker, MD

*Not offered in 2021-2022 due to restrictions around the COVID-19 pandemic.*

What does it mean to practice medicine with compassion? How does this differ from the practice of medicine without compassion? How do we define, understand, and abide by the tenants of medical professionalism? How do we hone our ethical decision making skills using lessons from the arts? This elective puts students at the intersection of the arts and medicine, and aims to develop professionalism, communication and interpersonal skills, caring and compassion. Medicine, Compassion, and the Arts builds from the success of Medicine and Compassion, a course developed by Parker and offered for the last 15 years to Emory University students as part of Italian Studies Summer Abroad. A major component of this elective is a 10 day cultural immersion, when we join an ongoing pilgrimage of students and faculty from across the disciplines as part of Emory newly established TRACE (The Renaissance Academy of the Center for Ethics). This travel segment of the elective occurs in northern Italy and includes site visits and in-depth exploration of early hospitals, medical school, dissection theaters, burial sites, and art related to the plague and its impact. Students will complete guided study and assignments during the week prior to this travel to gain knowledge and skills that provide context and content that allow them to maximize on-site cultural explorations.

**MD 920 GM22 Hospital Medicine Elective**

Translation Phase, Elective, S/U

Course Director: J. Richard Pittman, MD

The Sub-I hospitalist elective (SIH) builds upon and is a more intensive version of the traditional sub-internship. One to two SIH students will be paired with a motivated teaching hospitalist on their weekly admitting shifts. Students will work directly with the hospitalist (without a resident or intern) and assume care of assigned patients. Sub-I hospitalists will admit a patient each week day and follow those patients for the entire week. The student will be responsible for writing notes, orders, and facilitating consults, procedures and discharge planning under appropriate supervision by the hospitalist.

**MD 920 G001 Gynecologic Surgery, 4 credits**

Translation Phase, Elective, S/U

Course Director: Namita Khanna, MD

Students will be assigned to the Gynecology and Gynecologic Oncology Service at Emory University Hospital and will serve as an extern on the service. This will involve full participation in the clinical care of patients on the wards and in the operating room. The level of participation will coincide with the level of skill of the student. There will be supervision during this time for the student and the student will be expected to attend all clinical conferences relating to Gynecologic Oncology.

**MD 920 G002 High Risk OB, 4 credits**

Translation Phase, Elective, S/U

Course Director: Michael Lindsay, MD

Students will be assigned to the antepartum High-Risk Obstetric inpatient ward, the Obstetric Outpatient Clinics and the Regional Perinatal Center. In the inpatient area the student will perform the hospital admission work-up. Review the medical record as it relates to past medical problems and the course of the present pregnancy, especially as the laboratory data relates to the status of the patient. Plan a further diagnostic and therapeutic approach. Read the basic textbook and some of the current literature which pertains to the patient's problem. Present the patient to the faculty attending during morning teaching rounds. Record the faculty attending consultation note in the medical record. In the outpatient area the student will perform return prenatal visit examinations under the supervision of the residents and MFM fellows. Observe the faculty clinic consultant during initial evaluation of high-risk patients. In the Emory Regional Perinatal Center the student will observe antepartum electronic fetal heart rate testing.

**MD 920 G003 Labor & Delivery, 4 credits**

Translation Phase, Elective, S/U

Course Director: Michael Lindsay, MD

Students will be assigned to Labor and Delivery at Grady Memorial Hospital. The student will be asked to see patients presenting in the labor and delivery area, review the medical record, examine the patient, evaluate the patient's problems, and present a plan of treatment to the resident. The student will follow both normal and complicated patients in labor under supervision of the resident. The student will perform uncomplicated vaginal deliveries under the supervision of the resident, as

well as assist the resident in complicated cases. The student will present cases to the faculty attending during morning teaching rounds and record the consultation note in the medical record. The student will attend regularly scheduled weekly departmental teaching conferences which pertain to obstetrics. The student will meet regularly with the course director or assistant course director.

**MD 920 G004 Family Planning, 4 credits**

Translation Phase, Elective, S/U

Course Director: Megan Lawley, MD

This elective is design to provide medical students with a fairly intensive exposure to the field of family planning (i.e. contraception and reproductive health services). It is designed for any clinical student who plans to utilize the learned knowledge and skills in their future specialty, whether that be OB/GYN, Family Practice, etc. Clinical activities primarily take place at Grady Memorial Hospital in: Family Planning Clinic, Teen Services Clinic, Breast Clinic, and Family Birth Center.

**MD 920 G005 Reproductive Endo & Infertility, 4 credits**

Translation Phase, Elective, S/U

Course Director: Jennifer Kawwass, MD

During this elective, students will participate in all clinical aspects of the reproductive endocrinology and infertility (REI) division. This includes attending clinic at the Emory Reproductive Center (ERC) at Emory University Hospital Midtown on a daily basis. While the clinic primarily focuses on infertility treatments, patients are also seen with Mullerian anomalies, sex chromosome aberrations, and endocrine abnormalities (PCOS, pituitary adenomas, thyroid disease, adrenal disease, menopausal symptoms). Opportunities to attend reproductive surgeries in the EUHM operating room and in vitro fertilization (IVF) procedures are also available. The student will be supervised by the attending in clinic and may observe procedures with the REI fellow or resident on rotation.

**MD 920 G006 Female Pelvic Med and Reconstructive Surgery, 4 credits**

Translation Phase, Elective, S/U

Course Director: Robert Kelley, MD

This elective is designed for 4th year medical students to learn more about Urogynecologic conditions of the female pelvic floor and those who are interested in pursuing further training in surgical subspecialties such as Gynecology & Obstetrics, Urology, General Surgery and other related fields within Female Pelvic Health. The student trains as an integral member of the Female Pelvic Medicine & Reconstructive Surgery (FPM&RS) team at Emory University Hospital and Emory Clinic. The medical student participates heavily in FPM&RS clinics including in pre-operative evaluations, completion of History and Physical examinations particular to patients with pelvic floor defects, urinary and fecal incontinence, and other Urogynecologic disorders. The student will learn non-surgical and surgical management treatments for these patients. The student participates in surgery with division faculty, participates in Urogynecologic inpatient consults, and rounds on post-operative patients on the service.



**MD 920 G007 General OB/GYN, 4 credits**

Translation Phase, Elective, S/U

Course Director: Jade Stafford, MD

The student will spend time with Emory General OB/GYN faculty and residents. The student will get to know what a Generalist OB/GYN position is like. They will mainly spend time in the outpatient setting in a office setting, seeing patients alongside a faculty member. Opportunities are available to follow a faculty member to the operating room and to round on patients in the hospital. Opportunities can be made available to spend time with the residents on labor and delivery at both EUHM and at Grady Memorial Hospital.

**MD 920 G009 Women's Health at the VA**

Translation Phase, Elective, S/U

Course Director: Jennifer Goedken, MD

Outpatient Gynecology to include consultative as well as maintenance care: Review patient charts, perform patient interviews via video and telephone, develop a differential diagnosis and management plan with the guidance of the attending gynecologist or PA, provide appropriate educational materials and counseling and engage in necessary patient follow up. (3-4 days per week). Outpatient women's health primary care: Review patient charts, perform patient interviews via video and telephone, develop a differential diagnosis and management plan with the guidance of the attending primary care physician or NP, provide appropriate educational materials and counseling to include routine health screening recommendations and engage in necessary patient follow up.

**MD 920 G010 Maternal Fetal Medicine**

Translation Phase, Elective, S/U

Course Director: Marissa Platner, MD

Students will be assigned to the Emory Perinatal Center and the inpatient Maternal Fetal Medicine/antepartum service at Emory Midtown and Emory Decatur. In the outpatient clinic the student will perform outpatient consultations with the MFM attendings, will prepare for each patient with medical record review and literature review as appropriate. They will then record the faculty attending consultation note in the medical record. Patients seen in our practice include women with gestational diabetes, heart disease, fetal growth restriction, fetal anomalies, and more. Additionally, they will have the opportunity to learn the basics of ultrasound imaging practices. On the antepartum service the student will perform inpatient consultations with the resident or fellow and the attending and will round daily with the MFM team. The student will have the opportunity to present patients to the attending on rounds. They will observe the faculty consultant during initial evaluation of high-risk patients in both an inpatient and an outpatient setting. If the student desires, they may have an opportunity to take overnight L&D shifts at Grady Memorial Hospital. This is not mandatory and can be determined on a case by case basis.

**MD 920 H001 Hematology & Sickle Cell, 4 credits**

Translation Phase, Elective, S/U

Course Director: Morgan McLemore, MD

The medical student will be part of a Hematology Consultation Service consisting of an attending physician, fellows and one or two residents (PGY 2 & 3). Additional

team members include nurse clinicians, social workers and physician assistants. The medical student will participate in daily hematology rounds, a multidisciplinary conference per week, new patient and follow-up hematology and a sickle cell clinic. The student will initially be asked to observe and become familiar with the clinical setting and flow. Students will be asked to initially see a patient; review the history, physical examination and laboratory data; formulate and assess problems and plan a diagnostic and therapeutic approach. He/she will then present the patient to the fellow or resident and participate in the fellow or resident's writing of their consultant note. The new patients and follow-ups will be presented to the attending daily. The student will attend Hematology Clinic on Tuesday mornings and Sickle Cell Health Maintenance clinic on Wednesday or Thursday.

**MD 920 H002 Hematology (VA), 4 credits**

Translation Phase, Elective, S/U

Course Director: Maria Ribeiro, MD

This rotation was designed as part of the hematology/oncology rotation at the Atlanta VAMC. It combines well-balanced inpatient and outpatient patient assessment under direct supervision of the attending physicians assigned to teach in both settings. The teaching is incorporated to the requirements for anatomy, histology, cytology, physiology, physiopathology, pharmacology, clinical presentation and physical findings and treatment of most common hematological and oncologic conditions. The student is required to report to multidisciplinary conferences at 8A Mondays, hematology reviews Tuesday at 8A, Hematology/Oncology Grand Rounds (Winship) Wed 7:30A, Hematology/Oncology Fellowship review Lectures (Winship) Thursdays, Journal Club Fridays at 8A, Tumor Board on Mondays at 12PM, Head and Neck multidisciplinary case discussions on Thursday at 4PM. In addition, the student is expected to attend the Medicine Core lectures and noon conferences at the VA. There are also individual and group sessions for hematopathology reviews, about 2 hours per week. The student is expected to evaluate patients in clinic under direct supervision of residents, fellows and attending physicians as scheduled and they are expected to follow 2 inpatient consult patients and write a student note on the medical records.

**MD 920 H003 Hematology (Emory), 4 credits**

Translation Phase, Elective, S/U

Course Director: Manilla Gaddh, MD

Students rotating on the Hematology Service will be exposed to hospital-based consultative Hematology (2 weeks on the Hematology Consult Service) and acute non-transplant management of patients with hematologic malignancies (2 weeks on the in-patient Leukemia unit). Students will also have the opportunity to perform bone marrow biopsies and lumbar punctures.

**MD 920 H004 Pediatric and Adult Hemoglobin Disorders, 4 credits**

Translation Phase, Elective, S/U

Course Director:

This is a 4-week course to provide medical students with rich clinical experiences in Pediatric and Adult Hemoglobin Disorders through participating patient care activities under direct supervision, and exposure to clinical and laboratory research, to achieve the following educational goals: To know the fundamental aspects of red blood cells, hemoglobin structure and function. To comprehend the clinical

spectrums of sickle cell disease, thalassemias, and other hemoglobin disorders. To understand the principles of diagnostic approach to anemia, and suspected hemoglobin disorders and apply diagnostic studies appropriately. To appropriately apply therapeutic options for patients with sickle cell disease, thalassemias and other hemoglobin disorders, in general, and common complications associated with sickle cell disease and thalassemias. To understand the value of multi-disciplinary team approaches to the management of patients with sickle cell disease and thalassemias. To update the current research trend and methods in sickle cell disease and thalassemias.

**MD 920 H005 Medical Oncology (Grady), 4 credits**

Translation Phase, Elective, S/U

Course Director: Leon Bernal-Mizrachi, MD

Extensive experience will be provided in both the inpatient and outpatient setting working with patients with hematologic and/or oncologic disorders. Emphasis will be placed on the diagnostic workup, staging and consideration of treatment options that may include chemotherapy, radiation, or palliative care. There will also be follow-up of patients with solid tumors as well as chronic hematologic disorders. Students will be assigned 2-3 patients per week for work-up and discussion with the preceptor. The student will learn how to present a patient, if not already known, and will be expected to give differential diagnoses. Students will also be exposed to palliative care and learn about its role in the treatment of patients with malignancies.

**MD 920 HS01 Exploring Hlth System Sciences through Proactive Outreach Calls**

Translation Phase, Elective, S/U

Course Director: Nathan Spell, MD; Maura George, MD, FACP

A number of topics that have been nontraditional in medical education are now recognized as essential to the future practice of medicine. These include quality improvement and patient safety, clinical informatics, healthcare policy and economics, value-based care, leadership skills, medical ethics, disparities and the social determinants of health, population health, team-based care and healthcare delivery systems. Collectively, these are called the health system sciences. This course is designed to ensure a basic understanding of core concepts and to foster self-directed exploration of more advanced aspects of these topics. All students will complete the online Health System Science Learning Series by the American Medical Association (AMA) and will obtain the Basic Certificate in Quality and Safety from the Institute for Healthcare Improvement (IHI) Open School. Students will review assigned articles and participate in a weekly journal club. Students will also select an area of focus for independent study by the end of the second week of the elective. By the end of the elective, students will have created a bibliography and proposed an educational activity for future medical students.

**MD 920 HS03 Artificial Intelligence & Machine Learning in Medicine**

Translation Phase, Elective, S/U

Course Director: Judy Wawira Gichoya, MD

Innovations in clinical care are increasingly impacted by the development and implementation of machine learning (ML) and artificial intelligence (AI). As future clinicians, medical students should be informed and prepared for technological

changes that will affect how they provide care for their patients. The goals of this senior elective are to demystify AI and ML in healthcare, enabling students to have informed conversations about these technologies and participate in their clinical advancement. All students will receive mentoring in drafting and scoping a technical project proposal for a clinical AI project on a topic of their interest. Students with a prior programming background (i.e. proficiency in Python coding) who choose the Technical track will also work on developing, training, and evaluating a clinical machine learning model, and will receive feedback and guidance during this process. The Non-Technical track will have a deeper focus in understanding concepts, limitations, and history of clinical ML, generally and in a specialty of their choosing, and will learn how to train a basic machine learning model without writing code using an online graphical interface.

**MD 920 ID02 Infectious Diseases (Grady), 4 credits**

Translation Phase, Elective, S/U

Course Director: Wendy Armstrong, MD

Students will perform an initial evaluation of the patient including review of the history, physical examination, and laboratory data. The student should create a problem list, assess the problems, formulate a differential diagnosis and plan a diagnostic and therapeutic approach. The student will then present the patient to the attending physician and should write a consult note for critique by the attending physician. In addition, the student will be expected to read both basic text information and some current literature pertinent to the patient's signs, symptoms, or diagnosis. Finally, the student may be asked to present a case at the Infectious Disease Housestaff Conference.

**MD 920 ID03 Infectious Diseases (VA), 4 credits**

Translation Phase, Elective, S/U

Course Director: Abeer Moanna, MD

Students will initially see the patient; review the history, physical examination and laboratory data; formulate and assess problems and plan a diagnostic and therapeutic approach. He/she will then present the patient to the attending and write a consultant note. In addition, the student will be expected to read both the basic text and some of the current literature pertinent to the patient. Finally, he/she may be asked to present at the infectious diseases conferences. There is a weekly seminar on basic processes in infectious diseases and a case of the week conference that the student will be required to attend. Furthermore, he/she will meet weekly with individual faculty members for informal discussions as well as having informal laboratory sessions in the diagnostic microbiology laboratory.

**MD 920 ID04 Infectious Diseases (Emory), 4 credits**

Translation Phase, Elective, S/U

Course Director: Wendy Armstrong, MD

Students will perform an initial evaluation of the patient including review of the history, physical examination, and laboratory data. The student should create a problem list, assess the problems, formulate a differential diagnosis and plan a diagnostic and therapeutic approach. The student will then present the patient to the attending physician and should write a consult note for critique by the attending

physician. In addition, the student will be expected to read both basic text information and some current literature pertinent to the patient's signs, symptoms, or diagnosis. Finally, the student may be asked to present a case at the Infectious Disease Housestaff Conference.

**MD 920 ID05 Infectious Diseases (Emory Midtown), 4 credits**

Translation Phase, Elective, S/U

Course Director: Wendy Armstrong, MD

Students work with members of the Infectious Diseases division in their outpatient clinics. They will encounter all stages of HIV infection, post-hospital Infectious Diseases follow-up patients, and outpatient consults.

**MD 920 ID06 HIV Infections, Outpatient, 4 credits**

Translation Phase, Elective, S/U

Course Director: Minh Ly T Nguyen, MD

The elective is based at the Grady ID Program located at the Ponce de Leon Center. The clinic provides comprehensive primary care to approximately 5000 HIV-infected patients. The principal goal of this elective is to provide students with an appreciation of the complexity of the care of HIV-infected patients as well as provide basic knowledge in the management of HIV-infected patients. In the first 2 weeks, the student will spend time with the preceptor to discuss the pathophysiology of HIV infection, mechanisms of action of antiretrovirals, the rationale for their choice in HIV treatment, as well as diagnosis and management of opportunistic infections and comorbid illnesses. The student will be assigned reading on those topics to enhance the discussion. During that time, he/she will be shadowing the preceptor in the evaluation of clinic patients, as well as rotating through different subspecialties clinics such as Oral Health Center, Psychiatry, Hepatitis, Lipids and Dermatology, with an opportunity to interact with different providers during the rotation. Once students are familiarized with the complex aspect of HIV care, they will have an opportunity to assess and present patients to the preceptor.

**MD 920 ID08 Infectious Disease Consults, 4 credits**

Translation Phase, Elective, S/U

Course Director: Wendy Armstrong, MD

Students will be asked to perform an initial evaluation of the patient including review of the history, physical examination, and laboratory data. The student should create a problem list, assess the problems, formulate a differential diagnosis and plan a diagnostic and therapeutic approach. The student will then present the patient to the attending physician and should write a consult note for critique by the attending physician. In addition, the student will be expected to read both basic text information and some current literature pertinent to the patient's signs, symptoms, or diagnosis. Finally, the student may be asked to present a case at the Infectious Disease Housestaff Conference. The student should attend the weekly Case of the Week (COW) Clinical Infectious Disease conference and may attend the weekly core curriculum lecture. The student should attend the Infectious Disease Research Seminar.

**MD 920 IHHE Interprofessional Health Humanities and Ethics, 4 credits**

Translation Phase, Elective, S/U

Course Director: Kathy Kinlaw, MD; Hughes Evans, MD; Kylie Smith, MD

This elective is offered in March only. Students will explore the medical humanities and ethics in practice through engaged, interprofessional clinical experiences and discussions. The course will address the theme of embracing “otherness” and reframing the patient’s story. The notion of “otherness” encompasses ideas of normal v abnormal, as well as ideas about majority v minority culture, powerful v powerlessness. Students will: 1) read fiction and nonfiction literature exploring the theme of embracing otherness and reframing illness narratives, 2) explore how concepts of otherness in healthcare has changed over time and impacted medical care, 3) participate in an interprofessional discussion with nursing students enrolled in a course on Nursing for Social Change, 4) explore otherness in several clinical contexts (e.g.: rehabilitation/disability, aging, dementia, infectious disease) and in the community; and 5) participate in the final phase of planning for and attending an interdisciplinary conference in on the theme in #1.

**MD 920 IPE Core Components of Interprofessional Collaborative Practice, 4 credits**

Translation Phase, Elective, S/U

Course Director: Douglas Ander, MD

This interprofessional course is designed to assist students in developing competencies necessary for interprofessional collaborative practice. This virtually interactive course will develop knowledge and skills essential for collaborative practice in healthcare to improve patient safety, quality care, patient outcomes, and patient satisfaction. The objectives of the course are based on the Interprofessional Education Collaborative (IPEC) Core Competencies: Values/Ethics, Roles/Responsibilities, Interprofessional Communication, and Teams/Teamwork.

**MD 920 MED Applications & Foundations of Education in Medical Education, 4 credits**

Translation Phase, Elective, S/U

Course Director: Hugh Stoddard, MEd, PhD

This elective is designed to provide medical students with the theoretical framework of medical education that will both enhance their own learning as a medical student and resident and will also provide a platform for a teaching career in academic medicine. Students will begin by studying (or reviewing) basic principles in education including: cognitive psychology (the basis of learning), instructional/educational design, curriculum philosophy, workplace assessment practices, and approaches to evaluation of training. Students will also consider the profession of medicine and the history of how members of the profession train future professionals. The bulk of the course will concentrate on applying these educational principles to a unique, student-selected environment or aspect in which medical education occurs. This application may include topics such as: goals of professional education, clinical instruction, workplace assessment, simulation, or testing for licensure. The emphasis will be on delineating how medical education differs from educational philosophy and training in other disciplines.

**MD 920 NE02 Neurology Elective, 4 credits**

Translation Phase, Elective, S/U

Course Director: Taylor Harrison, MD

The neurology elective clerkship is a 4-week clerkship experience incorporating two 2-week blocks at different clinical sites ensuring exposure to various aspects of clinical neurology. Specific clinical assignments, which may include outpatient subspecialty clinics as well as inpatient services in the adult neurology program, are determined based on the student's interests and personal goals. This elective emphasizes the traditional clinical experience, which is complimented by attendance at weekly didactic sessions. Student performance evaluations and an end-of-clerkship oral exam are the assessment methods utilized during this elective.

**MD 920 NE07 Advanced Neuro: Sleep Disorders, 4 credits**

Translation Phase, Elective, S/U

Course Director: Taylor Harrison, MD; Lynn Marie Trotti, MD, MS

Students will spend 4 weeks learning about the principles and practice of sleep medicine. The majority of time will be spent in the multidisciplinary sleep clinics (neurology, pulmonary, pediatrics, dentistry). During clinic time, students will gain skills at performing a sleep history and physical exam and learn management options for common sleep disorders. Students will also get hands-on experience in the interpretation of in-laboratory sleep studies (diagnostic, CPAP titration, and multiple sleep latency tests), with a focus on identifying sleep stages and key pathological events (e.g., apneas, periodic limb movements).

**MD 920 NI03 Nephrology, 4 credits**

Translation Phase, Elective, S/U

Course Director: James Lynch Bailey, MD

The student will meet each morning to make patient rounds in the hospital with the Nephrology attending, the resident and renal fellow. Patients from the consultation service will be assigned for the student to work-up, present, and follow on a daily basis. Following the performance of a history and physical examination on these patients, reviewing laboratory, x-rays, and other ancillary data, the student presents these patients to the renal attending and examines the urine with the renal attending and other members of the consult service. Following a discussion, the student fills out a consultation form, recording this information with differential diagnoses and the recommendations of the renal service. Following the initial consultation and review with the attending, the student is expected to follow these patients hospital course to document their diagnostic and therapeutic responses and in conjunction with the attending to make further recommendations for diagnosis and care. It is expected that the medical student will work-up two to three new patients a week. Sites that are available include Emory University Hospital, Emory Midtown Hospital (Crawford-Long), and Veterans Affairs Hospital. Depending on the medical students and attending faculty members' schedules the medical student could also attend and participate in the outpatient work-up of patients with renal disease.

**MD 920 NI05 Transplant Medicine (Kidney and Liver), 4 credits**

Translation Phase, Elective, S/U

Course Director: Sudha Tata, MD (kidney); Ravi Vora, MD (liver)

The purpose of this elective is to introduce the medical student to transplant medicine, specifically as it relates to liver and kidney disease. Students will be exposed to the comprehensive management of patients high on the transplant list and in the intensive care setting with complications of end stage liver disease and kidney disease. Students will gain experience from inpatient rounds and outpatient clinics which include the care of pre and post-transplant patients. Students will also be exposed to procedures related to transplant medicine including but not limited to liver and kidney biopsies, EGD (diagnosis, variceal bleeding and control), colonoscopies (colon cancer screening) and transplant surgeries. Finally, the ethical considerations relating to transplant and the psychosocial evaluation of transplant patients will also be highlighted. Students will also have the opportunity to learn about immunosuppression and the long term medical management of transplant recipients.

**MD 920 NI06 Nephrology (Grady), 4 credits**

Translation Phase, Elective, S/U

Course Director: John Doran, MD

This is a clinical elective at Grady Memorial Hospital, which is a great place to learn Renal Medicine. As the largest public hospital in the southeast, and one of the largest in the country, patients present to Grady on a daily basis with yet undiagnosed kidney diseases and disorders of all varieties. As chronic kidney disease is endemic in the region, the volume of patients provides an opportunity to learn to manage common and unusual kidney diseases. Because of dialysis therapies, the kidneys are the only major organ in the body that you can lose and still lead a pretty decent life. More patients start dialysis at Grady than any other place in Georgia.

**MD 920 O01 Ophthalmology, 4 credits**

Translation Phase, Elective, S/U

Course Director: Emily Graubart, MD

The student will have assigned weeks of rotation at the primary clinical setting of the department. If the rotation is two weeks in duration (for Emory students only), the student will spend one week at Grady Memorial Hospital and one week at the VA Medical Center. If the rotation is four weeks in duration, the student will spend two weeks at Grady Memorial Hospital and two weeks at the VA Medical Center. In addition, time may be spent observing in certain subspecialty clinics or working with tutorials in ocular pathology at the Emory Eye Center. There will be opportunities to observe ophthalmic surgery at Grady Hospital and the VA Medical Center. It is expected of the student that he/she read independently from assorted texts available during the course of the elective. In addition, the student is expected to attend all didactic sessions possible.

**MD 920 O02 Ophthalmic Surgery: Intensive OR & Wet Lab Experience, 4 cr**

Translation Phase, Elective, S/U

Course Director: Yousuf M. Khalifa, MD, FACS; Jeremy Jones, MD

Ophthalmic microsurgical technique is exciting to watch, but operating under a microscope on the eye can be a daunting task for the beginner. The best method



for safe acquisition of surgical skills is a mix of observation and hands on wet-lab practice. In this course, the senior medical student planning on specializing in ophthalmology will be exposed to all intraocular surgery subspecialties (cataract, cornea, glaucoma, and retina) in the operating room and the Emory Eye Center's state-of-the-art wet lab.

**MD 920 O03 Tele-Ophthalmology, 4 credits**

Translation Phase, Elective, S/U

Course Director: Yousuf M. Khalifa, MD, FACS Emily Graubart MD

This COVID-tailored Ophthalmology telemedicine elective will be completely virtual. Many of the endeavors will involve the inaugural tele-ophthalmology efforts at Grady Eye Center. Other requirements will involve presenting eye disease processes to peers and completing virtual cases offered by the American Academy of Ophthalmology.

**MD 920 O04 Ocular Oncology and Pathology, 4 credits**

Translation Phase, Elective, S/U

Course Director: Hanes E. Grossniklas, MD

The Ocular Oncology and Pathology elective will introduce the basic concepts of diagnosis and management of ocular tumors, as well as the importance of pathology in the field of ophthalmology. The majority of the time will be spent with the ocular oncology fellow and Hans Grossniklaus, MD in the L.F. Montgomery Laboratory at Emory Eye Center. The student will learn to read specimens collected from both general and subspecialty clinics and become familiar with common stains. Clinical observation in multiple ocular oncology clinic and the operating room will help the student learn about diagnostic and treatment strategies of ocular tumors. Other requirements will include presenting a patient case at the monthly Tumor Board and completing various online pathology cases.

**MD 920 OS02 Orthopaedic Externship, 4 credits**

Translation Phase, Elective, S/U

Course Director: Thomas Bradbury, MD

Two weeks at Grady - Ortho trauma. Two weeks at either Emory Ortho Hospital or Emory University Hospital-Midtown. At both hospitals, both operative and clinic responsibilities. Assigned reading. Written test at end of rotation.

**MD 920 OS04 Sports Medicine, 4 credits**

Translation Phase, Elective, S/U

Course Director: Neeru Jayanthi, MD

This is a clinical based elective for students not going in to orthopaedics. They will work in the clinic as a primary clinician evaluating new, return and post-operative patients. They will go over each patient with the attending and have true hands on "on the job" learning experience. During the elective they will have the opportunity to scrub in the operating room (operating room participation is optional).

**MD 920 P01 Psychiatry - VAMC, 4 credits**

Translation Phase, Elective, S/U

Course Director: Troy Kapral, MD

Student will be exposed to a variety of psychological illnesses including Mood Disorder, Thought Disorders, and Anxiety Disorders including Post-Traumatic Stress

Disorder in veterans, Substance Abuse Disorders, Personality Disorders, and Medical Conditions contributing to psychological disorders. The student will shadow an attending or third year psychiatry resident and increase in their skill of interviewing, determining differential diagnosis, and treatment of psychiatric illnesses. They will learn medication management in addition to psychotherapy techniques.

**MD 920 P02 Psychiatry Subinternship (Grady) Milieu Unit, 4 credits**

Translation Phase, Elective, S/U

Course Director: Robert O. Cotes, MD

Students will work on the 13A inpatient unit largely functioning as an intern under the supervision of the attending psychiatrist and chief resident. The focus is on the in-depth, evidence-based treatment of patients with serious mental illness. Equal emphasis will be placed on psychopharmacological and psychosocial interventions. The M4 will give clinical presentations and develop diagnoses, will be expected to participate actively in all didactic activities, and to do basic readings in the area of their elective.

**MD 920 P04 Community Psychiatry at Grady**

Translation Phase, Elective, S/U

Course Director: Robert O. Cotes, MD

The purpose of the Community Psychiatry elective is to provide senior medical students exposure to working with individuals with severe mental illness in an outpatient setting at Grady Health System. The student will gain experience in integrated behavioral healthcare in a primary setting, first episode psychosis, clozapine, and family psychotherapy. On the days the student is not in clinic (Tuesday a.m., Thursday p.m., Friday p.m.), they will work on a community psychiatry project with Dr. Cotes. Projects can include working on existing schizophrenia research projects, narrative writing experiences, or advocacy initiatives depending on the student's interest. Students will also participate in other group supervisory experiences with other senior psychiatry residents.

**MD 920 P06 Inpatient Psychiatry, 4 credits**

Translation Phase, Elective, S/U

Course Director: Patricio Riva Posse, MD

The Emory Medical Psychiatry unit is a voluntary psychiatry unit that admits patients with a variety of behavioral problems. The unit is unique in Atlanta because of its ability to manage complex medical and neurologic problems while meeting patients' behavioral health needs. Students in this elective will act as Junior Psychiatry residents, independently managing a panel of patients and directly responsible to the Chief Resident and attending physician.

**MD 920 P09 Psych Med Practice/Psychiatry Consults, 4 credits**

Translation Phase, Elective, S/U

Course Director: Raymond Young, MD

This elective serves to those medical students who may have a strong interest in pursuing a career in psychiatry and more specifically in the subspecialty field of consultation liaison psychiatry or psychosomatic medicine. Over the 4 week period, the medical student will have opportunities to serve as consultation to inpatient medical and surgical patients at Emory University Hospital and the Center for

Rehabilitation Medicine Hospital. They will learn to interview and evaluate a wide variety of patient populations including patients with delirium, dementia, affective disorders, anxiety disorders, somatoform disorders, substance abuse, and psychotic disorders. They will learn to properly assess medical decision-making capacity. They will also have the opportunity to evaluate patients as candidates for heart, liver, and lung transplants.

**MD 920 P11 HIV Psychiatric Services, 4 credits**

Translation Phase, Elective, S/U

Course Director: Sanjay Sharma, MD

Elective is formally titled: *Psychiatry: HIV/Aids Mental Health/Substance Abuse Treatment Services* and takes place at the Grady Infectious Disease Clinic at 341 Ponce de Leon Ave. This elective allows students to primarily experience the evaluation, treatment, and management of individuals with HIV/AIDS + comorbid mental health and substance use issues/illnesses and engage with various members of the treatment team, with diverse backgrounds and clinical skills, in providing these services. Through this elective, the student will have the opportunity to develop clinical skills, including problem solving, diagnosis, treatment planning, etc., important in working with patients. Primary student responsibility will include observed/supervised patient interactions and engaging in the diagnosis and treatment recommendation process + the student will have individual supervision and teaching sessions with clinic attending's throughout the rotation.

**MD 920 P12 Intro to Criminal & Civil Forensic Psychiatry, 4 credits**

Translation Phase, Elective, S/U

Course Director: Julie Rand Dorney, MD

This forensic elective gives students exposure to the criminal and civil aspects of forensic psychiatry. The criminal aspects of forensics studied will include assessment of competency to stand trial, criminal responsibility (insanity defense evaluations), assessments for civil commitment and dangerousness, and treatment of defendants in a jail setting. The student will have exposure to these defendants at the local jails and state hospital forensic units. The civil aspects of forensics studied will include review of medical malpractice cases (i.e. cases that cover issues such as informed consent, right to refuse treatment, suicide, polypharmacy, false imprisonment), review of issues related to mental health discrimination and workers' compensation. There is also exposure to evaluations for capacity (dementia) and child custody. This elective gives the student exposure and experience in the courtroom and contact with courtroom personnel, including lawyers and judges.

**MD 920 P14 Survey of Women's Mental Health, 4 credits**

Translation Phase, Elective, S/U

Course Director: Toby D. Goldsmith, MD

Women make up a majority of the patients cared for by psychiatrists in the United States. Many women with psychiatric illness are in their reproductive years and thus require treatment which is tailored to their needs.

This elective will expose the student to a variety of settings where women are cared for: 1. The Grady Hospital Women's Clinic which is integrated with the department of Obstetrics and led by Stephanie Winn, MD. The student is likely to see patients with more severe mental illness and active substance abuse while in this setting, as

well as women with significant socioeconomic stressors. 2. Emory Neurodevelopmental Exposure Clinic under the supervision of Claire Coles, PhD. Student will become familiar with the sequelae of alcohol, substance and toxin exposure in women and their offspring 3. The Emory Women's Mental Health Program- Drs. Toby Goldsmith and Rebecca Woo will allow the student to shadow them as they see their active patients and supervise the care of patients seen by PGY-4 residents 4. PEACE for Moms- Student will have to present a tangible project at the close of their rotation which can be used for this statewide perinatal psychiatry access program.

**MD 920 P23 Combined Internal Medicine and Psychiatry Elective, 4 credits**

Translation Phase, Elective, S/U

Course Director: Kellie Clearo, MD

The student will rotate at Emory University Hospital and Grady Memorial Hospital and will be involved in both inpatient and outpatient care. The elective weeks will be divided up between the two outpatient medicine-psychiatry clinics at Grady and the inpatient consult-liaison services at both Grady and Emory University Hospital.

**MD 920 P24 Psychiatry (Skyland Trail), 4 credits**

Translation Phase, Elective, S/U

Course Director: Raymond Young, MD

Students will work at Skyland Trail, a nationally recognized nonprofit mental health treatment organization serving adults ages 18 and older. Students will be exposed to a wide variety of psychopathology in a community/outpatient setting and to a holistic program of evidence-based psychiatric treatment, integrated medical care, research and education. There is no call schedule for this elective.

**MD 920 PA01 Pathology, 4 credits**

Translation Phase, Elective, S/U

Course Director: Stewart Neill, MD; Jeannette Guarner, MD

This elective is designed for medical students considering a career in pathology and for students who wish to learn more about the role of pathology in the care of their patients. The four-week rotation is divided into blocks that cover each of the major aspects of pathology. *Anatomic pathology:* With the direct assistance of pathology residents and faculty, the rotator will get hands-on experience in gross examination and dissection of surgical specimens, microscopic study of tissue and formulation of pathologic diagnoses. The rotator will have the opportunity to follow specimens from the time they are received in pathology until the time they are officially signed-out. They will also spend time in the frozen section room. Intraoperative frozen section is an essential part of many surgical procedures. During this consult, the pathologist makes rapid diagnoses of frozen surgical specimens and relays the diagnoses intraoperatively to the surgeon, thus helping to decide the course of therapy. Depending on the type of specimen examined, the pathologist might determine the benign or malignant nature of a given lesion, if the margins of a tumor resection are free of malignancy, etc. During this week, the rotator will learn how the pathologist interacts with clinicians during frozen section consultation, and will be introduced to tissue sectioning, histologic staining, and gross/microscopic diagnosis.

**MD 920 PA02 Forensic Pathology & Death Investigation, 4 credits**

Translation Phase, Elective, S/U

Course Director: Michael Heninger, MD

Students participate in daily morning case review meetings, didactic sessions, and afternoon wrap-up case review meetings with staff. They also observe and participate in autopsies and postmortem examinations, as well as death scene investigations when feasible. Students also usually have the opportunity to observe court testimony proffered by medical examiner staff pathologists. In short, the elective serves to provide the student with a basic understanding of forensic pathology and death investigation.

**MD 920 PD01 Medical Intensive Care Unit (MICU)- Grady, 4 credits**

Translation Phase, Elective, S/U

Course Director: Annette Esper, MD

This rotation integrates the fourth year medical student into an active medical intensive care environment as they join one of four teams providing care to patients in the medical and coronary intensive care units at Grady Memorial Hospital. The student serves as an integral part of the MICU team, sharing responsibility with the PGY-1 intern for primary patient care, as supervised by senior resident, a post-graduate fellow in critical care, and critical care attending physician. The rotation offers both exceptional autonomy and supervision of direct patient care, where the medical student will be responsible for evaluation of patients admitted to the MICU service from the general wards and the Emergency Department, for generating differential diagnoses and therapeutic plans, and for performing necessary intensive care procedures (supervised) as part of patient care.

**MD 920 PD03 Pulmonary Diseases (VA), 4 credits**

Translation Phase, Elective, S/U

Course Director: Ruxana Sadikot, MD

The student will evaluate patients with pulmonary problems along with a Pulmonary Attending physician. These evaluations will include opportunities for the student to take the primary history and physical exam from patients, review pertinent lab and radiographic studies, and form an initial diagnostic and therapeutic plan. The attending will then review this data with the student and formally complete the consultation process. Students will also have opportunities to directly observe a variety of pulmonary procedures including bronchoscopy, thoracentesis, chest tube placement, and pulmonary function studies.

**MD 920 PD04 Pulmonary Diseases (Grady), 4 credits**

Translation Phase, Elective, S/U

Course Director: Annette Esper, MD

This elective includes supervised clinical experience and didactic teaching from post-graduate trainees (i.e. fellows) and attending physicians in the field of pulmonary diseases. The elective is a combination of supervised and independent clinical experience, with medical students generally serving as the first line evaluation of non-emergent inpatient pulmonary consults. After their initial evaluation of the patient, a standard presentation of the case is followed by review of relevant radiographic and physiologic (e.g. pulmonary function) studies, culminating in the differential diagnosis and discussion of the diagnostic and therapeutic approaches.

**MD 920 PE02 General Pediatrics Inpatient, 4 credits**

Translation Phase, Elective, S/U

Course Director: Eric Felner, MD

Fourth year students rotating on the general pediatrics inpatient elective at Egleston are expected to function as a sub-intern. There are four general pediatric inpatient teams. Each team is composed of a senior (third-year) resident, one intern, and one to three third year medical students and is overseen by a general pediatrics attending. We allow one fourth year student per team, on up to four teams. The fourth year medical student functions as similarly as possible to an intern with close supervision under the senior resident and attending. Ideally, no team has two interns and a fourth year medical student. Additionally, third year medical students are not permitted to follow patients belonging to the fourth year student, so as to allow the fourth year student complete ownership of his/her patients on the student level. Fourth year students spend four weeks on the same inpatient team. Depending on correspondence with resident and attending rotation blocks, students can expect to have one to two resident teams and one to three attendings over the course of their rotation. Fourth year students take call with their team. There is no overnight call. There is an option to do night float for 3 to 4 nights during the rotation. Each of the four teams rotates on a continuous every fourth day on call schedule. The on call team admits patients arriving before 7pm. Fourth year students can expect to be on short call every fourth day with their team. Fourth year students typically care for two to three patients initially with gradual increase to four to six patients depending on the team's census and the student's capability. The student has opportunities to perform complete admission history and physicals, write orders (with supervision in the EMR), pre-round daily on his/her patients, and present patients on rounds. The student may interact directly with consultants and allied health professionals.

**MD 920 PE04 Pediatric Emergency/Urgent Care, 4 credits**

Translation Phase, Elective, S/U

Course Director: Mayura Gujarathi, MD

This elective is an introduction to Pediatric Emergency Medicine and Urgent Care.

**MD 920 PE05 Pediatric Cardiology, 4 credits**

Translation Phase, Elective, S/U

Course Director: Peter Fischbach, MD

The elective will occur at the Cardiac Step-Down Unit at Children's Healthcare of Atlanta at Egleston. Students will be involved in all aspects of the clinical care provided to patients on the cardiology service including: clinical assessment, formulation of a differential diagnosis, choice and interpretation of appropriate testing, and development of an impression and plan. Students will present their patients during our multidisciplinary rounds and communicate with families and consulting services. Patient load will be maintained at a reasonable level to facilitate self-directed learning and attending didactic sessions.

**MD 920 PE06 Pediatric Endocrinology, 4 credits**

Translation Phase, Elective, S/U

Course Director: Leonidas Panagiotakopoulos, MD; Eric Felner, MD

At the beginning of the course, the student will meet with the faculty member to define individual goals and develop an individualized format. There will be weekly assignments for reading and a weekly tutorial to discuss assigned topics in the fundamentals of Pediatric Endocrinology. The student will observe and participate in the following activities in the course of each week on the service: 1) a referral practice of Pediatric Endocrinology at the Emory Children's Center (ECC); 2) a journal club and interdepartmental endocrine group conference on Monday afternoons; and 3) evaluation and management of inpatients at CHOA-Egleston. Students with an interest in medical research will be invited to participate in the conferences and discussions of a laboratory group with interests in molecular/genetic investigation, disorders of growth, and in the pathogenesis of diabetes. The student will participate in both the outpatient clinic and if the student desires, the inpatient service

**MD 920 PE07 Ped. Hematology/Oncology/Bone Marrow Transplantation, 4 credits**

Translation Phase, Elective, S/U

Course Director: Fola Adisa, MD

This elective will provide medical students with rich clinical experiences in Pediatric Hematology/Oncology through participating patient care activities under direct supervision, to achieve the following educational goals: To know the fundamental aspects of red blood cells, white blood cells and coagulation those are relevant to common clinical blood disorders and malignancies in children. To comprehend the clinical spectrums of anemia, neutropenia, thrombocytopenia and bleeding disorders, as well as common childhood cancer. To understand the principles of diagnostic approach to anemia, neutropenia, thrombocytopenia and bleeding problems, and patients suspected having malignancies, and to apply them in clinical settings properly. To acquire the skills of evaluating and managing common blood disorders in children.

**MD 920 PE08 Pediatric Infectious Diseases, 4 credits**

Translation Phase, Elective, S/U

Course Director: Tom Fox, MD

Students will be members of the inpatient consultation team for a major children's hospital and will actively participate in diagnosis and management of a large variety of infectious diseases. They will be scheduled for clinic time in the outpatient ID clinic and in the Pediatric HIV Clinic. Students are expected to read deeply about patients encountered and will be provided a case series with background readings to cover major pediatric infectious diseases. Teaching is performed on the wards and in the clinics. Students attend weekly case conference where they will present their cases to a broad audience of pediatric ID experts. Students are expected to attend the Case of the Week conference and other divisional conferences during the rotation. Literature review for all patients encountered is required. Short didactic presentations on pertinent topics may be assigned.

**MD 920 PE09 Medical Genetics, 4 credits**

Translation Phase, Elective, S/U

Course Director: Jaime Enrique Vengoechea Barrios, MD

This elective is for students who wish to broaden their knowledge of the field of Medical Genetics. Since our division is primarily an outpatient and consultative service, the student will spend most of their time in outpatient clinics. Students will spend time primarily in our General Genetics and Metabolic clinics. There are also opportunities to participate in specialty clinics, including the Down Syndrome clinic, Fragile X clinic, 22q11 Deletion syndrome clinic, Craniofacial clinic, Lysosomal Storage Disease clinic, and ophthalmic genetics clinic. Depending on a student's interests, there are opportunities to spend time with cancer genetics counselors or in one of our clinical laboratories (including clinical cytogenetics, clinical molecular genetics, and clinical biochemical genetics laboratories).

**MD 920 PE10 Neonatal/Perinatal Medicine, 4 credits**

Translation Phase, Elective, S/U

Course Director: Susie Buchter, MD

Students will be part of the NICU team which includes pediatric residents at both the PGY-1 and PDY-2 level, a Neonatal Nurse Practitioner, a Neonatology fellow, and the attending neonatologist. In addition to the described conferences, the student will have several patients to follow and present on daily rounds. Overtime, the student will be given patients of increasing complexity. Students will be given the opportunity to acquire experience in caring for the newborn patient and family through the role of an extern with supervised responsibilities. The student will function in the Grady Memorial Hospital NICU over a 4 week period. The duty periods will be largely during the day, but the student is expected to take 2-3 night shifts in order to have additional delivery room and NICU management experience.

**MD 920 PE11 Child Neurology, 4 credits**

Translation Phase, Elective, S/U

Course Director: Barbara Weissman, MD

The student who takes the Child Neurology elective will engage in all dimensions of Child Neurology. The student will develop an understanding regarding the application of Neuroscience to the Pediatric population. The student will experience a range of care the Child Neurologist delivers both inpatient and outpatient. The student will be exposed to the sub specialties of Child Neurology by working with the faculty of the Child Neurology Division.

**MD 920 PE12 Pediatric Nephrology, 4 credits**

Translation Phase, Elective, S/U

Course Director: Don Batisky, MD

Inpatient: Attend daily teaching rounds at 10am every day. Walk rounds on inpatients with faculty and fellow. Follow one or two inpatients. Perform the initial evaluation of children who require pediatric nephrology consultation. Outpatient: Attend clinic sessions (general nephrology, kidney transplant, chronic renal failure, hypertension). Make understanding of physiologic principles as well as psychosocial issues that result from these conditions.



**MD 920 PE14 Pediatric Pulmonary Medicine, 4 credits**

Translation Phase, Elective, S/U

Course Director: Dawn Simon, MD

On the first day, students will join the inpatient team on rounds at 10am in the Technology Dependent Unit. Following this, students will meet with Dr. Simon to create an individualized learning plan (email correspondence prior to the elective will help to ensure achievement of goals). Based on this, an individualized schedule will be made. Generally, this will include two weeks on the inpatient pulmonary services where the student will be assigned two to three patients whom they will provide direct care for with assistance by the residents and direct supervision by the attending. For the remainder of their time (two weeks), the students will be assigned to various ambulatory clinics including general pulmonary, sleep/apnea, cystic fibrosis, sickle cell lung disease, severe asthma, and aerodigestive clinics. Through these experiences, students will also have the opportunity to perform and interpret various pulmonary function tests. Additionally, during this time, students will perform pulmonary consultations with the attending and fellow team as well as attend flexible bronchoscopies. For students requesting an experience in pulmonary research, an individualized project will be developed ahead of time through discussions with the student such that meaningful research can be performed in the short period of the rotation.

**MD 920 PE15 Pediatric Gastroenterology & Nutrition, 4 credits**

Translation Phase, Elective, S/U

Course Directors: Patrice Kruszewski, MD

Students will work closely with the supervising resident, GI fellow or GI attending while on inpatient or out patient service. They will learn how to gather patient information including history, laboratory data, examine the patients, come up with their impression and plans, and then discuss with the resident or GI fellow. They are expected to write their daily progress notes which will be reviewed and receive feedback from an Attending or GI fellow. Students will attend GI conferences every Tuesday afternoon, where the GI fellows will present journal articles and do case presentations. Students also will attend once a month GI pathology rounds and GI radiology rounds and nutrition rounds along with entire GI faculty, along with pathologist or Radiologist and fellows and GI residents. During the sessions, different, challenging and interesting cases will be presented by GI fellows. Students also will attend GI didactic/board review sessions every Wednesday morning @ 8 am with other residents and GI fellows and GI Attendings. Students are required to give a presentation on an interesting case or GI topic each week during their GI rotation.

**MD 920 PE19 Child Abuse & Forensic Peds, 4 credits**

Translation Phase, Elective, S/U

Course Director: Verena W. Brown, MD

The purpose of this elective is to enable the student to learn the skills needed to identify child abuse. The rotation will include inpatient consults at both Scottish Rite and Egleston, outpatient clinic time at the Child Protection Centers at Scottish Rite and Hughes Spalding, attendance at Fulton and DeKalb County multidisciplinary team meetings and child fatality reviews, having "hands on" experience with DFCS case worker and also spending time with the state attorney's office. The student is expected to read books and articles on a core reading list.

**MD 920 PE22 Law and Medicine: The Health Law Partnership, 4 credits**

Translation Phase, Elective, S/U

Course Director: Robert Pettignano, MD

Students will observe and participate in advocacy and problem-solving on behalf of low income clients served by the HeLP Legal Services Clinic at GSU College of Law and at the Health Law Partnership at Children's Healthcare of Atlanta. Half the time will be spent working with law students at the HeLP Legal Services Clinic. Students will attend law clinic and legislative advocacy classes relating to poverty law and service to low income clients, participate in case rounds, and be paired with a team of law students to work on cases handled in the clinic and attend weekly supervisory meetings with law student teams. The other half of the time will be spent at the hospital-based office of the Health Law Partnership, where students may assist in client intake, observe court appearances, observe case acceptance meetings, and participate in other functions related to the business of serving the legal needs of low-income clients whose children are being cared for by Children's Healthcare of Atlanta.

**MD 920 PM25 Allergy/Immunology (Pediatric & Adult), 4 credits**

Translation Phase, Elective, S/U

Course Director: Gerald Lee, MD

This subspecialty elective provides experience in the evaluation and management of common clinical problems in allergy and immunology. The learner will assist in the diagnosis and management of asthma, rhinitis/conjunctivitis/rhinosinusitis, atopic dermatitis, contact dermatitis, urticaria, angioedema, anaphylaxis and adverse reactions to foods, drugs and stinging insects. Additional experience in immunodeficiency disorders, as well as experience in allergy skin testing, administration of allergen immunotherapy, performance and interpretation of pulmonary function tests, and performance of food challenges and/or drug challenges/desensitizations may also be provided. Outpatients will be evaluated by the student/resident under supervision of the faculty physician. In addition, it is expected that the learner will complete recommended readings, participate in selected on-line learning activities and complete both pre-test and post-test assessments.

**MD 920 R01 Rheumatology-Immunology, 4 credits**

Translation Phase, Elective, S/U

Course Director: Prateek Gandiga, MD; Katina Tsagaris, MD

Students will attend the outpatient rheumatology clinics held on Monday from 9:00am - 12:00pm & 1:00pm - 4:00pm & Thursday from 9:00am - 12:00pm. Lupus clinic is Tuesday from 9:00am - 12:00pm & 1:00pm - 3:00pm. They will interact with several attending, fellows, and residents. Students will observe a fellow or resident during patient evaluation and presentation to a faculty member who will subsequently interview and examine the patient. Students will have the opportunity to be part of the inpatient consultations working with the rheumatology fellow. The case will be presented to the faculty and discussed in detail with opportunities for questions. There will be suggestions for follow up articles from a variety of medical journals or other data that will provide greater knowledge and understanding of auto immune and other diseases.

**MD 920 RA01 General Diagnostic Radiology, 4 credits**

Translation Phase, Elective, S/U

Course Director: Colin Segovis, MD; Aine Kelly, MD

Students are given the opportunity to arrange their own rotation in the department to gain exposure to the areas of radiology in which they are most interested.

Rotation blocks are scheduled by the week with areas of training available in nuclear medicine, neuroradiology, abdominal imaging, pediatric radiology, musculoskeletal radiology, thoracic radiology, emergency radiology, mammography and interventional radiology. The students can be exposed to CT, MRI, PET-CT, fluoroscopy, digital radiography and digital mammography, ultrasound and interventional procedures.

**MD 920 RA10 Advanced General Diagnostic Radiology, 4 credits**

Translation Phase, Elective, S/U

Course Director: Colin Segovis, MD; Aine Kelly, MD

This elective is geared towards the student interested in radiology as a potential career choice. Opportunities for self-study in radiology and present topics in radiology to a group with feedback from a resident, fellow, or attending will be offered. Students will rotate in the department to gain exposure to the areas of radiology in which they are most interested. Rotation blocks are scheduled by the week in the following areas: nuclear medicine, neuroradiology, abdominal imaging, pediatric radiology, musculoskeletal radiology, thoracic radiology, emergency radiology, mammography, and interventional radiology. Students will prepare four power point case presentations.

**MD 920 RA12 Interventional Radiology, 4 credits**

Translation Phase, Elective, S/U

Course Director: Bill Majdalany, MD

This course provides the medical student with a more detailed exposure beyond the introductory/shadowing exposure to the practice of Interventional Radiology and Image Guided Medicine. The students will act as a sub intern as part of the interventional team. They will participate in the pre-procedure imaging and clinical evaluation of patients who will undergo minimally invasive image guided procedures. They will scrub on cases and observe basic image guided procedures, including: Peripheral venous access, Central venous access, image guided biopsies, femoral artery access, tunneled lines, port catheters, paracentesis, thoracentesis, cholecystostomy tubes, abscess tubes, peg tubes. Patient safety check, timeout, hand hygiene, and sterile prep will be reinforced during this rotation. Basic radiation safety (ALARA) and the importance of the safety check before every procedure will be introduced. By developing good clinical skills, the student will rapidly learn which patients need additional evaluation in the pre and perioperative period.

**MD 920 RA14 Pediatric Interventional Radiology, 4 weeks**

Translation Phase, Elective, S/U

Course Director: Anne Gill, MD

The focus of this elective is to educate medical students about the minimally invasive procedures they are most likely to encounter in a children's hospital; to educate medical students about pre, intra, and post-procedure care of pediatric IR patients; to further engage medical student interest in the practice of interventional radiology. The student will be able to actively participate in some of the more

routine procedures (uncomplicated central venous access, gastrojejunostomy tube exchange, and liver biopsies). Students will attend and be expected to present the patients for the following day procedures at the daily huddle (attending, fellow, techs and radiology nurses). The student will be able to round on the inpatients with the team and learn the items necessary to consider when performing inpatient consultations. Finally, the students will have the ability to attend clinic one afternoon per week with one of the pediatric IR attendings. Clinics are held on Tuesday and Wednesday afternoons in the Emory Children's Center Building.

**MD 920 RA16 Virtual Diagnostic Radiology, 4 credits**

Translation Phase, Elective, S/U

Course Director: Aine Kelly, MD Sarah Milla, MD

This course is geared towards both medical students interested in radiology as well as those pursuing other specialties. We want to expose students to the Radiology Department and its numerous subspecialties (chest, cardiac, interventional, emergency, neuro, GI/GU, mammography, nuclear medicine, musculoskeletal, and pediatric radiology). Each student will spend a week in chest radiology and a week in pediatric radiology, since these two subspecialties have broad applications. For the remaining two weeks, students will select two additional subspecialties to focus their time to best meet their needs and interests. The elective will consist of a mix of self-directed learning modules, virtual lectures, and case presentations. We will introduce general radiology topics that are expected to be useful during the remainder of students medical training and subsequent clinical practice. We hope that students gain better insight into the relationship between Radiology and referring services and the importance of communication, whether it is calling critical results or providing appropriate patient history.

**MD 920 RM01 Rehabilitation Medicine, 4 credits**

Translation Phase, Elective, S/U

Course Director: Hassan Monfared, MD

Students will learn the roles from a variety of health care professionals, including but not limited to physiatrists, physical therapists, occupational therapists, speech language pathologists, rehabilitation nurses and case workers. Students will learn to evaluate and manage patients who have been disabled due to impairments. The schedule for this elective will include both inpatient and outpatient rotation sites; the sites may or may not include: inpatient brain injury and stroke, general rehabilitation, outpatient pain management, outpatient orthopedic and spine rehabilitation, inpatient intensive care patients.

**MD 920 RSCH Elective-Research, 4 credits**

Translation Phase, Elective, S/U

Students, who have a particular interest in research, may fulfill no more than one elective during the Translation Phase by participating in a research project. The interested student will complete a research proposal, signed by the research mentor, with the description and objectives of the intended experience. This must be submitted to the Office of Clinical Education 90 days in advance of the start date. Approval by the Associate Dean of Clinical Education is required before the research commences.

**MD 920 SPEC Elective-Special, 4 credits**

Translation Phase, Elective, S/U

If students have an interest in an area where there is no elective offering, they can create a unique experience with a faculty preceptor. The interested student will complete a special elective proposal, signed by the preceptor, with the description and objectives of the intended experience. This must be submitted to the Office of Clinical Education 90 days in advance of the start date. Approval by the Associate Dean of Clinical Education is required before the elective commences. International experiences are eligible for consideration as a special elective.

**MD 920 SU01 General Surgery (Grady), 4 credits**

Translation Phase, Elective, S/U

Course Director: Christopher Dente, MD

You will take day general call on weekdays, have three elective operating days per week, two clinic days per week, and two formal faculty teaching rounds per week. Senior elective students will participate in all described activities of the service including in-house call as arranged; weekly M&M, textbook review, tumor conference; weekly Surgery Grand Rounds at Emory. The senior elective student may be asked to present a patient or topic at one M&M Conference during the rotation. Students will be assigned patients to work-up and follow, and will report directly to the senior house staff and faculty.

**MD 920 SU03 Trauma Surgery (Grady), 4 credits**

Translation Phase, Elective, S/U

Course Director: Per Grady Trauma Schedule

The student participates as a part of the Trauma Team at Grady Memorial Hospital, a state of Georgia Level 1 Trauma Center. The student is involved both in the acute resuscitative and operative management of patients who have experienced major blunt and penetrating trauma, as well as in the convalescent, in-hospital phase of the patient's recovery. The trauma team consists of junior, mid-level and senior residents, as well as a trauma fellow, all of whom are supervised by a rotating attending surgeon who is double boarded in General Surgery and Surgical Critical Care. The trauma services at Grady admitted roughly 3000 patients in the calendar year of 2013, with almost 25% being victims of penetrating trauma. The medical student will be expected to participate in active resuscitation and operative care of patients admitted to the service as well as follow several patients throughout their hospital stay. They will also be expected to learn the techniques of bedside procedures such as diagnostic peritoneal lavage, tube thoracotomy and central line placement. Weekly activities also include Trauma/ Critical Care Conference, Morbidity and Mortality Conference, Wednesday Teaching Conference and Emory General Surgery Grand Rounds.

**MD 920 SU04 Surgical ICU (Grady), 4 credits**

Translation Phase, Elective, S/U

Course Director: Aprul Grant, MD

The student's daily activities consist of receiving sign-out, attending morning report and participating in rounds (work, x-ray, and teaching) in addition to patient care management. The student is part of a Multidisciplinary team including the Attending Surgeon, Surgical Residents, Nursing Staff, Respiratory Therapist, and Pharmacist. Weekly, the student attends the Trauma/Critical Care Case Conference, Department

of Surgery M&M, and Surgery Grand Rounds. Students will present patients on rounds, assist residents with procedures and learn to perform invasive procedures that are commonly done in the SICU.

**MD 920 SU05 General Surgery (Emory A), 4 credits**

Translation Phase, Elective, S/U

Course Director: Jahnavi Srinivasan, MD

During the month, the senior will have the opportunity to participate in the entire scope of patient care activities, outpatient office visits, consultations, hospital admissions, operative procedures, and peri-operative care. The student is expected to do selected admission work-ups and to follow these patients throughout their hospital stays. During daily ward rounds with the house staff, the student is expected to contribute to all elements of the care of the surgical patient. He/she is expected to do guided reading on each surgical conditions observed and to participate in regular conferences of the Department of Surgery.

**MD 920 SU06 General Surgery (Emory B), 4 credits**

Translation Phase, Elective, S/U

Course Director: Scott Davis, Jr., MD

Students will have an opportunity to experience advanced GI Surgery, Esophageal Surgery, Minimally Invasive Surgery, Endoscopy.

**MD 920 SU07 Emory Transplant Surgery, 4 credits**

Translation Phase, Elective, S/U

Course Director: Ronald Parsons, MD

To familiarize the student with the complex evaluation, diagnostic and management problems encountered in solid organ transplantation. On either of the services, the student will be exposed and actively involved in the initial patient work-up, the process of selection for the transplant waiting list, donor organ harvesting, recipient operation and post-operative management (both in- and outpatient). Postoperative management will include immunosuppression. On either service, but especially on the Liver Transplant Service, there will be exposure to a wide variety of critical care problems, immunology, infectious disease, nutrition, psychiatric aspect of transplantation, and recovery from severe illness. The student will participate in all the surgical procedures.

**MD 920 SU08 Surgical Oncology, 4 credits**

Translation Phase, Elective, S/U

Course Director: Kenneth Cardona, MD

This elective provides an exciting opportunity to learn about multidisciplinary care of cancer. Students will work in the operating room, wards, and office to see and have direct involvement in inpatient and outpatient care. There are numerous teaching conferences and many opportunities for growth.

**MD 920 SU09 SICU (Emory), 4 credits**

Translation Phase, Elective, S/U

Course Director: Craig Coopersmith, MD

The critical care team consists of residents and fellows from the departments of surgery, anesthesiology, emergency medicine, and pulmonary medicine who rotate through the ICU by month, led by a critical care attending who will rotate by week.

The student will pre-round with the residents early in the morning to assess their patients and coordinate care with the various surgical teams, then present their patients to the critical care staff during rounds. Procedures are usually performed after rounds. Conferences include critical care lectures and surgical grand rounds weekly, and journal club and morbidity and mortality conferences monthly.

**MD 920 SU10 Otolaryngology, 4 credits**

Translation Phase, Elective, S/U

Course Director: Oswaldo Henriquez

The main objective of the 1-week virtual otolaryngology rotation is to provide a focused and curated insight intended for 3<sup>rd</sup> and 4<sup>th</sup> year students who are either planning on pursuing the specialty or are interested in exploring what otolaryngology offers. We have designed a 17-session curriculum spread out over 5 days that covers a broad range of topics highlighting common conditions treated by otolaryngologists and the medical and surgical treatments that they provide. Sessions will encompass themes from general otolaryngology and the sub-specialties of pediatric otolaryngology, rhinology & allergy, otology, facial plastic & reconstructive surgery, sleep medicine & surgery, and head & neck oncologic surgery. The curriculum will include structured online didactics consisting of lectures, case presentations, surgical videos, and student-run presentations. Students will be expected to read the entirety of "Primary Care Otolaryngology, 4<sup>th</sup> edition," a free 120-page eBook published by the American Academy of Otolaryngology – Head & Neck Surgery. Students will attend virtual grand rounds and resident didactics. For grading purposes, there will be brief mini-quizzes prior to didactics covering material from this book, and a final quiz on the last day of the rotation. Students will be create a 5-minute presentation on a relevant topic to be given on the final day.

**MD 920 SU11 Pediatric Surgery, 4 credits**

Translation Phase, Elective, S/U

Course Director: Jonathan Meisel, MD

The student will be an active part of the Surgical Service at Children's Hospital of Atlanta Eggleston Campus. He/she will participate in work and teaching rounds, conferences, clinics, and in surgery. In addition, he/she will join the attendings one day a week in their offices. Clinic days are offered 5 days per week. Students will attend a weekly didactic conference, a weekly clinically relevant radiology conference, Pediatric Surgery Grand Rounds, workbook reviews, staff rounds, and weekly Morbidity and Mortality conference. They will also attend a monthly Journal Club event and a monthly combined radiology-surgery-pathology conference.

**MD 920 SU12 Plastic Surgery, 4 credits**

Translation Phase, Elective, S/U

Course Director: Mark Walsh, MD

The experience is designed as a preceptorship with the student assigned to one or two of the attending plastic surgeons for the month. In this relationship with the attending, the students have the opportunity to participate in a full range of clinical activities: outpatient clinics, ward rounds, operating room experience, and minor surgical procedures. Emphasis is given to informal, one-on-one teaching; guided reading is required; sectional conferences are attended. The student is expected to be present at the beginning of the day whether on rounds, in clinic, or in the

operating room. The assigned attending will direct the student to interact with other members of the team. Some familiarity with elective cases is encouraged and assignments may be given investigating medical or surgical issues. Surgical technique will be reviewed and practiced.

**MD 920 SU13 Urology, 4 credits**

Translation Phase, Elective, S/U

Course Director: Akanksha Mehta, MD

This elective will introduce students to every aspect of urology through various conferences, seminars, outpatient clinics, inpatient rounds, and generous open time for operating room exposure with each attending.

**MD 920 SU14 Neurosurgery, 4 credits**

Translation Phase, Elective, S/U

Course Director: Gustavo Pradilla, MD

Students will be assigned to the neurosurgical service of one of the Emory University Affiliated Hospitals, depending upon the student's interest and the slots available. Students are expected to participate in all service activities, teaching conferences, etc. Patient work-ups and patient care responsibilities will be assigned to the student and will be supervised by neurosurgical staff and senior level residents. Reading material will be recommended and may include specific articles related to the pathological entities that the student encounters while on the service.

**MD 920 SU15 Cardiothoracic Surgery, 4 credits**

Translation Phase, Elective, S/U

Course Director: Jeffret Javidfar, MD

During the month, the students will become members of the cardiothoracic surgical team and will carry out complete work-ups on some of the more interesting inpatients. They will review with residents or the faculty member the pertinent aspects of the patient's preoperative assessment including cardiac catheterization, angiocardiology, echocardiography, computed tomographs, pulmonary functions, bronchography, esophagography, and the significance of these studies will be discussed. The students will be expected to attend the main part of the operative procedure, particularly of patients that they work up, and will be encouraged to closely follow the patient's postoperative course with the other members of the team. They will attend weekly rounds and conferences and meet once a week with a mentor. Emory University Hospital or Emory Midtown Hospital Cardiothoracic Surgery Services; CT Surgery Clinic one afternoon per week.

**MD 920 SU16 Pediatric Cardiothoracic Surgery, 4 credits**

Translation Phase, Elective, S/U

Course Director: Subi Shashidharan, MD

The pediatric cardiac surgical experience at Children's Hospital of Atlanta - Egleston Campus, occurs in a very busy pediatric cardiac surgical practice (approximately 900 operations per year). The surgical team is comprised of two attending surgeons and one pediatric cardiothoracic fellow. There are two operating rooms available each day of the week and ample patient volume. Students will have in-depth direct contact with the attending and residents, and will have opportunities to participate in all aspects of cardiothoracic surgical care. They will be exposed to the operations, as well as pre and post-operative care in the cardiac intensive care unit, ward unit,



and outpatient clinic. Students will also have access to an adult congenital cardiac surgical experience at Emory University Hospital which occurs within a very busy adult cardiac surgical practice. The adult congenital program operates on Thursdays and performs 50-75 operations per year. This is one of the largest adult congenital cardiac surgical programs in the country and continues to grow yearly.

**MD 920 SU19 Vascular Surgery, 4 credits**

Translation Phase, Elective, S/U

Course Director: Olamide Alabi, MD; Guillermo Escobar, MD

This experience will be primarily open complex vascular surgery at Emory University Hospital; clinic and operating room experience; weekly conference and Grand Rounds.

**MD 920 SU20 Surgical Anatomy, Embryology & Operative Techniques, 4 credits**

Translation Phase, Elective, S/U

Course Director: Barbara Pettitt, MD

This four-week elective is designed for the senior medical student who is planning to do a residency in surgery or obstetrics/gynecology. The course utilizes human cadaveric dissection labs, animal surgery labs, simulation and robotics labs, fresh tissue specimens, and detailed lectures and demonstrations to identify important surgicoanatomical entities and to provide the student with an opportunity for hands on surgical practice and training. This elective gives the student an excellent chance to learn, practice, and refine surgical skills and techniques in a safe, supervised, and closely monitored environment. It also teaches and reinforces anatomical knowledge, topography, and anatomical variations that are essential to practicing surgeons.

**MD 920 SU21 Oral/Maxillofacial Surgery, 4 credits**

Translation Phase, Elective, S/U

Course Director: Shelly Abramowicz, MD, DMD

The student will be an active part of the oral/maxillofacial surgical service at Grady Memorial Hospital. The service provides care to both outpatients and inpatients. The student will participate in working/teaching rounds, conferences, clinics and operating room activities. Students will have the opportunity to take maxillofacial trauma call per their level of interest. Students with special interests will be assigned to appropriate faculty and location.

**MD 920 SU30 Cardiothoracic Research, 4 credits**

Translation Phase, Elective, S/U

Course Directors: Allen Pickens, MD

Students are expected to participate in daily activities related to the overall laboratory, as well as become aligned with a specific ongoing project. The student will become acquainted with surgical instruments, surgical procedures and research protocols. The student will be expected to become familiar with instrumentation related to measurement of hemodynamic and cardiac function variables, blood gases, data acquisition and analysis of hemodynamic and cardiodynamic data using conventional indices of cardiac function and state-of-the-art indices of cardiac systolic and diastolic function. The student will gain exposure to the techniques used in cardiac surgery and cardiology, including cardiopulmonary bypass,

angiography, myocardial protection, and revascularization. The student will be asked to participate in scheduled laboratory meetings, and will be asked to present on the topic assigned as an in-depth topic. Pursuit of an in-depth topic will involve performing literature searches, working with laboratory personnel on development of research questions and methods, and frequent evaluation and interpretation of the data as it unfolds and evolves.

**MD 920 SU32 Emory Acute Care Surgery, 4 credits**

Translation Phase, Elective, S/U

Course Director: Wendy Greene, MD

Students will take day general surgery call at EUH on weekdays. Consults will be from both the emergency department and inpatient medical and subspecialty surgical services. In addition, they will participate in one outpatient clinic per week, which will allow them to participate in the ongoing postoperative care of the surgical patient. Students will be assigned patients to work up and follow and will report directly to the senior house staff and faculty. During this rotation, students will be exposed to the breadth of general surgery practice at a tertiary referral center. Senior elective students will participate in all described activities of the service including weekly M&M, teaching rounds; weekly Surgery Grand Rounds; and weekly resident research conference. The senior elective student may be asked to present a patient or topic at one M&M Conference during the rotation.

**MD 920 SU33 Emory Hepatobiliary & Hepatic Transplantation, 4 credits**

Translation Phase, Elective, S/U

Course Director: Shishir Maithel, MD

Rounds will be done in the morning with the surgical residents first and with the attendings later. The student is expected to know all the patients, but particularly those patients assigned to him/her. The student will have to read appropriate material pertaining to the rotation (which will be provided). He or she will scrub on a majority of the cases. The student will have to be available 24 hours a day, seven days a week during the rotation, as the availability of donors is unpredictable. The attending and/or residents will teach various invasive procedures, such as placement of lines, tubes, drains, etc. Depending on the work load, participation in the outpatient clinic will be desirable and encouraged.

**MD 920 SU34 Emory Thoracic Surgery, 4 credits**

Translation Phase, Elective, S/U

Course Directors: Jeffrey Javidfar, MD

During the month, the students will become members of the thoracic surgical team and will carry out complete work-ups on some of the more interesting inpatients, including those in need of lung transplantation. They will review with residents or the faculty member the pertinent aspects of the patient's preoperative assessment including imaging studies, pulmonary function tests, and the significance of these studies will be discussed. The students will be expected to attend the main part of the operative procedure, particularly of patients that they work up, and will be encouraged to closely follow the patient's postoperative course with the other members of the team. They will attend weekly rounds and conferences and are expected to spend time in clinic with the attending. Students may also accompany the team for organ retrievals.

**MD 920 SU35 General Surgery (VA), 4 credits**

Translation Phase, Elective, S/U

Course Director: Jonathan Pollock, MD

You will have four elective operating days per week, one clinic day per week, and one formal faculty teaching rounds session per week. Senior elective students will participate in all described activities of the service including attending and managing your own supervised clinic, participating as an assistant on operative cases, and managing patients on the ward and in the ICU. The senior elective student may be asked to present a patient or topic at one educational Conference during the rotation. Students will be assigned patients to work-up and follow, and will report directly to the senior house staff and faculty.

**MD 920 SU36 Colorectal Surgery, 4 credits**

Translation Phase, Elective, S/U

Course Director: Patrick Sullivan, MD

This elective provides an exciting opportunity to learn about multidisciplinary care of colorectal benign disease and neoplasms. Students will work in the operating room, wards, and office to see and have direct involvement in inpatient and outpatient care. There are numerous teaching conferences and many opportunities for growth.

**MD 920 SU37 Bariatric Medicine, 4 credits**

Translation Phase, Elective, S/U

Course Director: Arvinpal Singh, MD

In this elective, students will become familiar with surgical and nonsurgical management of obese patients. The special considerations in the pre-operative evaluation of obese patients will be addressed. Students will assist in the outpatient care of obese patients who have undergone bariatric surgery. They will also be exposed to obese patients undergoing non-surgical weight loss, including those on meal replacement programs. Students will attend support group sessions for obese patients and educational sessions. Students will also be expected complete a bariatric related project during their rotation in order to pass (e.g. PowerPoint talk, journal club, literature review, etc.).

**MD 920 SU38 Community Neurosurgery, 4 credits**

Translation Phase, Elective, S/U

Course Director: Cory Adamson, MD

Medical students will be assigned to one of our community-affiliated hospitals where they will be immersed in a busy neurosurgery clinical practice that covers a broad spectrum of neurosurgical conditions including neuro-oncology, spine, trauma, functional/pain, and peripheral nerve. Students will work one-on-one each day with a faculty neurosurgeon in the care of patients. Students will gain exposure to patients in outpatient, inpatient, ER, and operating room settings. Students will participate in the evaluation and treatment of these patients. To ensure a robust daily experience, students will rotate amongst three sites. Students will also be exposed to the delivery of medicine via telehealth. Students will participate in

didactic sessions including a weekly Brain School course and a weekly Emory Neurosurgery Grand Rounds. Faculty will work with each student to develop a clinical project to gain in-depth knowledge of an area of interest.

**MD 920 SU40 EUH Breast, Melanoma & Endocrine Surgery, 4 credits**

Translation Phase, Elective, S/U

Course Director: Michael Lowe, MD

In this elective, student provides an exciting opportunity to learn about the multidisciplinary care of breast cancer patients (B), cutaneous patients (melanoma, merkel cell carcinoma (M), and patients with endocrine neoplasms (E). Students will work in the operating room, wards, and office to see and have a direct involvement in inpatient and outpatient care. There are numerous teaching conferences and many opportunities for growth.

## ***MD/PHD PROGRAM REQUIRED COURSES***

**IBS 508R MD/PhD M1/M2 Journal Club, 1 credit**

Required, S/U

Course Directors: Anita Corbett, PhD, Paul Garcia, MD/PhD

The M1/M2 Journal Club is a one credit hour biweekly course required of all first and second year MD/PhD students in the *Foundation* curriculum. It is open only to MD/PhD students who are in the medical *Foundation* curriculum, and other regular MD students interested in the MSTP by permission. The course serves to integrate new students into the program, to infiltrate their medical studies with research and scientific thinking, and to introduce them to clinically relevant basic medical science research. This course exposes students to a diverse array of current scientific literature, including the ethics of publishing scientific research which is a regular topic and incorporated into the biweekly sessions. One session per year is dedicated solely to research and publication ethics and led by a member of the Emory Ethics Center. This course is offered as pass/fail based on participation and attendance. The journal club is directed by Anita Corbett, Ph.D., an R01-funded scientist and member of the training faculty who contributes substantially to many GDBBS and MSTP training and programmatic activities.

**MD 799R/IBS 799R MD/PhD Clinical Research Conference, 1 credit**

Required, S/U

Course Directors: Ann Chahroudi, MD/PhD, David Gutman, MD/PhD, Sean Stowell, MD/PhD

The MD/PhD Program's Clinical Research Conference (CRC) is a student led conference designed to provide students with exposure to translational medicine. Teams of graduate level students (3-4 per team) sign up to work with an Emory clinical faculty mentor, who are generally physician-scientists involved in clinical practice. The CRC serves several important goals: (1) To provide a forum throughout the academic year that brings students from all years of the program together as a group, fostering collegiality and program unity. (2) To expose students to a broad array of clinical and research specialties across the University. (3) To provide continued clinical exposure to those students in their graduate training years, and a direct view of how basic science integrates and translates into clinical practice. The students work with the mentor in his/her clinical specialty over

the course of 2-3 weeks to prepare for the conference presentation. Graduate-level students are required to participate in two such experiences annually. Each conference session is approximately 1 hour followed by dinner and a second session of the same length. In each session, there are three 10-15 minute student presentations in which students highlight a representative case or clinical experience with differential diagnosis followed by presenting the background disease pathophysiology, and one or more relevant research articles. The faculty mentor completes each of the sessions by describing his or her own career path, hurdles overcome in his/her career, or an interesting, informative issue regarding training, education and/or career choice. This course is offered for 1 credit hour and is graded on an S/U basis based on participation and attendance.

**MDPH 799R .002 MD/PhD Clinical Refresher, 1 credit**

Required, S/U

Course Director: Joanna Bonsall, MD/PhD

This course prepares MD/PhD students for the transition from graduate school to clinical clerkships. The course involves patient contact at Grady Memorial Hospital and Emory University Midtown Hospital and is directed toward refreshing students in physical examination, patient presentations, generation of a differential diagnosis, and its use in preparing the History & Physical and treatment plan. This course covers common diseases seen on the wards and the associated clinical presentations, disease processes, and patient management.

**MDPH 505R through MDPH 670R, 3-12 credits**

Required, Letter grade

*Course Director: The course director varies as a student and faculty member connect based on the students' research interest. There is no course director assigned to each of these research lab courses.*

Research rotations allow MD/PhD students to explore multiple laboratories in their chosen departments before they commit to their dissertation advisor and project. Students complete necessary training (laboratory and/or radiation safety; animal care training) at the start of the rotation. During rotations, students become familiar with the primary research literature and laboratory techniques of their chosen field and participate in laboratory meetings and departmental colloquia. Before each rotation, the student prepares a proposal. At the end of the rotation, the student completes a rotation summary, and the sponsoring faculty completes an evaluation of the student's performance. All documents are reviewed by the MD/PhD Program Directors before a grade is assigned.

# DOCTOR OF PHYSICAL THERAPY (DPT)

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The Doctor of Physical Therapy (DPT) degree program is a component of the Division of Physical Therapy, Department of Rehabilitation Medicine. A professional, physical therapy curriculum was offered first by the Division of Physical Therapy in 1975 as a post baccalaureate certificate program and then changed to a professional level, master of physical therapy degree program in 1983 and to the doctor of physical therapy degree in 2001. The Division of Physical Therapy includes educational, research, and clinical programs. The mission of the division is presented below with objectives and curriculum information for the doctor of physical therapy degree program.

## **Accreditation**

The Doctor of Physical Therapy program is accredited by the Commission on Accreditation in Physical Therapy Education (CAPTE). CAPTE is an accrediting agency that is nationally recognized by the US Department of Education (USDE) and the Council for Higher Education Accreditation (CHEA).

## **Mission**

The mission of the Division of Physical Therapy is to “Cultivate well-being of individuals and global communities through exemplary leadership in physical therapy education, discovery, and service.”

## **The Doctor of Physical Therapy degree program is designed to:**

1. Provide study and competence in promoting optimal human movement and function based on the biological, behavioral, physical, and medical sciences, including:
  - a. Understanding and applying concepts and principles of movement science.
  - b. Using critical thinking and problem solving in planning, implementing, and assessing both clinical and scientific practices.
2. Prepare proactive leaders in the multifaceted roles of clinician, educator, researcher, administrator, and consultant in individual, group, and community contexts.
3. Model and instill the values that promote professionalism and caring.
4. Facilitate student commitment to independent thinking and lifelong learning and to student realization of the intrinsic rewards of these attributes.

Students obtain basic competencies essential for physical therapy practice and for developing leadership skills within the profession. In addition, students in the DPT program conduct a research project and study in advanced specialized areas.

The practical application of physical therapy skills is based on a concept of health care with three major characteristics. First, the welfare of the client is the basis of health care. Second, health care is dynamic, and changes are constantly being made to incorporate advances in methods and in delivery in care. The scope of health care today includes the promotion of health and an emphasis on the rights and responsibilities of clients. Third, the quality of health care is dependent on the process of delivery of service in the health care system and the extent to which individual needs of the patient/client are met. Optimal functional movement is the goal of physical therapy.

Students develop competencies in the professional program using the problem-solving process to demonstrate expertise in applying a theoretical framework of basic, behavioral, social, and medical sciences as the basis for his/her practice of physical therapy. Competency is demonstrated by:

1. Using the interpersonal communication process with patients, healthcare providers and staff; including an active recognition of the rights and dignity of the individual in planning and administering programs of care.
2. Using the teaching-learning process in interactions with patients, healthcare providers and staff.
3. Examining and evaluating patients, and establishing an appropriate plan of care.
4. Providing appropriate therapeutic services.
5. Participating in the administrative responsibilities of a clinical physical therapist.
6. Using the basic principles of research in the critical analysis of concepts and findings generated by self and others.
7. Consulting with others in providing comprehensive care.

The educational program promotes attainment of the foregoing competencies in the following ways. First, the problem-solving approach is incorporated throughout the curriculum and used to identify and affect the needs of the client and the health

care system. The physical therapist identifies and resolves health care problems through program planning that relates to an individual client, a specialty area, and the total health care system. This problem solving requires consideration of the theoretical framework of the basic, medical, and psychosocial sciences, in addition to use of process skills relating to the practice of physical therapy. In each of the above contexts, the physical therapist identifies a need and alternative program plans for meeting that need, selects the most appropriate plan, implements the plan, and then evaluates and modifies the plan as necessary. The client, the physical therapist, other health professionals and the health care system all are involved and must be considered in solving specific movement problems.

Second, interpersonal communications including an active recognition of the rights and dignity of the client is emphasized in all aspects of the program. Study and practice in reflective listening occurs initially. Then these concepts and skills are applied throughout all classroom and clinical experiences. Opportunities to practice interpersonal skills with patients from multiple cultures are embedded throughout the curriculum.

Third, the teaching/learning process is demonstrated and applied in all contexts, especially patient and colleague education. Also, the learning process is presented as it applies to the student's own learning, both during and after completion of the program. Continued learning is stressed as essential to professional development and evidence-based practice.

Fourth, the area of expertise of the physical therapist is the movement function or dysfunction of patients/clients and/or the use of therapeutic approaches to beneficially affect function. Generally, physical therapists are specialists in motor behavior, including the neuromusculoskeletal, pulmonary and cardiovascular, and cognitive systems. Basic content areas, which provide theoretical basis in the medical sciences, are:

- 1) Human growth and development,
- 2) Normal structure and function,
- 3) Disturbances in homeostasis as manifested by various pathophysiology,
- 4) Related medical and physical therapy management,



5) Ethics, professionalism and health services management.

Knowledge and skills in these areas are naturally sequenced, i.e., birth to aging, function to dysfunction, and general to specific. Organization of information related to the medical and clinical sciences is based on the homeostatic model and clinical problems presented by the patient/client as a result of disturbance of homeostasis. Accordingly, content is organized by clusters of clinical problems rather than by medical discipline or physical therapy technique. Also, integration of knowledge from the past, to present, to future is stressed. Learning of specific content areas is integrated, i.e., each content area with others, classroom experiences with clinical experiences, and content areas with the process skills.

Fifth, the scientific inquiry process is applied in evidence-based practice and clinical research. Evidence-based practice underlies the clinical courses. Working in small groups with a faculty mentor, students complete an original research project.

Finally, in addition to skills discussed above, administration, and consultation are observed and practiced by the student in both the clinic and the classroom. The problem solving, teaching-learning, and interpersonal processes are used as the student masters concepts and strategies associated with each area. Also, the student plans, implements, and evaluates a project that is designed to meet the need of a specific administrative or consultative agenda or clinical or community setting.

The doctor of physical therapy degree curriculum is approved and accredited by the Commission on Accreditation in Physical Therapy Education (CAPTE). , CAPTE is an accrediting agency that is nationally recognized by the US Department of Education (USDE) and the Council for Higher Education Accreditation (CHEA).

<http://www.capteonline.org>. Graduates are eligible to take the licensing examination required for the practice of physical therapy.

## ***FACULTY***

**Interim Program Director:** Tami Phillips, PT, DPT, MBA

**Associate Director:** *vacant*

### **Professor**

E. Field-Fote, B. Greenfield, M. Johanson, L. Ting, S. Wolf

### **Associate Professors**

S. Blanton, P. Bridges, S. Pullen

### **Assistant Professors**

K.L. Bishop, M. Borich, , B. Davis, J. Elkins, K. Geist, T. Kesar, P. Nichols, T. S. Penna, Phillips, S. Pullen, B. Rogozinski, A. Rossi, D. Shah, L. Ting, L. Zajac-Cox

### **Instructors**

R. Nyberg, M. Wooden

### **Senior Associate**

D. Spencer

## ***ADMISSION POLICIES AND PRACTICES***

### **Admission Requirements**

Admission requirements are reviewed and revised annually. Applicants should verify current requirements with the Division of Physical Therapy and should be sure to use the current application materials. The following requirements must be satisfied for admission:

1. Applicants must hold a baccalaureate degree from an accredited college or university at the time of matriculation.
2. Successful completion of eight (8) semester hours in human gross anatomy and human or mammalian physiology with lab must be completed within five years of matriculation. A minimum of four semester hour equivalents must be completed in each course. Courses with laboratories are required. The anatomy course must include a lecture component on human anatomy and a laboratory requiring dissection of mammalian specimens or study of prosected mammalian specimens. Topics that must be covered include structures of the following systems: musculoskeletal, respiratory, cardiovascular, and the peripheral nervous systems. Also, study of the gastrointestinal system is recommended. The physiology course must be accompanied by laboratory studies. If a laboratory is not offered with the physiology course, a biology laboratory may substitute for the laboratory requirement providing the biology laboratory includes the appropriate content. The physiology course or the biology laboratory course should cover all the following topics, although four of the five topics are acceptable: cell structure and function; cardiovascular, respiratory and digestive function; excretory function; and reproduction and development. No exceptions are permitted. Other advanced courses in the same area completed within three years of matriculation (such

as histology, functional anatomy, and some kinesiology courses) may be used to maintain the currency of that requirement. Acceptable courses are determined on an individual basis.

3. Applicants must have successfully completed a 3 semester hours of statistics within five years of matriculation. The course should cover both parametric and nonparametric statistics. Use of statistical techniques with data sets, interpretation of statistical results and computer interaction in data analysis are strongly recommended.
4. Applicants must have successfully completed eight (8) semester hours of Physics (Physics I & II) with labs within five years of matriculation. The course(s) should include a laboratory and the topics of mechanics, sound, light, wave motion, heat, electricity, magnetism and nuclear physics. The course does not have to be calculus-based.
5. Courses taken as prerequisites for enrollment may not be taken on a Pass/Fail basis.
6. \$65.00 supplemental application fee. [Pay online at our website,](#)
7. All applicants must take the Graduate Record Examination (GRE). We do not accept GRE scores that were taken more than five years prior to applying. A minimum of 297 points on GRE is required for a composite Verbal and Quantitative scores. A minimum of 3.0 is required for Analytical Writing score.
8. Three letters of recommendation (one must be from a Physical Therapist and one from a Faculty). The third letter may be a reference of your choice – a professor, lab instructor, coach or supervisor/employer.
9. Two essays addressing the following topic/questions (a) Autobiography (b) Describe how specific attributes of Emory University's DPT Program align with your professional goals and personal attributes.
10. Hours of PT experience – We strongly encourage experiences in multiple physical therapy settings e.g. acute care, outpatient, rehabilitation, pediatric, geriatric, etc. For a physical therapy experience in a setting to be counted, a minimum of 30 hours must be completed in that setting.
11. Applicants must have experience using the following computer applications: word processing, communications, database and statistics. Experience may be gained through formal computer courses or practical experience with the above applications.
12. Applicants in the final stage of admission are asked to visit campus for a formal interview.
13. Approval of admission is made by the Physical Therapy Admissions Committee and faculty.
14. Compliance with the [Technical Standards](#) of the Division of Physical Therapy.

15.Enrollment is limited and competitive; all qualified applicants may not be admitted. The application deadline is 11:59 pm October 15, 2019.

### **Admission, Regulations and General Requirements**

An applicant's registration and class attendance are considered his or her agreement to comply with University rules and regulations as published in the manuals and other official publications, including amendments and revisions made during the student's continued enrollment.

### **Application**

Admissions contact information and supplemental application:

The Physical Therapist Centralized Application Service (PTCAS).

Visit [www.ptcasinfo.org](http://www.ptcasinfo.org) for detailed information and [www.ptcas.org](http://www.ptcas.org) for the application. The PTCAS phone number is 617-612-2040.

### **Emory University Doctor of Physical Therapy Program**

Website: [www.emorydpt.org](http://www.emorydpt.org)

Phone number: 404.712-5660

### **International Students**

Additional information for international applicants and students can be found at:

<http://www.emory.edu/ISSP>

Important information about student insurance can be found at: can be found at:

[http://studenthealth.emory.edu/hs/new\\_students/health\\_insurance/index.html](http://studenthealth.emory.edu/hs/new_students/health_insurance/index.html).

### **Requirements for International Applicants:**

#### **Credentialing**

All transcripts must be translated into English and sent to credentialing service to determine applicant has the equivalent of an American bachelor degree.

Credentialing must be sent directly from the credentialing service to:

Division of Physical Therapy

1462 Clifton Rd N.E. Suite 312

Atlanta GA 30322

Phone: (404) 712-5660 (General Info)

Phone: (404) 727-4002 (Admissions)

Email: [PT Admissions](mailto:PT_Admissions)

Credentials will not be accepted if sent by the applicant.

**English Testing**

Applicant must take TOEFL and TSE (test of spoken English) given by Educational Testing Services.

**Financial Certificate**

Allied Health will send all international applicants a financial certificate form. This form is used to certify that the applicant has adequate funds to pay for entire duration of program. Applicant will not be able to secure US Financial Aid loans.

**Visa**

I-20 form will be sent to applicant to secure an F1 Visa (student visa).

Credentialing Service address:

World Education Services

P O Box 5087

Bowling Green Station

New York, NY 10274

[info@wes.org](mailto:info@wes.org)

**Notice of Acceptance and Intent to Matriculate**

The applicant will be notified of acceptance or rejection as promptly as possible after the admissions committee takes action on his or her application. Applicants are required to notify the program by email or written communication of their intent to accept the position offer.

***ADMISSION REQUIREMENTS FOR DPT DUAL DEGREE PROGRAMS*****DPT/PhD**

Students in the DPT/PhD Program are recruited from exceptional students enrolled in the Emory DPT program. Students are encouraged to identify a research sponsor/advisor prior to applying to the PhD program. Interested students make formal application for admission to Georgia Tech during their 2nd year of the DPT.

**DPT/MBA**

Applicants who are interested in a dual degree program must apply to and be admitted by both of the programs. Students can also apply in their first year of the DPT program to the business school for a dual degree program. Please go to Prospective Applicants for additional details on the admissions process.

## **DPT/MPH**

- Students must apply to and be accepted into each school separately in order to be eligible for a dual degree.
- All applications to Rollins are completed through the Schools of Public Health Application Service (SOPHAS).
- For instructions on applying to the Emory University School of Medicine, [click here](#).
- For instructions on applying to Rollins, [click here](#).

## **DPT/MA in Bioethics**

Application to each program must be made separately. Upon acceptance to both programs, students will fulfill the requirements of the programs in parallel. Dual Degree Applicants should be mindful that evaluation criteria for admission will be the same as for each program alone. Students accepted into the dual-degree program will be notified of acceptance by both schools. If students are accepted into one school but not the other, they may enroll in the school that has accepted them, but not as a dual-degree student. Upon admission to the dual-degree program, students should consult with the appropriate program director of each school to plan their courses of study. Please go to Future Students for additional details on the admissions process.

## ***CREDIT POLICY FOR PRIOR EDUCATION AND TRAINING***

No credits from prior education and training may be applied to the Doctor of Physical Therapy program.

## ***ENROLLMENT POLICY***

To be enrolled in the program, students must have submitted an application, completed an interview and been selected for admission to the program by the Admissions Committee. Students must also have completed all prerequisites and obtained an undergraduate degree prior to enrollment in the program.

## ***ATTENDANCE***

Due to the professional nature of the curriculum, and the types of activities and related content in each course, attendance at all classes is expected of each student. If you are ill and/or cannot attend, please contact faculty teaching the

classes by email or call the office at 404-712-5660 and leave word (we have voice mail for your convenience). If emergencies arise and you have knowledge of pending absences, you should discuss such absences with the program director, your advisor and/or 29 individual course instructors in order to make arrangements to make up your academic work. Most of the time, re-creation of a seminar, discussion, laboratory experiences, or clinical experience is not possible. This policy also applies to classes the day before or the day after vacations or holidays.

**NOTE: IN INSTANCES OTHER THAN UNFORESEEN ILLNESS OR EMERGENCY, PERMISSION FOR ABSENCE FROM CLASS MUST BE OBTAINED BY EMAIL, AT LEAST TWO WEEKS IN ADVANCE FROM EACH INSTRUCTOR.** Failure to meet these responsibilities may seriously compromise your academic standing. Also, the faculty is not responsible for providing information or learning experiences in cases of student absence.

### **Punctuality**

In addition to attendance, it is considered part of professional duty and is the responsibility of the student to arrive on time for classes, small group sessions, clinical rotations, scheduled examinations, and all other events related to the DPT program.

### **Student Attendance/Absence During Clinical Affiliations**

The design of the clinical education experience promotes development, practice, and assessment of the student's ability to provide physical therapy services in a variety of settings. One critical aspect of the professional responsibility for service provision is being present and on time. The policy presented below is consistent with expectations in an employment situation.

- 1) **WORK WEEK:** The student's schedule will be determined by the service needs of the clinical site. For the most part, it is similar to the clinical instructor's (CI) schedule in terms of hours/day; days of the week scheduled, etc. No assumptions should be made about working 8:00 a.m. to 5:00 p.m., Monday through Friday. The student's workday will continue until responsibilities are met.
- 2) **HOLIDAYS:** Clinical services in many settings are provided on holidays. No assumptions should be made about having a holiday "off". If the CI is scheduled to provide services on a holiday, the student may be scheduled to work. Student status does not allow special privileges regarding holiday work. Also, the day after a holiday (e.g., the Friday after Thanksgiving) may not be a holiday.
- 3) **ABSENCES:** The ONLY PERMISSABLE REASONS for absence are personal illness or death of a family member. If the student is ill and cannot work, or called away for funeral services, the Clinic Coordinator of Clinical Education (CCCE)/CI must be notified immediately. It is your responsibility to find out if the facility has a specific policy that must be followed in case of an unforeseen absence. For example, one may require a phone call to the CCCE and another may prefer one directly to the CI. The time off MUST be made up and this scheduling is at the discretion of the CI. In certain instances, during a long-term internship only, if only one day is missed and the

student's clinical performance is meeting criteria, the CI may decide that a make-up day is not necessary. The student's clinical education advisor, Patricia Bridges (Director of Clinical Education - DCE), or Tami Phillips or Donna Smith (Assistant Directors of Clinical Education - ADCE), must be advised by the student of any absence due to illness or bereavement, and the related make-up plan. The student is responsible for providing this information to their clinical education advisor within two days of the absence. Under no circumstances should the DCE/ADCE find out about absences after the clinical ends.

- 4) SPECIAL REQUESTS: Clinic absences should not occur except as described in Section #3. However, if there is a special circumstance, the student must submit a request in writing to the DCE or ADCE **PRIOR** to discussing it with the CCCE/CI. The DCE/ADCE will determine if the special request merits further consideration and may give approval to negotiate this special need with the CCCE/CI. Approval from the DCE/ADCE is only permission to discuss the request with the CCCE/CI, not approval for the proposal. The CCCE must be consulted in addition to the CI regarding special requests. Approval is at the discretion of the CCCE/CI, and if obtained, the student must communicate the result to the DCE/ADCE within two days of the approval. Time away from the clinic **MUST** be made up and this scheduling is at the discretion of the CI.
- 5) If the special request involves a professional development activity and if only one day of clinic is missed, the CI may determine the necessity of making up the missed day if the student's performance is meeting criteria.
- 6) Compliance with this policy is represented on the clinical evaluation form in the behaviors for administration competency – "Adhere to school/facility policies and procedures."
- 7) Any questions about the policy and related procedures should be addressed to the DCE or ADCE.

## ***STANDARDS OF PROGRESS***

### **Academic Regulation regarding program completion:**

1. Successful completion of a residency totaling 9 semesters, which includes academic study and 30 weeks of full-time clinical education.
2. Completion of all semester hours of work with an overall average of B. A student must have a cumulative grade point average of 3.0 or higher in order to graduate from the program.
3. A grade of B or above must be earned in each individual course. Note: Physical Therapy requires mastery of both academic and psychomotor clinical skills, therefore, an exception to this rule exists in the following clinical courses: Fundamentals of Measurement (DPT 710), Introduction to Therapeutic Interventions (DPT 740), General Medical Conditions (DPT 755), Musculoskeletal



Rehabilitation (DPT 800), Pediatric Rehabilitation (DPT 815) and Adult Neurorehabilitation (DPT 810), where ALL practical examinations must be passed with a minimum score of 80% to successfully pass the course, regardless of the student's cumulative average for that course. If a student fails a practical examination, he/she could be offered a retest at the discretion of the course instructor(s). If the student fails the final practical, the retest is offered no more than 4 weeks after the initial practical examination. If the student fails the retest, this constitutes failure of the course, and at that point, the student is placed on academic probation. Any subsequent examination is considered a remediation. In addition, students need to attain a cumulative average of 80% or better overall in the written examinations within General Medical Conditions (DPT 755), Musculoskeletal Rehabilitation (DPT 800), Pediatric Rehabilitation (DPT 815) and Adult Neurorehabilitation (DPT 810).

4. Students may continue in a course if a single written examination score falls below the minimal score of 80%, but the average examination score for the entire course must be at or above the minimal score to pass the course. A student who scores less than 80% on any examination must contact the course director to discuss areas of deficiency. Failure to do so will negatively affect any potential decision for future remediation opportunities.

5. Successful completion of each clinical rotation as defined in course materials.

6. Progression through the curriculum is dependent upon successful completion of all courses in sequence and upon recommendation by the Faculty each semester. Any changes in sequence must be approved by the Faculty.

All grades are determined by the following criterion-based system:

90-100%	A
80-89%	B
70-79%	C
60-69%	D
59% or below	F

### **Academic Regulation regarding remediation:**

The student who achieves a final course grade below the minimal passing score of 80% may qualify for remediation. Should a decision be made to provide an additional opportunity, the student will be placed on academic probation. The course instructor then completes a Record of Academic Probation Recommendation Form. (see section on Academic Deficiency and Probation).

In regards to remediation opportunities, the following policies are observed:

1. Remediation opportunities are offered at the discretion of the course director.

2. To qualify for remediation, the student MUST show evidence of having contacted the course director during the course to discuss any performance that failed to meet minimal standards. The course instructor completes a Record of Academic Deficiency Counseling Form whenever the student is counseled regarding deficiencies in academic work. (see section on Academic Deficiency and Probation).
3. This policy for remediation will also apply to students who fail to pass a practical examination in any course that includes practical examinations.
4. Remediation of a course may involve re-taking a written examination, an oral or practical examination, or the completion of a remediation project.
5. All remediation activities must be completed within the timeframe defined by the course director, and before the end of the following semester.
6. Students will receive a course grade of "IP," "In Progress," until successful remediation is completed.
7. For remediation to be considered successful, the student must attain the minimal passing score of 80% on the remediation activity (see #4 above). As a consequence of having to remediate, the highest grade attainable for the course will be a "B." All questions regarding examination and grading should be addressed directly through a meeting with the student and the course director.
8. A student is allowed only one opportunity beyond the initial attempt to satisfactorily complete the requirements for a given course. Students who fail a remediation examination will fail that course.
9. Students must pass all courses to progress in the program. Students who fail a course must repeat and pass the course before progressing in the program.
  - a. Permission to repeat a course is contingent upon approval of the faculty.
  - b. Repeating a course will require the student to take a leave of absence for one year, as the sequence of the program is inflexible and progression is contingent upon passing all subsequent coursework.
  - c. A student who is offered the opportunity to repeat a course will be required to attend all concurrent coursework and complete all examinations and assignments, even though these courses were

already successfully passed. This is done in the best interest of the student, as course information is updated each year.

10. There are concurrent and cumulative limits to the number of opportunities offered to a student for re-examination to meet criteria. There is a limit, per semester, to the number of courses in which a student is allowed to be re-examined. There is also a limit to the cumulative total of course re-examinations that are allowed during the program.

- a. No more than **TWO course re-examinations are allowed per semester.**
- b. No more than a cumulative total of **FOUR course re-examinations are allowed throughout the entire program.**
- c. Cumulative totals to the number of remediation opportunities continue to apply to students who must repeat coursework.

### **Consequences for Violation of an Academic Regulation**

A student may be placed on academic probation or dismissed from the program at any time in the curriculum when academic or other performance requirements are not met. If any one of the above conditions are not met or exceeded, the student situation will be first brought before the Academic Affairs Committee for consideration of dismissal from the program. The student will be invited to make a statement at that time.

Dismissal from the program may result if a student:

1. Fails a repeated course.
2. Exceeds the total number of remediation opportunities per semester or per program.
3. Violates the Honor Code.

The recommendation of the Academic Affairs Committee is based on the overall performance of the student within a specific course, as well as throughout the overall program of study. The recommendation of the Academic Affairs Committee is brought to the Division of Physical Therapy Faculty for the final decision. The full-time faculty will meet in session to consider the recommendations of the Academic Affairs Committee. If a majority of the full-time Physical Therapy Faculty votes to dismiss the student, the Director of the Division of Physical Therapy will make a recommendation to the Dean of the School of Medicine that the student be dismissed. The recommendation will specify the reasons for dismissal, including the regulation or standard violated.

Should the student wish to appeal this decision, a formal appeal in writing must be first sent to the Director of the Division of Physical Therapy within 48 hours of notification of dismissal. Appeals will be reviewed and voted on by the Faculty. Subsequent appeals will be directed directly to the Dean of the School of Medicine. The Dean will make any final decisions regarding dismissal of the student.

## **COURSE EVALUATIONS**

Students are required to fill out course and instruction evaluations for every course (including clinical science and clinical research). The evaluation forms are opened on Blackboard two weeks prior to the end of the semester and remain open for two weeks after the end of the semester. Obtaining feedback from students is extremely important to the development and continued excellence of the program and of the faculty. It is also an opportunity for students to practice providing constructive feedback. You must complete the evaluations in order to get your final grade for the course and in order to graduate.

## **Degree Requirements**

Students must complete a residency of nine, continuous semesters of academic study, including thirty weeks of full-time clinical education. Throughout the program, the student devotes a minimum of thirty hours each week to classroom, laboratory, and clinical activities. Students are advised against employment during enrollment.

Students must successfully complete all courses in sequence. Satisfactory performance includes: completion of one hundred and forty-four semester hours with an overall average of B or above (a grade of B or above must be earned in all courses); successful completion of each clinical assignment with a grade of B or above; and recommendation for continuation each semester by the Academic Affairs Committee and faculty. For all degree programs, the majority of required credits for graduation must be earned at Emory University School of Medicine.

## ***TUITION AND FEES***

The cost of attending Emory University includes tuition and other academic charges, living expenses, and incidental expenses, such as textbooks and supplies. Charges for summer semester are the same as for any other term unless specified otherwise.

As costs continue to rise throughout the economy, the University anticipates that educational costs will be adjusted from time to time. The University reserves the right to revise tuition and other charges when necessary.

### **Tuition and Fees for 2021-2022 (per semester)**

Tuition for Physical Therapy Program	\$12,867
Activity Fee (fall and spring semesters)	\$98
Activity Fee (summer semester)	N/A

### **Tuition and Fees for 2021-2022 (per semester)**

Athletic Fee (fall and spring semesters)	\$150
Athletic Fee (summer semester)	\$59
Mental Health and Counseling Fee	\$94
Immunization and Disability Fee	\$125
Technology Fee	\$85
Clinical Administrative Fee	\$75
Transcript Fee (1 <sup>st</sup> semester only)	\$70

The Immunization and Disability Fee covers the cost of administering the immunizations, the PPD tuberculin skin tests, and the care and treatment of students with positive PPD conversions, as well as the cost of long-term disability insurance. Tuition charges cover tuition, use of all facilities of instruction, general medical and health services, and library services.

If a student remains in school and drops a portion of work after the last day for change of courses, the student will not receive a refund for the work dropped. Students who have completed course and residence requirements for their degree but remain in residence to complete special projects (without obtaining credit) or to prepare for examinations must register at the beginning of each semester. Such registration requires a \$500 fee.

### ***REFUND POLICY***

Students who withdraw from the curriculum for any reason may qualify for a tuition refund on a semester basis. Tuition refunds will be calculated as follows:

<b>Withdrawal during</b>	<b>Charge</b>	<b>Credit</b>
First week (through Drop/Add)	0%	100%
Second week	20%	80%

Withdrawal during	Charge	Credit
Third week	40%	60%
Fourth week	60%	40%
Fifth week	80%	20%

There will be no refunds after the fifth week of any semester.

### **Audit Courses**

The same charge for credit courses applies. Audited courses may not be established for credit by examination nor may audit courses be transferred to credit courses after the first week of classes.

### **Deferred Payment/Emory Payment Plan**

The Emory Payment Plan is available to qualified students who wish to divide tuition fees into scheduled payments. A \$60 service fee is charged to participate in the Emory Payment Plan. The fee is added to the second payment.

Instructions are given for deduction of loans and for University-administered scholarships in listing the amount due, which is to be paid in four installments each semester according to the Emory Payment Plan Schedule.

***To set up a payment plan***, contact Student Financial Services at (404)727-6095, visit [www.emory.edu/studentfinancials](http://www.emory.edu/studentfinancials), or sign up in OPUS through the Student Center.

## **FINANCIAL ASSISTANCE**

Prospective students who need financial assistance should begin early to investigate aid available to them. They should complete the Free Application for Federal Student Aid (FAFSA) as soon as possible. The FAFSA can be accessed on the web at [www.fafsa.ed.gov](http://www.fafsa.ed.gov). The Emory University school code is 001564. Students begin the Doctor of Physical Therapy program in the summer semester, which is the last semester of the financial aid year. Students beginning in Summer 2020 must complete a 2021-2022 **FAFSA** for Summer 2020 as well as a 2021-2022 **FAFSA** for Fall 2020, Spring 2021 and Summer 2021.

Further information regarding financial assistance for students in the Doctor of Physical Therapy Program can be accessed at <http://med.emory.edu/education/financial/dpt/index.html>.

All matriculating students with loans must complete a mandatory online entrance interview as well as an exit interview upon graduation.

### **Scholarships**

There are a limited number of scholarships for physical therapy students based on financial need. Eligibility is based on information from your FAFSA, and no additional application is required. A few merit scholarships may be awarded to incoming students based on merit, and these do not require an application, either.

### **Health Professions Tuition Loans**

Students are eligible to borrow from the University to assist in paying tuition. No additional application is required.

### **Federal Loans**

The Office of Financial Aid will determine a student's eligibility for federal direct Stafford Loans. Students who wish to accept those loans will be given instructions on how to complete the loan promissory note when they receive their financial aid award letter. Students interested in the federal direct GradPLUS Loan for additional funds should wait until they receive their initial award letter, then complete a GradPLUS Request Form that can be downloaded from the Office of Financial Aid website.

### **Private loans**

Students who need additional funds beyond the amount awarded by the Financial Aid Office may apply for private student loans. These loans require the borrower to undergo a credit check, and the interest rate is determined by the student's credit score. More information about these and all other student loans is available on the Financial Aid Office website at

<http://www.studentaid.emory.edu/types/loans/private.html>

### **Veterans Benefits**

Students eligible for Veterans Administration Benefits should notify the Office of Financial Aid and coordinate this Information with the Office of the Registrar. Also, Emory participates in the Yellow Ribbon Program for post-9/11 veterans. One Physical Therapy student with 100% eligibility for post-9/11 benefits will receive \$6500 per year in addition to any other veteran's benefits. For additional information, contact the Associate Director of Financial Aid & Scholarships at the School of Medicine at (404) 727-5683.

### **Other Scholarships**

Some professional organizations for people in the health care industry offer scholarship opportunities. Students can research these programs by searching on the web, by talking to faculty members in their academic program and by referring to the scholarship information in the Orientation Manual. In most cases, a separate application would be supplied by the sponsor of the scholarship.

# ACADEMIC CALENDAR

## Class of 2021– 2024

June 2nd, 3rd, 4th 2021  
 June 7, 2021  
 July 5<sup>th</sup> , 2021(Mon)  
 August 9<sup>th</sup> (M)- Aug 16th (Mon)  
 August 17(Tues)- August 22, 2021  
 August 23, 2021  
 September 06, 2021  
 Fall break (TBD)  
 November 24- 28, 2021  
 December 2(Thurs)- 10(Fri) 2021  
 December 11 - January 2, 2022

### January 3, 2022

January 17, 2022

### April 4-15, 2022

April 18, 19 2022(Mon, Tues)

April 20- 24, 2022

April 25, 2022

### May 2<sup>th</sup>, 2022\*

### May 6<sup>th</sup>. 2022\*

May 30<sup>st</sup> , 2022

July 4, 2022 (Mon)

### July 25-Aug 5, 2022

August 8-12, 2022

August 13-21, 2022

August 22, 2022

September 5, 2022

To be determined

November 23-Nov 27, 2022

### Nov 28-Dec. 9, 2022

December 12-16, 2021

December 17-**January 8, 2023**

### January 9- March 17 , 2023

March 18-26, 2023

### March 27-June 2, 2023

June 3-June 11, 2023

### June 12-August 18, 2023

August 18-27, 2023

August 28- 2023

September 4, 2023

November 22-Dec 26th, 2023

Dec 11<sup>th</sup>-Dec 15<sup>th</sup> 2023

December 16- Jan 7, 2024

Registration and Orientation  
 Summer semester classes begin  
 Independence Day Holiday  
 Exams  
 Break  
 Fall Semester begins  
 Labor Day Holiday  
 Fall break  
 Thanksgiving break (Nov 25)  
 Exam Week for Fall Semester  
 Winter Break

General Medical Complex begins

Martin Luther King Holiday

### General Medical Clinical Block

Exams

Break

Musculoskeletal Rehab begins

### Poster Day

### Graduation

Memorial Day Holiday

Independence Day Holiday

### Musculoskel Rehab Clinical Block

Exams

Break

Neuro Rehab begins

Labor Day

Fall Break

Thanksgiving break (Nov 24, 2022)

### Neuro Rehab Clinical Block

Exams

Winter Break

### Clinical Internship I

Travel Week

### Clinical Internship

Travel Week

### Clinical Internship

Travel Week

Fall semester starts

Labor Day

Thanksgiving (Nov 23, 2023)

Exam week

Winter Break



January 8, 2024  
February 2024(TBD)  
April 29 - May 3rd 2024  
May 6, 2024\*  
May 10, 2024\*

Spring semester begins  
Degree Application Deadline  
Exam period  
Poster Day  
Graduation

**\* IMPORTANT: This schedule is TENTATIVE. Dates are subject to change**

## **COURSES**

### **DPT 700 Health Promotion, Wellness, and Prevention: Individual level, 1cr**

DPT I, Required, Letter Grade

Instructor: Sara Pullen, PT, MPH

Introduction to fundamental concepts of health, wellness, screening for risk, and the theoretical bases underlying behavior change.

### **DPT 705 Human Anatomy, 4 cr**

DPT I, Required, Letter Grade

Instructor: Jessica Santucci, DPT, OCS

Study of the structures and functions of systems of the body focusing on the nervous, musculoskeletal, circulatory and pulmonary systems. Includes human cadaver dissection.

### **DPT 710 Fundamentals of Clinical Measurement, 3 cr**

DPT I, Required, Letter Grade

Instructor: Jenny Sharp, DPT, CCS

Introduction to the physical therapist model of clinical practice with an emphasis on basic examination skills. Procedures covered include methods for determining strength and range of motion and basic cardiopulmonary assessment.

### **DPT 715 Kinesiology and Biomechanics, 4cr**

DPT I, Required, Letter Grade

Instructor: Benjamin Rogozinski, DPT

Introduction to biomechanical principles of human movement. Includes discussion of the mechanical principles underlying the movement of individual joints, connective tissue mechanics and the analysis of posture and gait.

### **DPT 720 Ethics and Professionalism, 2 cr**

DPT I, Required, Letter Grade

Instructor: Bruce Greenfield, PhD, PT

Introduction to ethics, laws and professionalism in physical therapist practice. This course provides the introductory information concerning physical therapists professional obligations requisite to functioning as a clinician, consultant, and administrator. The course accomplishes this goal by providing information and experience with issues of professionalism, ethics, licensure regulation, the professional association, and other health professions. Various professional relationships of the physical therapist and related responsibilities are emphasized and provide the basis for on-going consideration of ethical and legal problems. An

introduction to legal and moral issues and dilemmas related to professional and health care trends occurs through readings, group activities and discussion.

### **DPT 725 Interpersonal Communications, 2 cr**

DPT I, Required, Letter Grade

Instructor: Stella Nelms, PhD

Listening, as well as talking, are skills inherent to providing the best patient care. This course fosters the development of skills in the interpersonal and problem-solving processes.

### **DPT 730 Systems Physiology, 5 cr**

DPT I, Required, Letter Grade

Instructors: Mark Lyle, PhD, PT; Patricia Nichols, BSc; Joe Nocera, PhD

The course is designed to study the function of the human body at the molecular, cellular, tissue and systems levels, in both health and disease. The major underlying themes are: the mechanisms for promoting homeostasis; cellular processes of metabolism, membrane function and cellular signaling; the mechanisms that match supply of nutrients to tissue demands at different activity levels; the mechanisms that match the rate of excretion of waste products to their rate of production; the mechanisms that defend the body against injury and promote healing. These topics are addressed by a consideration of nervous and endocrine regulation of the cardiovascular, hematopoietic, pulmonary, renal, gastrointestinal, and musculoskeletal systems, including the control of cellular metabolism. The integrative nature of physiological responses in normal function and disease is stressed throughout.

### **DPT 735 Neuroscience, 4 cr**

DPT I, Required, Letter Grade

Instructor: Trisha Kesar, PhD, PT

This course is designed to provide an understanding of basic scientific principles and concepts related to the structure and function of the nervous system, with specific emphasis on relating neuroscience to perception and movement. Upon completion of this course, students will be able to relate structural components of the nervous system to their function, correlate neurological examination with structural components, and correlate nervous system injury or disease with neurological deficits or dysfunction seen in clinical practice. Throughout the course, students will be encouraged to develop critical thinking and problem solving skills, as well as begin to develop the ability to use scientific literature to discuss evidence-based approaches to managing individuals with movement dysfunction.

### **DPT 740 Introduction to Interventions, 3 cr**

DPT I, Required, Letter Grade

Instructor: Peter Sprague DPT

Evidence-based course designed to provide students with the basic principles for determination of exercise need and the prescription of exercise programs and the determination of safe and appropriate application of physical modalities.

**DPT 745 Growth Process through the Lifespan, 4 cr**

DPT I, Required, Letter Grade

Instructors: Durga Shah, DPT, PCS; Sarah Caston, DPT, NCS

The interactions of perceptual-motor, cognitive, and psychosocial influences on the developing human and the processes of individual and family reactions to stresses of aging, health changes, death, and dying. Integrated practical/clinical experiences in well-baby, child day care, and elder care/residential settings.

**DPT 750 The Teaching and Learning Process in Physical Therapy, 2 cr**

DPT I, Required, Letter Grade

Instructor: Bruce Greenfield, PhD, PT

Much of physical therapy involves teaching – teaching the patient, family members, other health care professionals, insurance providers. This course develops skills in the teaching-learning and problem-solving processes.

**DPT 755 General Medical Conditions, 12 cr**

DPT I, Required, Letter Grade

Instructors: Kathy Lee Bishop, DPT, CCS; Jenny Sharp, DPT, CCS

Evidence-based physical therapist examination, diagnosis, and management of patients with cardiac, pulmonary, wound, cancer, and metabolic conditions. Content integrates pathophysiology and medical management of patients. Includes congruent, weekly patient oriented experiences and culminates in a two week, full-time clinical education experience.

**DPT 760 Medical Genetics in Physical Therapy, 3 cr**

DPT I, Required, Letter Grade

Instructor: Patricia Nichols, BSc

The course will elucidate the process of cell division, gamete production and sexual reproduction in males and females. Further study will explore the relationship of molecular and cellular genetics, transmission genetics and population genetics. The student will gain an understanding of the role of genes and chromosomes in determining structure and function in health. Risk assessment will be addressed for inherited and somatic genetic diseases including the interaction of genetic and environmental factors in contributing to multifactorial diseases, such as carcinogenesis. These concepts will be considered in the context of the lifespan of an individual, inheritance through pedigree analysis, and populations. Clinical applications for screening, genetic testing and gene therapy will be considered.

**DPT 765 Evidence-Based Practice, 2cr**

DPT I, Required, Letter Grade

Instructor: Marie Johanson, PhD, PT, OCS

The purpose of the course is to gain competence in critical analysis of the research literature through the use of fundamental concepts of the inquiry process. This course provides the foundation for 1) evidence-based physical therapy practice and clinical reasoning used in General Medicine, Musculoskeletal Rehabilitation, Adult Neurorehabilitation, Pediatric Rehabilitation, and Internship I, II, and III and 2) student research projects in Clinical Research I and II (DPT 915 and DPT 925).

**DPT 800 Musculoskeletal Rehabilitation, 11 cr**

DPT II, Required, Letter Grade

Instructors: Kathleen Geist, DPT, OCS; Peter Sprague, DPT, OCS

Evidence-based physical therapist examination, diagnosis, and management specific to adult and pediatric patients with musculoskeletal conditions. Content integrates pathophysiology, medical management, and physical therapy assessment and treatment, including manual therapies. Incorporates congruent, weekly patient oriented experiences and culminates in a two week, full-time clinical education experience.

**DPT 805 Principles of Motor Learning, 2 cr**

DPT II, Required, Letter Grade

Instructor: Michael Borich, PhD, PT

This course will provide the student with a theoretical basis and historical overview of motor learning and its application to motor skill acquisition. Since teaching acquisition or re-acquisition of motor skills is a foundation for physical therapy interventions, this course will provide students with core knowledge and a theoretical framework upon which to build therapeutic interventions. The course will include the basic tenets of: the relation of task, individual, and environment and motor skill acquisition, practice schedules, and the role of feedback. Materials will focus on cognitive and motor aspects of skill acquisition.

**DPT 810 Adult Neurorehabilitation, 7 cr**

DPT II, Required, Letter Grade

Instructors: Tambre Phillips, DPT, NCS, MBA; Laura Zajac-Cox, DPT, NCS

Examination, diagnosis, and management of the adult patient with neurological conditions. Content integrates pathophysiology, medical management, and physical therapy assessment and treatment. Students will learn examination techniques and validated outcome measures to evaluate disability, impairment, and functional deficits and to measure the outcomes of treatment. Students will develop interventions based upon available evidence and the principles of motor learning. Includes congruent, weekly patient-oriented experiences and culminates in a two week, full-time clinical education experience.

**DPT 815 Pediatric Rehabilitation, 4 cr**

DPT II, Required, Letter Grade

Instructor: Benjamin Rogozinski, DPT

This course will provide the student with foundation knowledge of primary and secondary conditions which result in activity limitations and disability across childhood. The roles of other medical professionals on the pediatric rehabilitation team will be presented including the physician and surgeon. Students will use pediatric specific examination techniques, standardized methods of testing and valid outcome measures to evaluate functional motor skills, coordination, other physical therapy problems, and to measure the outcomes of treatment. Students will develop intervention plans based upon available evidence and apply principles of motor learning during functional training. Physical therapy management of the child will be addressed in the context of the child's interests, diagnosis, prognosis, age, environment of care and the child's family.

**DPT 820 Health Service and Management, 3 cr**

DPT II, Required, Letter Grade

Instructors: Beth Davis, DPT, MBA

This course is the second course in the health services management series and builds on learning in the previous course that focused on professionalism; ethical/legal guidelines and standards for practice; and professional roles, responsibilities and obligations. Specifically, this course focuses on the factors affecting the client's entry into and progression through the healthcare system, including the effect of current financial, legal and regulatory policies that affect the client, the client/professional relationship, and the practice of physical therapy. This course will also instill an entrepreneurial mindset and prepare the student for participation in administrative activities. The course will provide a glimpse of primary business disciplines including market research and strategy, marketing, finance, operations, and management.

**DPT 825 Exploration of Human Behavior, 2 cr**

DPT II, Required, Letter Grade

Instructor: Michelle Haddad, PhD

A tendency to underestimate the incidence of behavioral and cognitive problems can have a negative effect on treatment outcome and the return of the patient to normal activities. Therapists need to be able to recognize these behaviors, recognize how we react to the behaviors in our clients, measure these behaviors, and assess the effect of these behaviors on treatment planning and outcome. The course will cover behavioral and cognitive problems and the psycho-social-cultural aspects of disability. Class sessions will be primarily small group discussion and lecture.

**DPT 830 Internship I, 10 cr**

DPT II, Required, Letter Grade

Instructors: Tambre Phillips, DPT, NCS, MBA

The first of three, full-time supervised clinical experiences in a variety of clinical settings. Each student completes a 10 week, full-time experience in an acute care facility, in a rehabilitation facility and in a community setting.

**DPT 835 Administration and Consultation in Healthcare, 2 cr**

DPT II, Required, Letter Grade

Instructor: Beth Davis, DPT, MBA

Practical experience in planning, implementing, and evaluating an administration/consultation project in a clinical setting. Concurrent with full-time, clinical experiences

**DPT 840 Internship II, 10 cr**

DPT II, Required, Letter Grade

Instructors: Tambre Phillips, DPT, NCS, MBA

Continuation of full-time supervised clinical experience. This course is the second, ten week experience.

**DPT 900 Internship III, 10 cr**

DPT III, Required, Letter Grade

Instructors: Tambre Phillips, DPT, NCS, MBA

Continuation of full-time supervised clinical experience. This course is the third, ten week experience.

**DPT 905 Current Practices in Physical Therapy Care, 2 cr**

DPT III, Required, Letter Grade

Instructor: Bruce Greenfield, PhD, PT

The course requires students to write several reflective narratives about their clinical experiences and to comment and discuss the themes and levels of reflection of their narrative with each other via an electronic chat room on Blackboard. The goal is to help students develop reflective skills consistent with expert practice, and to provide students opportunities for self-reflection and to welcome uncertainty and see difficult or problem situations and patients as areas for creative problem-solving versus unsolvable problems. Concurrent with full-time, clinical experiences.

**DPT 910 Advanced Medical Screening, 2 cr**

DPT III, Required, Letter Grade

Instructor: Kathleen Geist, DPT, OCS

Identification of problems that may require consultation with or referral to another practitioner based on history, systems review, and clinical evaluation; identification of problems that are outside the scope of physical therapy practice, and enhancing the ability to efficiently communicating examination/evaluation findings to other healthcare practitioners. The student will be able to integrate medical screening concepts to prepare the student for autonomous practice in a collaborative healthcare model. Upon completion of the course; students will be able to apply comprehensive medical screening to patients with complex medical problems with neurological, cardiovascular, and orthopedic dysfunction observed in clinical practice

**DPT 915 Clinical Research I, 6 cr**

DPT III, Required, Letter Grade

Instructor: Shilpa Krishnan, PhD, PT

Application of the scientific principles in a research setting. This course sequence is designed to provide the student with the opportunity to actively apply the principles and concepts learned in Evidence-Based Practice to a contemporary research issue. Emphasis is placed on practical application of research principles and the scientific process. Students participate in a group project under the direct guidance of a faculty member actively involved in research activity. Project topics vary depending on the research programs of the faculty. Students will be involved in various aspects of the research process, as appropriate for a given project, such as proposal development, subject recruitment, data collection, data reduction, statistical analysis, interpretation of the results and dissemination to the scientific community.

**DPT 920 Health Promotion, Wellness, & Prevention: Community Level, 2 cr**

DPT III, Required, Letter Grade

Instructor: Sara Pullen, DPT, MPH

The second of two courses on the topics of health promotion, wellness, and prevention. The purpose of the course is to apply the fundamental concepts of health, wellness, and prevention learned in HP, W&P:Individual level to improve the health and wellness in specific communities. Students will learn to assess the needs of a community, develop, and assess health promotion, wellness, or prevention programs targeting adults at risk for disease development or injury, as well as targeting populations with special needs.

### **DPT 925 Clinical Research II, 6cr**

DPT III, Required, Letter Grade

Instructor: Shilpa Krishnan, PhD, PT

The second of two research courses. The purpose of the course is to answer an original question related to physical therapy practice through the application of the scientific inquiry process. Students will work in small groups with a faculty mentor to collect and analyze data. All students will participate in presenting their project at the Graduate DPT Research Day traditionally held in May prior to graduation.

### **Elective Opportunities**

Elective Opportunities may be taken in different departments and schools within Emory University including the Graduate School, Rollins School of Public Health, and Goizueta Business School. The following are elective courses offered within the Division of Physical Therapy.

### **DPT 940 Introduction to Women's Health, 3 cr**

DPT III, Elective, Letter Grade

Instructor: Blair Green, PT, DPT, OCS

This course introduces the physical therapy student to management of diagnoses that are unique to women. While many physical therapy interventions and management strategies may be applied across sex, there are differences between males and females that should be considered during rehabilitation and long-term health and well-being. This course will explore conditions that are specific to women, including an introduction to pelvic health, pregnancy, breast cancer, menopause, and conditions specific to the female athlete. Learning methods will involve a combination of lecture, lab and small group discussion.

### **DPT 945 Beyond the Diagnosis: Exploring Psychosocial and Cultural Dimensions of Disability, Through Health Humanities, 3 cr**

DPT III Elective, Letter Grade

Instructors: Sarah Blanton, PT, DPT, NCS, Sarah Caston, PT, DPT, NCS, GCS

This course will provide students the opportunity for deeper exploration of current psychosocial and cultural topics, with an emphasis on humanities, as it relates to rehabilitation. The overall course objective is for students to engage in dialogue and reflection over meaningful and relevant topics in rehabilitation, drawing from their completed clinical experiences. The course structure will include didactic classes followed by discussion-based classes where students can engage in dialogue and reflection about the previous class's content. Assignments for the course will include self-reflective discussion boards, case-oriented problem solving, an interview with a community member who identifies as living with a disability, participation in a mindfulness practice of their choice, and a book report.

**DPT 951 Yoga and Physical Therapy, 3 cr**

DPT III, Elective, Letter Grade

Instructor: Marlysa Sullivan, MPT

Yoga Therapy is gaining recognition and acceptance worldwide as a complementary healthcare modality. The purpose of this class is to teach the physical therapy student the practices of yoga that are applicable to the physical therapist patient. Concepts underlying yoga and yoga practices as well as their application to a variety of patient conditions will be explored. The student will be able to understand, explain, teach and integrate a variety of yoga practices into their patients' rehabilitation programs.

**DPT 952 Business Mgmt for the Physical Therapist Entrepreneur, 3 cr**

DPT III, Elective, Letter Grade

Instructors: Beth Davis, DPT

The purpose of this course is to instill an entrepreneurial mindset in physical therapy students irrespective of the practice environment in which they choose to work. This course is for students interested in learning the art and science of becoming a successful entrepreneur in the physical therapy industry. This course will help students learn planning, operational, and analytical skills that will improve the likelihood of success in starting their own private practices or introducing new services in different health care settings (acute care hospital, rehabilitation center, etc.). Thus, this course is for all students and not just for those wanting to work in out-patient settings or wanting to start their own private clinics. This course will provide a glimpse of a number of primary business disciplines including marketing, finance, operations, management, market research, and strategy. By the completion of this hands-on course, students will have learned how to reduce their risk in starting a new service and increase their likelihood for return. Students will be able to develop and present a new business concept in an effective oral and written manner.

**DPT 953 Preceptorship: Neuroscience, 3 cr**

DPT III, Elective, Letter Grade

Instructor: Trisha Kesar, PhD, PT

Preceptors will assist with teaching basic neuroanatomy, neuroanatomy lab dissection sessions, electrophysiology lab sessions, managing discussion forums on Blackboard, and facilitating discussion during student presentations.

**DPT 954 Manual and Manipulative Therapy, 3 cr**

DPT III, Elective, Letter Grade

Instructor: Rich Nyberg, DPT, OCS

The historical development of manipulative therapy is investigated starting with the use of manipulation by bone setters followed by the introduction of manipulation into the medical, osteopathic, chiropractic and physical therapy professions. The various schools of manipulative thought are investigated with recognition to the individual contributors who advanced the practice of manipulation. The current state practice acts regarding the utilization of manipulation in the physical therapy profession is reviewed. Supportive arguments against the regulation of



manipulative therapy within the profession of physical therapy are explored. Theoretical rationale and effects of manipulation are examined with respect to psychological impact, neurophysiologic influences and mechanical changes. Spinal manipulative research and evidence for the use of manipulation is analyzed. Risks, adverse reactions and contraindications are considered. The psychomotor skills required in the successful performance of manipulation are also addressed.

### **DPT 955 Interprofessional Critical Care Early Mobilization, 3 cr**

DPT III Elective, Letter Grade

Instructors: Douglas S. Ander, MD, Kathy Lee Bishop PT, DPT, CCS, Lisa Daniels, MD, Jennifer J. Sharp PT, DPT, CCS,

This interprofessional course will combine online didactic content with immersive simulation-based learning experiences and clinical experience with early mobilization in the Intensive Care Unit. Through this course, 4th year medical students in their final clerkship and 3rd year physical therapy students in their final semester will learn and apply the four Interprofessional Education Collaboration Core Competency Domains (Values/Ethics; Roles/Responsibilities; Interprofessional Communication; Teams and Teamwork) within the context of an ICU early mobilization curriculum.

### **DPT 956 Pilates for the Rehabilitation Professional, 3 cr**

DPT III, Elective, Letter Grade

Instructors: Karyn Staples, PhD, PT; ; Megan Hunter, DPT, CSCS

The objective of this course is to introduce the principles of Pilates and their application in a rehabilitation setting. Classes will be case scenario-driven to provide novice physical therapists clinical reasoning and problem solving skills relevant to application of Pilates exercise. Upon successful completion of this course, students will have developed a repertoire of Pilates exercises to apply in multiple rehabilitation settings. They will be familiar with modifications and progressions specific to various patient types and conditions.

### **DPT 958 From Clinic to Kitchen: Applied Nutrition for Physical Therapists, 3 cr**

DPT III, Elective, Letter Grade

Instructor: Sarah Blanton, PT, DPT, NCS, FNAP, Carol Kelly, MA, RDN. CSSD, Brittany Summerlin, MPH, RDN

Study of human nutrition. Topics include macro & micronutrients (carbohydrates, protein, lipids; vitamins), digestion, absorption, metabolism; energy balance, weight management and the role of nutrition in physical fitness and maintaining health & preventing disease. In addition this course will cover how to plan a healthy diet, the latest dietary guidelines, nutritional supplements and how to identify sound sources of nutrition information and nutrition misinformation (via internet, media, etc.). The course is designed to enhance the nutrition knowledge of the future health professional.

### **DPT 959 Dry Needling, 3 cr**

DPT III, Elective, Letter Grade

Instructor: Virginia Grace Mollohan, DPT, OCS

This course focuses on skill acquisition of dry needling technique and clinical reasoning for implementing the intervention for upper and lower quarter

dysfunction including spine. While evidence is limited pertaining to the technique, emerging evidence is supportive and will be explored including some discussion of the strengths and limitations of the current available evidence. Current ongoing research will be explored as well as identifying gaps in the literature. Case based and problem based approaches will be implemented to enhance the clinical reasoning behind the use of dry needling.

### **DPT 960 Spanish for Physical Therapists, 3 cr**

DPT III, Elective, Letter Grade

Instructor: Sara Pullen, DPT, MPH

Spanish for Physical Therapists is an elective course designed for physical therapy students who want to improve communication skills with Spanish-speaking patients and their caregivers through increased awareness of Hispanic American culture and improved ability to use spoken Spanish to communicate during physical therapy assessments and procedures. Each week a different assessment procedure and related physical therapy intervention is introduced and practiced in role-playing experiences. Assessment topics include: family and home environment, work history, medical history, pain assessment, functional assessment, range of motion testing, muscle testing, neurologic examination procedures, balance and gait assessment, and developmental assessment for children. Treatment procedures include: explanation of precautions, therapeutic exercises, functional training, gait training, and the use of physical modalities. Students also learn to give instructions to patients about appropriate dress for treatment procedures, to make appointments and to give directions to the clinic or to other locations. Class materials including vocabulary lists, exercise programs, and patient education handouts allow students to build a portfolio of resources to use in the delivery of physical therapy services to patients who speak Spanish and very little or no English.

### **DPT 961 Advanced Acute Care, 3 cr**

DPT III, Elective, Letter Grade

Instructor: Kathy Lee Bishop, DPT, CCS

The purpose of this course is to enhance the assimilation of knowledge and skills to facilitate early mobilization in the intensive care unit. This course is for students interested in integrating problem solving, pathophysiology, electrocardiograms, and technology to achieve early mobilization as part of a multidisciplinary team in the Intensive Care Unit. This course will provide students the opportunity to learn various assessment skills, develop critical thinking and problem solving skills through case-based analysis of patient scenarios. Through this process the students can develop evidence based reasoning for early mobilization in the intensive care unit to impact patient and cost outcomes for the acute care setting. Students have an option to complete an Advanced Cardiac Life Support (ACLS) certification at the end of the elective. Current ACLS certification is required to apply for the American Board of Physical Therapy Specialty - Cardiovascular and Pulmonary Specialty Certification (CCS).

### **DPT 963 The Endurance Athlete, 3 cr**

DPT III, Elective, Letter Grade

Instructor: Kate Mihevc Edwards, DPT, OCS

This course introduces students to an evidence-based approach to examination (including functional movement assessment and gait analysis), evaluation and treatment of overuse injuries among triathletes. This course will build upon examination of specific lower extremity joints to include an integrated kinetic chain approach to assessment of triathletes' overuse injuries. Students will acquire strategies to facilitate biomechanical improvements in running, cycling and swimming and will learn return to sports activities for this athletic population. Intervention strategies will include specific manual therapy techniques, prescription of running and multisport specific exercises, and gait retraining. Additionally, students will learn the importance of a comprehensive multidisciplinary approach to the management of the triathlete via interactions with a diversity of professionals involved in the care of these athletes.

**DPT 964 Preceptorship: Adult Neurorehabilitation, 3 cr**

DPT III, Elective, Letter Grade

Instructors: Tambre Phillips, DPT, NCS, MBA; Laura Zajac-Cox, DPT, NCS

Preceptors will gain experience in teaching neurorehabilitation clinical skills and facilitating clinical decision making, while refining their own skills, using case study formats in a laboratory setting.

**DPT 966 Preceptorship: Introduction to Interventions, 3 cr**

DPT III, Elective, Letter Grade

Instructor: Peter Sprague, DPT, OCS

Preceptors will receive experience implementing the teaching-learning process in a small group laboratory format which will also include introduction of elements of clinical decision making and interpersonal relations. By assisting in teaching this content, students will also have the opportunity to revise and deepen their own knowledge in evidence based practice as it applies to therapeutic modalities and exercise interventions

**DPT 968 Preceptorship: Spanish for Physical Therapists, 3 cr**

DPT III, Elective, Letter Grade

Instructor: Sara Pullen, DPT, MPH

This is an opportunity for one or two students with advanced level Spanish skills to serve as teaching assistants in the Spanish for Physical Therapists course

**DPT 969 Health in Aging: Patient Care in the 21st Century, 3 cr**

DPT III, Elective, Grade

Instructor: Madeleine Hackney, PhD

Gerontology is the study of aging. The study of aging is not only important for people who are pursuing careers in the fields of gerontology or geriatrics, but will be highly relevant to those seeking to work in any of the health professions given the aging of the patient population in the U.S. This course provides an introduction to four key content areas within health gerontology (health in aging): 1) Social Gerontology; 2) Physical Function and Aging; 3) Sensory and Cognitive Aging, and 4) Psychology and Aging. We will examine a broad range of topics pertinent to the social, physical, and behavioral aspect of aging and health. This course addresses the growing demand for interdisciplinary and multidisciplinary training and education among advanced practice nurses and health professionals.

**DPT 970 Directed Study, 3 cr**

DPT III, Elective, Letter Grade

Instructor: Marie Johanson, PhD, PT, OCS

Specialized learning experiences related to the student's program, which are not available through formal course offerings. These courses offer student the opportunity to focus on a specific focused area of study and typically culminate in a formal paper and/or presentation to faculty and students.

**DPT 971 Preceptorship: Health Promotion, Wellness and Prevention: Community level, 3 cr**

DPT III, Elective, Letter Grade

Instructor: Sarah Pullen, DPT, MPH

This is an opportunity for students in the dual DPT/MPH program to serve as a teaching assistant in the second Health Promotion, Wellness and Prevention course

**DPT 972 Readings in Physical Therapy, 3 cr**

DPT III, Elective, Letter Grade

Instructor: Marie Johanson, PhD, PT, OCS

Readings in Physical Therapy provides the student with an opportunity for in-depth review, critique and synthesis of current literature beyond readings not available through formal course offerings. These courses typically culminate in a formal paper and/or presentation to faculty and students.

**DPT 974 Preceptorship: Pediatric Rehabilitation, 3 cr**

DPT III, Elective, Letter Grade

Instructor: Benjamin Rogozinski, DPT

This is an opportunity for students with a strong interest in pediatrics to serve as a teaching assistant in the Pediatric Rehabilitation course.

**DPT 976 Advanced Human Anatomy, 3 cr**

DPT III, Elective, Letter Grade

Instructor: Jessica Santucci, DPT, OCS

Human cadaver dissection to identify anatomical characteristics of different body systems with emphasis on correlating these characteristics to clinical implications. The students identify two body regions, based on their clinical interests and in consultation with the instructor, for detailed dissection and study.

**DPT 978 Spinal Orthopaedic Physical Therapy, 3 cr**

DPT III, Elective, Letter Grade

Instructor: Rich Nyberg, DPT, OCS

Functional anatomy, clinical biomechanics, and neurophysiologic aspects of neck and back problems with special emphasis placed on detecting spinal motion dysfunction during the clinical examination and manual therapy techniques.

**DPT 980 Advanced Study of Extremities, 3 cr**

DPT III, Elective, Letter Grade

Instructor: Michael Wooden, MS, PT, OCS

Medical screening and differential diagnosis for patients with orthopedic extremity joint conditions including tissue responses to trauma and immobilization, abnormal

mechanics, fractures, dislocations, upper and lower extremity overuse syndromes and gait dysfunction.

### **DPT 982 Fundamentals of Strength and Conditioning, 3 cr**

DPT III, Elective, Letter Grade

Instructor: Benjamin Rogozinski, DPT

This course will provide a comprehensive overview of strength and conditioning and is designed specifically to prepare students for the nationally accredited Certified Strength and Conditioning Specialist (CSCS) certification exam. Content involves an extensive review of the basic exercise sciences including anatomy, exercise physiology, and biomechanics. In addition, the fundamentals of performance nutrition, exercise technique, program design and administration, and testing and evaluation will be covered.

### **DPT 984 Advanced Pediatrics, 3 cr**

DPT III, Elective, Letter Grade

Instructor: Durga Shah, DPT, PCS

Research evidence supporting examination and management of pediatric patients with specific musculoskeletal conditions; includes process of bone modeling as well as the developmental changes in joint mobility and alignment related to functional movement from birth through skeletal maturity.

### **DPT 986 Vestibular Rehabilitation, 3 cr**

DPT III, Elective, Letter Grade

Instructor: Richard Clendaniel, PhD, PT

This intense, evidence-based, five-day course consists of lecture and laboratory sessions with additional self-study sessions. All participants will be expected to demonstrate assessment skills to faculty including: oculomotor examination with emphasis on the identification of nystagmus and canal involvement; and balance and gait, fall risk, and functional assessments. Participants will also be expected to demonstrate appropriate treatment procedures for BPPV affecting posterior, anterior, and horizontal canals for both cupulolithiasis and canalithiasis, for unilateral and bilateral peripheral vestibular disorders, and for central vestibular disorders including traumatic brain injury and stroke. Emphasis will be on using assessment results to develop an effective treatment plan. The course will include written, video, and practical examinations.

### **DPT 988 Interfacing Engineering Technology and Rehabilitation, 3cr**

DPT III, Elective, Letter Grade

Instructor: Steven Wolf, PhD, PT

This course is designed to introduce the student to the emerging trends in rehabilitation technologies. Lecture and laboratory instruction will help students develop skills in adopting objective criteria for evaluating emerging technologies with alternative methods. The course will feature recent discoveries in research related to rehabilitation technology. Students will learn about the physiological mechanisms governing physical rehabilitation, as well as the tools used to quantify those mechanisms. The course will survey neural prosthetics, brain-machine interfacing, wearable technologies, telerehabilitation, regenerative medicine, robotics, and informatics as well as the processes for technology transfer, patent applications, and licensing.

**DPT 990 Sports Physical Therapy, 3 cr**

DPT III, Elective, Letter Grade

Instructor: Melissa Marchetti, DPT, SCS

A study of anatomy and biomechanics related to sport injuries. Examination procedures specific to the athletic population will be emphasized. The significance of test findings and the formulation of treatment plans are discussed. Management Strategies for acute injuries, improvement in motion performance and return to sports activities will be demonstrated. Intervention strategies will include first aid, taping, manual therapy, and exercise techniques. The course also investigates the relationships between extremity joint injuries and adjacent regions, including the spine.

**DPT 992 Advanced Adult Neurorehabilitation, 3 cr**

DPT III, Elective, Letter Grade

Instructors: Tambre Phillips, DPT, NCS, MBA; Laura Zajac-Cox, DPT, NCS

Course content will include advanced study of neurologic diagnoses, examination, intervention, and clinical decision-making. Special attention will be given to various outcome measures and interventions with respect to both theory and practice, with a focus on current evidence-based medicine.

**DPT 994 Service Learning, 3 cr**

DPT III, Elective, Letter Grade

Instructors: Sara Pullen, DPT, MPH

This course offers the opportunity to explore the physical therapists' role in providing a variety of services to medically underserved communities. Service learning consists of academic learning modules integrated with meaningful community service experiences designed to increase civic responsibility and cultural competence and strengthen communities. The course consists of independently completed web-based learning modules, written reflections, and provision of services to a community. Students will have the opportunity to create their own project or commit to an existing community project (community projects TBA). Student MUST have an agreement with a faculty advisor regarding their service learning project prior to registering for this course.

**DPT 996 Preceptorship: General Medical Conditions, 3 cr**

DPT III, Elective, Letter Grade

Instructors: Kathy Lee Bishop, DPT, CCS

Preceptors assist in supervising and teaching the DPT I students' laboratory content and techniques related to acute care conditions. This course provides an opportunity to increase understanding and proficiency in the General Medical Conditions course material while applying knowledge and clinical experiences in a teaching environment.

# MASTER OF MEDICAL SCIENCE PROGRAM ANESTHESIOLOGY

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The Master of Medical Science Program in Anesthesiology is a graduate medical education program in the Emory University School of Medicine. The Program accepts qualified individuals who desire to undertake rigorous didactic and clinical education to become knowledgeable, skilled anesthesiologists. Students begin the Program in June, and classroom and clinical education span 27 continuous months with graduation in August - seven semesters following matriculation.

The Master of Medical Science Program in Anesthesiology is open to individuals holding a baccalaureate degree who have completed basic premed courses. Individuals who successfully complete this Program are awarded a Master of Medical Science degree by Emory University. Following graduation and successful completion of the Certifying Examination for Anesthesiologist Assistants, graduates can become integral anesthesiologist members of an anesthesia care team practice led by an anesthesiologist.

The information below outlines all portions of our application process. For more information on each specific element of the application, visit each tab and provided links. Instructions for application and the supporting documents are in PDF files. To view and print the PDF files, you must have Adobe Reader installed on your computer. The Emory AA Program uses the Google calendar as its main calendaring resource. It is required that you create a free Google account if you do not already have one.

## ***APPLICATION PROCEDURES***

### **How to Apply**

The Emory Master of Medical Science Program in Anesthesiology process is comprised of two online application/s (CASAA and the Emory supplementary) and the supporting materials listed below. Please see the admissions calendar for deadline dates (**Admissions Calendar**). The information below outlines the items necessary to complete our application process. For more information on each specific element of the application, visit each listed tab and provided links.

- Complete Common AA Program Application – **CASAA** – Safari and Chrome browsers recommended. A non-refundable application fee of \$160.00 is required (see fee chart in CASAA). Reapplicants, please see the reapplication tab.
- Complete the Emory AA Program Supplemental online application– **Click Here**. Create your account and complete the application online. A non-refundable application fee of \$65.00 is required before submitting (this fee is additional to the required CASAA fees).
- Instructions for the Emory supplemental application and the supporting documents are in PDF files. To view and print the PDF files, you must have **Adobe Reader** installed on your computer.
- Emory AA Program Admissions uses Google as its main email and calendaring resource. It is required that you create a free Google account if

you do not already have one. To create a free Google account, please– [Click Here](#)

- After the Emory Supplemental online application is received and processed, applicants will begin receiving update notices via email from the AA Program office regarding the status of BOTH A list of the items received and processed will appear at the bottom of the list.
  - All prerequisite courses and degree programs must be complete and reported on an official transcript by the end of the spring semester before the program start date.
  - Academic programs and prerequisite courses may be in progress during the application process. Students are welcome to take prerequisite coursework with accredited online programs and local two- year institutions.
1. View and print the **Application Checklist**. Include a completed copy of this checklist with your supporting documents to ensure completion.
  2. Manage needed references in CASAA. Do this as soon as possible because your application will not be considered complete until all three references are received and processed. Please share your overall competitiveness, application progress and application status with your references before asking them to make contact with the AA Program on your behalf (Academic and professional preferred).
  3. Official transcripts from all undergraduate and graduate institutions should be sent directly to CASAA (if accepted, complete official transcripts from all undergraduate and graduate institutions will be requested for your program file).
  4. Emory AA Program GRE Designated Institution (DI) Code is 5692. Educational Testing Service (ETS) will transmit official GRE scores electronically to the Centralized Application Service for Anesthesiologist Assistants (CASAA) up to twice a week for all test takers who designate the program as a score recipient. If you have not taken the GRE, it will behoove you to explore early June- August test dates to assure official processing in CASAA (unofficial test scores will not be accepted). See processing time terms and conditions in CASAA.
  5. Official MCAT scores should be reported in CASAA and a copy of your MCAT score report with your verification number should be sent to the program office with your supporting documents listed below.
  6. Double check the application information before submitting (use your updated transcript/s to complete both applications, please do not guess or leave items incomplete; plus, and minus information is not required). **Incomplete applications will not be considered (use IP for courses in progress at the time of application or not yet available for registration (proof of enrollment is required after course registration – unofficial documents will suffice).**
  7. Send a current, full color passport-sized photograph with your supporting documents below, which is readily available from Kinko's- Walgreens- CVS or similar businesses (Include your last, first name on the back of the photo and feel free to smile). Do not make a copy your official passport picture.
  8. Print, complete, sign, date and send all seven supporting documents and CBC PDF (note: some documents are to be notarized) to the AA Program mailing address.



## Supporting Documents (PDF)

### Application Checklist

- **Documentation of Familiarity with Anesthesia Practice**
- **Documentation Concerning Technical Standards**
- **Documentation Concerning Infectious and Communicable Diseases**
- **Criminal Background Check**
- **Drug Screen Release Form**
- **Applicant Statement**

All supporting documents should be mailed to:

**Master of Medical Science Program in Anesthesiology  
57 Executive Park South - Suite 300  
Atlanta, GA 30329**

The applicant is solely responsible for completion of his/her application. The Program is not responsible for deficiencies due to the US Postal Service or third parties in order to complete an applicant's request for supporting documents. Failure to provide complete and accurate information or providing false information will result in immediate withdrawal from admissions consideration.

The Emory AA Program does not provide admission or coursework exceptions to those that are interested in applying to the program and currently hold MA, PhD or MD degrees or certifications. All applicants are expected to meet our general requirements in order to be considered for a position with the program.

Emory University reserves the right to select for admission those applicants it deems best qualified for admission, while complying with all applicable laws. Emory University reserves the right to determine program size and/or cancel the program. All applicants should be aware that gaining admissions to the Emory Anesthesiologist Assistant Program is highly competitive. No applicants are guaranteed admissions to the program, even when the general requirements are met.

If selected into the Emory AA program, non-refundable fees to include a \$500.00 acceptance fee and a \$500.00 tuition fee will be applied to the student's first semester tuition. If an applicant withdraws his/her acceptance or encounters circumstances that prevent his/her matriculation, only amounts paid over the acceptance fee and tuition fee will be refunded.

**Academic programs and required pre-medical courses will be accepted from institutions that are regionally accredited. Please see the list of accepted Regional Institutions.**

ADMISSIONS CALENDAR	
Date and Time	Details
	Calendar Dates to Remember

<b>Getting Started</b>	Explore AA Program General requirements and Student Aid and FAFSA –studentaid.gov/h/understand-aid/how-aid-works
<b>April 30<sup>th</sup></b>	2021-2022 Application Cycle Begins
<b>April - September</b>	Recommended time to take/retake the GRE or MCAT
<b>December 1<sup>st</sup> by 11:59PM EST</b>	Deadline to submit both applications - CASAA and Emory Supplemental must be complete.
<b>December 15<sup>th</sup> by 11:59 PM EST</b>	Deadline to submit the <u>Emory AA Supplemental Application Supporting documents</u>
<b>Admissions Cycle 2021-2022</b>	
<b>April 30<sup>th</sup> - December 15<sup>th</sup>, by 11:59 PM EST</b>	<i>General Application Cycle</i>  <u>CASAA</u> file should have a <u>Verified</u> status in order to be considered for review- Complete <u>Emory AA Supplemental Application</u>
<b>April 30<sup>th</sup> - October 15<sup>th</sup>, by 11:59PM EST</b>	<i>Early Consideration</i>  Complete and Verified <u>CASAA</u> application- Complete <u>Emory AA Supplemental Application</u> - Less than two prerequisite courses outstanding
<b>November 2021</b>	Early Interviews Conducted
<b>JAN- MAR 2022</b>	General Interviews Conducted
<b>Two weeks after acceptance notification</b>	Deadline to "Commit to Enroll"
<b>May 27, 2022</b>	Final decision deadline for waitlisted students accepted to the AA Program
<b>August 22, 2022</b>	New Student Orientation Begins
<b>IMPORTANT NOTE:</b> <i>Due to the high volume of applications that we receive each year, we strongly recommend that you submit your applications (both the <u>CASAA</u> and the <u>Emory AA Supplemental application</u>) EARLY. Early submission does not guarantee an interview or early consideration, but it does place your application in review earlier. Please also note that deadline extensions will not be granted. Keep in mind is that the application "season" begins 16 months prior to each year's fall semester, so be sure to plan ahead. Applicants are welcome to be in progress with courses and academic programs during the application cycle.</i>	

***Please Note:***

- All calendar items are subject to change.
- Emory Application item and status email updates will begin after the Emory Supplemental Application and fee are received and processed.
- Applicants should work diligently with CASAA to assure that all items, fees and necessary permissions are granted for official application processing.
- Official GRE or MCAT scores are required at the time of application (do not submit incomplete results with either application).
- Applicants are welcome to apply while in progress with courses and academic programs.
- CASAA Applicant Help Services
- Print, complete and return Emory supporting documents to: **aadocs@emoryaaprogram.org**

**2021-2022 Emory Application Checklist**  
**Master of Medical Science Program in Anesthesiology**  
**57 Executive Park South - Suite 300**  
**Atlanta, GA 30329**

**Print Last Name:** \_\_\_\_\_

**Print First Name:** \_\_\_\_\_

- ☐ Print out this PDF and use it as a guideline to complete and submit your applications.
- ☐ Complete both online applications (CASAA and the Emory Supplemental Application). Please double check the applications before submitting. Use IP in fields for academic programs and courses that have not been taken or are currently incomplete at time of application.
- ☐ \$65.00 Application Fee (online credit card payment separate from CASAA fees)
- ☐ Use GRE Institution Code - 5692 (Anesthesiologist Asst. PR Emory). Educational Testing Service (ETS) will transmit official GRE scores electronically to the Centralized Application Service for Anesthesiologist Assistants (CASAA) up to twice a week for all test takers who designate the program as a score recipient (do not send GRE scores to the AA Program office).
- ☐ MCAT – Original should be reported to CASAA
- ☐ Official transcripts from all graduate and undergraduate institutions in which you have been enrolled should be sent and verified in CASAA. IF accepted to the Emory AA Program, we will request official transcripts for your official records.

Just so we know, please:

List the names of the universities for which you ordered transcripts to be sent to CASAA.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

List the names of the 3 individuals who are completing your reference forms:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

- ☐ Current full color passport - sized photograph (feel free to smile and include your last, first name on back of your photo)
- ☐ Form: Application Checklist
- ☐ Form: Documentation Concerning Technical Standards
- ☐ Form: Documentation Concerning Infectious and Communicable Diseases
- ☐ Form: Criminal Background Check Process (Release Form with Password)
- ☐ Form: Drug Screen Release
- ☐ Form: Applicant Statement
- ☐ CAT results: unofficial copy of your reports
- ☐ TOEFL report (international students only -if applicable)

## **ADMISSION REQUIREMENTS**

Admission to the Master of Medical Science in Anesthesia program is based on a combination of academic performance and an evaluation of non-cognitive characteristics such as professionalism, maturity, compassion, respect, a passion for learning, leadership, and motivation for providing healthcare. The Admissions Committee will review a candidate's personal characteristics and experiences, in addition to academic information. The Admissions Committee will also review all complete applications, transcripts, test scores, essay, co-curricular and health-related activities, recommendation letters and results of the interview to determine which candidates should be admitted. There is no one component of the application that will guarantee a candidate an interview or an offer of admission.

The CASAA application will be available to all qualified applicants in March.

Official processing will begin in June

All Applicants - should have:

- A Bachelor's degree from a regionally accredited college or university in the United States or Canada, including above average performance in required premed prerequisite coursework. A "B" or better is preferred in all prerequisite's courses. Online science programs and pre-med prerequisite courses completed at institutions accredited by one of the following accreditation agencies will be accepted.
- Minimum GPA 2.8 or better – GPA of 3.1 or better is preferred (the current competitive GPA is 3.4 or better)
- Applicants must complete all prerequisite courses prior to matriculation, with a cumulative GPA of 3.1 or higher. It is preferred that applicants receive a grade of "B" or better in all required prerequisite science and math courses.
- No more than four required prerequisite courses in progress at the time of application (needed courses may be completed at any local two, four year or online accredited institution).
- Competitive GRE scores ( $\geq 55$ th percentile in each section and  $\geq 4.0$  in the writing section)

[www.ets.org/gre/revised\\_general/scores/?WT.ac=grehome\\_grescores\\_150213](http://www.ets.org/gre/revised_general/scores/?WT.ac=grehome_grescores_150213)

OR

- MCAT-  $\geq 124$  in the test section. [www.aamc.org/students/download/378098/data/mcat2015scorescaleguide.pdf](http://www.aamc.org/students/download/378098/data/mcat2015scorescaleguide.pdf)
- Complete online applications submitted before the application deadline dates (See admissions calendar for specific deadline dates).

International applicants must achieve permanent resident status a year prior to applying to the Emory AA Program.

Applicants interested in EARLY consideration - (June-October) MUST have:

Note: Only those applications that meet or exceed these criteria listed below will be considered for EARLY review and early interviews. No exceptions will be made.

- Have a cumulative GPA of 3.5 or better – Prerequisite Science GPA 3.5 or better.
- Current Official Competitive GRE scores (>55th percentile in each academic section and >4.0 in the writing section) - [www.ets.org/gre/revised\\_general/scores/?WT.ac=grehome\\_grescores\\_150213](http://www.ets.org/gre/revised_general/scores/?WT.ac=grehome_grescores_150213) OR
- Current MCAT score (500 or better -scoring  $\geq 125$  in the science sections) - <https://students-residents.aamc.org/applying-medical-school/taking-mcat-exam/mcat-scores/>
- No more than two required prerequisite courses in progress at the time of application.
- Complete online applications submitted, processed, and verified on or before the early application deadline date (See admissions calendar for specific deadline dates).

International applicants must achieve permanent resident status a year prior to applying to the Emory AA Program.

General Information: The Emory AA program will allow a student to complete any missing required courses in- progress after the application deadline. Any offers of admission will be contingent upon successful completion of the required courses by the end of the spring semester before matriculation in June. Once enrolled in the course(s), a student must submit course(s) in progress. A final transcript with a final grade in the course(s) must be submitted upon completion of the course(s).

- The Emory AA program practices a rolling application reviewing process NOT admissions process.

Qualified applications are scheduled for review once a complete CASAA and Emory supplemental application are verified and processed.

- Substitutions are not permitted, and survey courses are not accepted. For those courses that have been repeated, the highest grade received should be reported. A letter grade of B is preferred in prerequisite courses.
- If you do not have a science/math or clinical background, prerequisite courses older than 7 years should be revisited.
- Reporting grades received accurately in both applications is pertinent. Emory will not recalculate transcript GPAs.
- GRE or MCAT Scores: Test scores must have been earned within five years of the application deadline (for more information, visit the sites above). Complete official test scores must be reported at the time of application submission in CASAA (only official scores will be verified). The highest scores earned by an applicant should be reported on the application. Scores from different exams will not be combined. GRE/MCAT scores should be sent electronically from ETS or AAMC. Contact the agency to have your score/s released to CASAA, and our

program will verify your scores from your application. If you retake the exams after you submit your application, log back in and update the test section in CASAA and submit a new official report. Note: Your application will not be considered complete and ready for review until an official GRE/MCAT score has been received and verified in CASAA.

- **References:** A minimum of three reference forms are required (forms and letters should be uploaded in CASAA). Reference forms or letters of recommendation should be submitted by faculty, advisors, school administrators, employers or others who can speak to your academic ability and personal character as they relate to your pursuit of the Anesthesia Assistant profession. Family members and/or friends of the family are not recommended. References are considered confidential material; information provided on reference forms or in letters of recommendation will not be shared with the applicant (**Information regarding the status of your application will not be shared with your references; individuals should contact the applicant or the applicant should contact the interested parties directly for updates**).
- 1. Following up with CASAA processing, references, testing services and institutions for pending items is the sole responsibility of the applicant. The program office will not contact those agencies on your behalf.
- 2. An Items received checklist will be sent electronically to the applicants Gmail account once the online CASAA and Emory supplemental application and fees are received and processed in the AA Program Office (documents received and processed will drop to the bottom section of your Items checklist). The Items received checklist will not be verified over the phone.
- 3. Applicants will be updated of items received and processed timely manner, please check CASAA and Gmail email accounts regularly. Your patience during this time is greatly appreciated.

## ***ADMISSION PREREQUISITES***

In order to be considered for the Emory Anesthesiologist Assistant Program, applicants must meet the following criteria:

- Baccalaureate degree from a regionally accredited institution in the United States or Canada, including above average performance in required premed prerequisite coursework. A "B" or better is expected in all prerequisite science and math courses.
- Competitive applicants should have a minimum cumulative GPA of 3.1 on a 4.0 grading scale (3.4- is the competitive GPA of the applicant pool).

### **Emory AA Program Prerequisites**

- Baccalaureate degree from a regionally accredited institution
- One semester of English
- Two semesters of general biology with laboratory
- Two semesters of general chemistry with laboratory
- One semesters of human anatomy with cadaver or virtual laboratory **OR** two semesters of an anatomy and physiology combined course with laboratory (Emory does not accept vertebrae anatomy)
- One semester of organic chemistry with laboratory
- One semester biochemistry
- Two semesters of general physics
- One semester of calculus
- Medical College Admissions Test (MCAT) **OR** Graduate Records Admission Test Examination (GRE)
- Onsite Interview at the Anesthesiology Assistant Program in Atlanta, GA (Invitation Only)

### **Courses strongly preferred, but not required**

- General Physics labs
- One semester of human physiology
- One semester of statistics
- One semester of cellular biology
- One semester of molecular biology
- One semester of organic chemistry II
- Medical Terminology

### **Additional Information**

- Advanced placement credits that appear on official transcripts may be considered based on courses, scores, and student's overall undergraduate performance.
- Advanced level courses are preferred. Survey courses are not accepted (course description will read; Survey of or to... subject being taught)
- Pass/Fail results for required prerequisite courses will not be accepted.
- Prerequisite courses may be in progress at the time of application. Proof of enrollment is required once enrolled.
- Acceptance into the program is contingent upon successful completion of all prerequisite courses and academic programs before matriculation (with a letter grade of "B" or better).



- Re-applicants to the AA Program must complete all newly listed prerequisite requirements.
- Prerequisite courses may be taken with any accredited two-year, technical or online institution.
- The Emory AA Program does not have a solidified deadline date for prerequisite coursework; however, we encourage applicants that are out of academic practice or who have not worked in areas where advanced level mathematics and science are required, to revisit science and math courses that are seven years or older.

**Exemptions will not be made for required prerequisite coursework regardless of employment background, academic degrees or professional certifications received.**

### **Important Applicant and Application Information**

- **Pass/Fail-** Some schools are providing an opt-in pass/fail grading system for spring semester. If you are given the option to continue taking a prerequisite course for a letter grade, do that instead since the Emory AA Program has a B- or higher-grade requirement for prerequisites.
- If your school has made a pass/fail grading system mandatory for spring, we will review that information to **consider** your request. Please make sure to maintain all correspondence received from your academic contacts – or interactions you have with your academic advisor – regarding the necessity for taking a prerequisite course pass/fail. Please maintain records of your midterm grades received (official information will be required).
- If you are registering for a needed prerequisite course, please explore online courses that will assign a letter grade at completion of the semester.
- **Shadowing-** We are aware that the shadowing component of the application will be difficult to complete with all the safety measures currently in place at your local healthcare facilities. Please feel free to use the instructions associated with the Emory Documentation of Familiarity waivers to complete your application.
- Although we do not have direct contact with the clinical sites, we have learned, that some hospitals are arranging a waitlist to service interested students once all safety sanctions are eased or lifted. Please check with your local clinical site/s to find out if this option is available to you. If not, please complete the three waivers to support your efforts (documents can be found on the AA website).
- **GRE Requirements-** We are sorry for the inconvenience or the hiccups that will occur while scheduling for your exam during this time, but please delay submitting your application until your exam is complete and the testing agency has provided CASAA and the test-takers with official test results. Expired exams will not be accepted (5 years or younger). Please visit <https://www.ets.org/s/cv/gre/at-home/> for General Test at home options (MCAT takes should explore this option as well).

## ***CREDIT POLICY FOR PRIOR EDUCATION & TRAINING***

Matriculants into the Master of Medical Science Program have varied educational backgrounds – some of which may make it possible to receive credit in transfer for prior course work. The matriculant with a graduate degree (master's degree or PhD) or the baccalaureate degree holder who has successfully completed applicable graduate courses within five years of application to the MMSc program may be able to receive credit in transfer for previous graduate courses in human physiology and pharmacology.

The certified primary care physician assistant with a master's degree may be able to receive credit in transfer for his/her prior masters-level courses in human physiology, pharmacology, and clinical methods.

An applicant meeting any of the above criteria may complete a request for credit in transfer and submit the request as part of his/her application.

Neither completion of the course work listed above nor receipt of a prior graduate degree guarantees admission to the Program or that credit in transfer will be approved if the applicant is accepted into the Program. Each request will be reviewed and decided individually.

## ***ENROLLMENT POLICY***

To be enrolled in the program, students must have submitted an application, completed an interview and been selected for admission to the program by the Admissions Committee. Students must also have completed all prerequisites and obtained an undergraduate degree prior to enrollment in the program.

## ***ATTENDANCE, OPERATIONAL TIME, AND ABSENCES***

The rules and information in this section apply from matriculation through the end of the degree program. Violations are subject to penalty and may represent misconduct.

### **Operational Time and Activities**

Operational time for the Anesthesiology Program is from 5:30 AM until 6:00 PM Monday through Friday and for any hours during nights and weekends for clinical assignments. Program activities include, but are not limited to, lectures, small discussion groups, HPS, labs, practica, examinations, quizzes, and clinical assignments.

### **Attendance**

Attendance to and availability for all Program activities during Program operational days are mandatory. If a student must schedule non-program activities during Program operational hours, then he/she must submit a Request to be absent and

receive approval in order for the absence to be valid and not be penalized. The student will be responsible for any Program activities that are missed during the time of absence.

### **Clinical Attendance**

Attendance is required for all clinical assignments. In order to receive credit for clinical attendance, the student must spend a minimum of 4.5 hours in clinical activities during the day, enter all case data into the Typhon system, and receive a daily evaluation by the assigned preceptor. Failure to meet these requirements will result in a personal day being assigned to the student. Occurrence of three or more such failures during any semester will result in a conduct review by the Program.

### **Holidays and Breaks**

#### **First-year Students (Semesters 1-4)**

Holidays and breaks include Labor Day; Thanksgiving (Thursday and Friday); 4<sup>th</sup> of July; winter break (December 19 - January 02); MLK Day; Memorial Day; spring break (five days assigned by the Program in April or May); summer break (week of July 4<sup>th</sup>). Each student has eight (8) personal leave days available during the first four semesters of the degree program.

#### **Senior Students (Semesters 5-7)**

Holidays include Labor Day; Thanksgiving (Thursday and Friday); 4<sup>th</sup> of July; winter break (December 19 - January 02); MLK Day; Memorial Day. Each student has

fifteen (15) personal leave days available for personal reasons, minor illnesses or emergencies, NCCAA exam preparation, and job interviews during the final three semesters of the degree program.

### **Absences and Requests to be Absent**

Requests to be absent are managed in an electronic, web-based system that employs the rules listed below for each type of absence. The student will be responsible for all Program activities that are missed during an absence for any reason.

#### **Personal Leave**

A request to be absent for personal reasons must be submitted 30 calendar days before the first day that is being requested for absence. Approval or denial of the request will be transmitted to the student within 10 calendar days of the request. Days of absence for personal reasons will be subtracted from personal leave days.

#### **Minor Illness or Minor Unforeseen Circumstance**

A minor illness or minor unforeseen circumstance occurs when a student must be absent from Program activities for one day due to illness, family emergency, car breakdown, or unexpected job interview. The request to be absent must be submitted as soon as the student realizes that he/she cannot attend clinical or other Program activities but no later than 6:00 AM on the day of absence. The student must notify the clinical site as soon as possible after submitting the request to be absent. Days of absence for minor illnesses or minor unforeseen circumstances will be subtracted from personal leave days. Failure to submit a

request or to notify the clinical site on a clinical assignment day is a violation of policy (see below).

### **Major Illness or Major Unforeseen Circumstance**

A major illness or major unforeseen circumstance occurs when a student must be absent from Program activities for two or more consecutive days for illness or family emergency. This request to be absent must be submitted as soon as the student realizes that he/she cannot attend clinical or other Program activities but no later than 6:00 AM on the first day of absence. The student must notify the clinical site as soon as possible after submitting the request to be absent. Days of absence due to major illness may or may not be subtracted from personal leave days. The reason for absence must be documented in a communication to the Program from the student's physician within three days of return to Program activities. Subtraction of days of absence for major illness from personal leave days is solely at the discretion of Program Directors. Failure to submit a request or to notify the clinical site on a clinical assignment day is a violation of policy (see below).

### **Medical Leave**

See Medical Leave in the section Interruption in Degree Program in the Student Handbook.

### **Professional Leave**

Each student has five days available during the first four semesters and five days available during the last three semesters to request for attendance at specific professional meetings: AAAA, ASA, GAAA, GSA. A request to be absent for professional leave must be filed and approved for the student to be able to attend a meeting, and documentation of attendance must be submitted to the Program in order for the request to be valid.

### **Jury Service**

In most states, including Georgia, enrollment as a full-time student in an accredited educational program is a valid reason to be excused from jury duty. In the event that a student will not be excused from a jury summons or jury duty, then the student must request to be absent as soon as jury service notification is received. A copy of the communication from the jurisdiction issuing the jury summons must accompany the request to be absent. There will be no grade penalties for a jury duty absence. However, clinical rotation assignments and the 2500-clinical-hour minimum must still be met in order to be eligible for graduation.

### **Bereavement**

Bereavement leave may be granted for attendance at a funeral or comparable service; related travel time; and time necessary to conduct arrangements or other related, necessary business. Absence may be approved for up to five days per occurrence for an immediate family member identified as parent, grandparent, step-parent, legal guardian, parent-in-law, spouse, same-sex domestic partner, child, step-child, grandchild, legal ward, or sibling. A request to be absent must be submitted as soon as dates for the leave are known. Approval for this leave, including length of time for the absence, is solely at the discretion of Program Directors. The amount of time granted depends on the relationship the individual

has with the deceased, the individual's level of responsibility for arrangements, travel time needed, and other relevant circumstances. Should additional time be required in excess of bereavement leave, the student may request personal days.

### **Mission Trips, Service Projects, and Associated Travel**

The Anesthesiology Program encourages students to participate in service activities at home and abroad. However, the Program does not currently have any elective rotations in mission or service or any rotations outside the United States.

The Program will support – within the guidelines below – senior students who wish to personally participate in mission trips or service projects while they are enrolled in the Anesthesiology Program at Emory University.

No later than 90 days prior to a mission trip or service project, the student must apply for leave for the project by submitting complete information on that project:

- Sponsoring organization
- Sponsoring physician
- Complete name, contact information, and specialty of the physician who will be present during the service or mission project
- Location of the project
  
- Dates of the project, including travel dates
- The student's role in the project

A student who is *personally participating* in a mission trip or service project must be aware of the following limitations:

- Students are NOT covered by Emory's malpractice/liability insurance.
- Students are NOT covered by Emory's travel insurance.
- Emory's needle stick policy will NOT apply. The needle stick hotline may respond to a student regardless of where they are, but Emory will not provide service to students who are serving at a facility with which Emory University does not have a clinical rotation contract.
- The student should confirm that his/her student health insurance or personal health insurance is in effect and will cover injuries/illness sustained during the project and will cover medevac from the location of the mission trip or service project back to an appropriate medical facility in the United States.
- The student will be responsible for making claims through the student health policy or his/her private insurance policy for injury or illness sustained during the mission trip or service project and for medevac.

Any student undertaking a project abroad is encouraged to contact EHC TravelWell to be certain that all vaccinations and other medical preparations are complete well before time for out-of-country travel.

Clinical hours credit for time and service on the project may be awarded if the following requirements are met:

- The physician on the project is an Emory faculty member or the physician has been pre-approved by Emory University, which will require the physician submitting a CV.
- Learning objectives are in place prior to the project.
- The physician confirms that the learning objectives were met during the project.

### **Violations of Policy**

Any violation of policies governing absences or requests to be absent will result in a grade penalty. For each violation of policy, two points will be deducted from that semester's clinical grade. Deducted points are cumulative for the duration of the degree program; ie, deducted points carry over from semester to semester.

#### Example

In fall semester, one violation results in two penalty points. The student, who otherwise would have had a clinical grade of 89 (B) now has a clinical grade of 87 (still a B). In spring semester there are no violations, but in summer semester this student has two violations and receives four penalty points. Her summer clinical grade would have been 84 (B) but now is 78 (C); ie,  $84 - 4$  [new penalty points] -  $2$  [existing penalty points].

Serious violations or repeat violations represent misconduct and may result in probation or dismissal from the Anesthesiology Program.

### **Timekeeping System**

The Program uses a timekeeping system (Chronotek) to monitor attendance at clinical sites. All students are required to clock in and clock out each day that they have a clinical assignment scheduled. The student must clock in and out from the designated telephone at their assigned clinical site.

Allowing another person to clock in or out of the system for a student or clocking in or out for another student represents misconduct and is grounds for immediate suspension from clinical activity.

If a student neglects to clock in or clock out or uses a phone other than the designated phone at their assigned clinical site, then he/she must submit an Attendance Exception Report within 48 hours.

Failure to submit an Attendance Exception Report will result in loss of clinical hours for the day for which the report is missing.

## ***STANDARDS OF PROGRESS***

### **GRADING AND REPORTING**

#### **Lecture Course Grades**

Each course instructor is responsible for calculating, assigning, and reporting grades for his/her course. If a student has a question about the grade assigned for a course, the student should email his/her question to that course's instructor.

### **Laboratory and Simulation Course Grades**

The laboratory faculty and HPS faculty are responsible for assessing student performance and for calculating, assigning, and reporting grades for labs and for HPS. Student performance in labs and HPS is based on

- attendance, including tardiness and continued presence
- preparation for the scheduled exercise
- understanding and applying procedures
- understanding and operating equipment
- understanding and applying principles of physiology, pharmacology, monitoring, and clinical methods
- desire to learn
- participation
- conduct

### **Conference Course Grades**

The conference director is responsible for assessing student performance and for calculating, assigning, and reporting grades for conferences. Student performance in conferences is based on

- attendance, including tardiness and continued presence
- understanding topics
- desire to learn
- participation
- conduct

### **Seminar Course Grades**

The seminar director is responsible for assessing student performance and for calculating, assigning, and reporting grades for seminars, including small discussion groups. Student performance in seminars is based on

- attendance, including tardiness and continued presence
- preparation
- quality of presentations
- understanding topics
- desire to learn
- participation
- conduct

### **Clinical Course Grades**

Clinical anesthesia training begins during the first week and continues through the last week of the degree program. Clinical anesthesia training is a continuum during which evaluations occur daily, weekly, and monthly – depending upon the evaluation tools.

### **Clinical Evaluations**

Evaluation of student performance in clinical includes but is not limited to

- attendance, including tardiness and continued presence
- knowledge

- skills
- multitasking
- problem solving
- completion of tasks
- desire to learn
- participation
- conduct
- overall performance

A clinical evaluation is mandatory for every day that a student has a clinical assignment – with certain exceptions (eg, Pain Service). The clinical evaluation system utilizes an electronic evaluation instrument which transmits evaluation data to the Program. Failure to submit clinical evaluation data within seven (7) calendar days of a clinical assignment will result in no clinical hours being awarded for each clinical day for which the clinical evaluation data are missing.

### **Clinical Attendance**

The Program uses Chronotek to monitor each student's attendance on every clinical assignment and clinical hours reported on all clinical assignments. Each student must use the designated phone at the clinical site to sign in and sign out of the Chronotek system.

Failure to use the designated clinical site phone will result in no clinical hours being posted for the clinical day for which the designated phone was not used. Within a semester, every three days of failure to use the designated clinical site phone will result in reduction of that semester's clinical grade (Anes 561 or Anes 660) by one letter grade.

### **Reconciliation of Assignments, Attendance, and Evaluation Data**

Each student's attendance and clinical evaluations must match the clinical assignment made by the Program. Assignments, attendance, and evaluation data are reviewed during each semester. Repeat submission problems or inconsistencies or irregularities in clinical time and/or evaluation data represents misconduct and may be grounds for probation or dismissal.

### **Key Clinical Evaluations**

Students may be assessed by key clinical evaluators at each clinical rotation site. Input from these practitioners will be incorporated into clinical grades and into the information provided to the Clinical Review Committee to assist in determining the student's readiness to progress to the next clinical level.

### **Comprehensive Examinations**

Comprehensive examinations are an integral part of clinical grading.

### **Clinical Grades in the First Year**

Clinical course grades in the first year (ANES 561A,B,C) are derived from daily evaluations of clinical performance; performance on comprehensive examinations; participation and performance in Small Discussion Groups; and performance in Clinical Concepts Conferences, including quizzes. Weighting for each grade



component varies by semester (table below). Small discussion groups may not occur every semester, and weighting will be adjusted accordingly.

<b>Semester</b>	<b>Clinical Evaluation</b>	<b>Comprehensive Examinations</b>	<b>Sm Group Discussions</b>	<b>Clinical Concepts Conference</b>
Fall	22	68	7	3
Spring	32	58	7	3
Summer	40	50	7	3

### **Clinical Grades in the Senior Year**

Clinical course grades in the senior year (ANES 660A,B,C) are derived from two components of daily evaluations. A grid score (50%) comes from preceptors' scoring evaluation questions in the electronic evaluation instrument. A comments score (50%) is derived from additional feedback provided by preceptors. Comments are scored by a Program faculty committee based on each student's aggregation of feedback during the semester; comment scoring is blinded to the students' names. A rubric is used to assign a score for the comments; eg, an 88 is assigned to comments that reflect a student is performing satisfactorily and meeting expectations.

### **Assignment of Clinical Grades**

The Anesthesiology Program reserves the right to have clinical grades assigned by the Program Directors and Program faculty based upon their review of a student's clinical evaluations, clinical comments, and communications from clinical sites and preceptors. Conduct issues may override the grade assignment that would otherwise have been made based solely on calculation of daily clinical evaluation data.

The Program makes clinical assignments based on each clinical site's requirements pertaining to day, evening, night, and weekend rotations and call. Variance from the assignment must be submitted to the Program on an Alternate Clinical Attendance Form. If a student changes the format of a rotation without approved alternate attendance, the student's letter grade in clinical anesthesia for that semester will be decreased by one letter grade.

## **GRADING**

### **Grade Scale**

The following letter grades, their indication of performance, and assigned quality points are used by the Anesthesiology Program:

A	excellent	4
B	above average	3
C	average	2
D	below average	1
F	failing	0 - no course credit or residence credit
W	withdrawal without penalty	0 - no course credit or residence credit
WF	withdrawal while failing	0 - no course credit or residence credit

S	satisfactory	
U	unsatisfactory	0 - use restricted to certain courses
IP	in progress	I incomplete

The notation IP for in progress will be submitted to the Registrar's Office when work in a course extends beyond one semester.

The notation I for incomplete will be submitted when course work, examinations, or clinical assignments have not been satisfactorily completed within a semester. If the course work and/or examinations have not been completed within 10 days of the beginning of the next semester, a final grade of F will be assigned. An incomplete will continue for any ANES 660 course until the clinical hours target has been met for the semester in which the incomplete was assigned.

### **Grade Reporting**

Grades for basic science courses are reported to the Registrar by each basic science department. Grades for Anesthesiology Program courses are reported to the University Registrar from the Program Office. Course grades usually are available to each student within a week following the close of each semester. Students may log into the University OPUS system and view their grades reported to the Registrar's office at any time.

## **Continuation, Interruption, Termination of the MMSc Degree Program**

### **Continuation**

The faculty's judgement of a student's suitability and fitness for continuation in the Program is based upon academic performance, clinical competence, and standards of conduct appropriate for a health professional, including trustworthiness; responsibility to duty; appropriate interaction with patients, patients' families, and other healthcare professionals; and professional demeanor.

### **Advancement**

The Progress, Promotions, and Review Committee reviews the grades and academic conduct of each student during each semester. The Clinical Review Committee reviews the clinical performance and clinical conduct of each student during each semester. Throughout the degree program, each student's advancement to the next semester must be approved by the Progress, Promotions, and Review Committee and the Clinical Review Committee.

### **Continuation Requirements**

In order to continue in the Master of Medical Science Program to the next semester or to graduate from the Master of Medical Science Program at the end of the degree program, a student must

Receive a letter grade of C or above in every course;  
AND

Exhibit satisfactory clinical performance as judged by the faculty of the MMSc Program;

AND

Have conduct and ethical behavior that in the judgement of the MMSc Program faculty meet those standards essential for an anesthesiologist assistant practitioner.

**Dismissal**

If a student meets any of the following criteria within a semester, then that student shall be dismissed from the Master of Medical Science Program:

Receipt of two or more grades below C;

OR

Receipt of one D or one F following return from a leave of absence for academic reasons;

OR

Clinical performance judged to be unsatisfactory by the Clinical Review Committee and endorsed by the faculty of the MMSc Program;

OR

Conduct or ethical behavior that, in the judgement of the MMSc Program faculty, does not meet the standards essential for an anesthesiologist assistant practitioner.

OR

Failure to complete course work or clinical assignments.

**First Year: Leave of Absence for Academic Reasons**

The didactic curriculum of the Master of Medical Science Program is tightly integrated and scheduled for the four continuous semesters of the first year. The senior clinical year of the educational program is comprised of clinical rotations throughout the United States. Anesthesiology didactic courses and basic science didactic courses are scheduled on an annual basis. All didactic courses must be successfully completed before a student may advance to the senior year.

If a first-year student meets either of the following criteria in any semester of the first year, then that student may be offered a leave of absence for academic reasons:

Receipt of D in any course;

OR

Receipt of F in any course.

In order for the student meeting the above criteria to be offered a leave of absence for academic reasons, then that student must complete all course work in the semester in which he/she meets the criteria for the leave of absence for academic reasons.

The leave of absence will begin effective at the end of the semester in which the student receives the D or F. The student may then return to the Master of Medical Science Program at the beginning of the following summer semester to restart the educational program.

If the student elects to return to the Master of Medical Science Program, then he/she must meet the Program's requirements for continuation.

The alternative to leave of absence for academic reasons is dismissal from the Program.

### **Financial Aid Implications**

Within three days of taking a leave of absence as described above, the student must contact the Financial Aid Office of Emory University and make all necessary arrangements concerning financial aid and repayment of same. Applicable rules and regulations are available from the Financial Aid Office. The student should contact Emory's Office of Financial Aid for complete information and to obtain specific answers to questions regarding financial aid and leave of absence.

### **Senior Year: Probation and Extension of the Educational Program**

For senior students, receipt of a D in any clinical series (ANES 660A,B,C; ANES 680A,B,C) will result in probation and automatic extension of the educational program by one semester. In order to continue in the MMSc Program beyond the semester in which the D was received or in order to graduate from the MMSc Program, then that student must meet the following requirements:

Receive a letter grade of C or above in all subsequent clinical courses (ANES 660A,B,C; ANES 680A,B,C);

AND

Maintain a semester GPA of 2.0 or higher in all subsequent semesters;

AND

Have an overall GPA of 2.0 or higher at the end of all subsequent semesters;

AND

Meet all other Program requirements for continuation.

## **Academic Appeals**

A student may appeal a course grade within 10 days of the University's posting of the grade. The appeal must be in writing to the Progress, Promotions, and Review Committee and must include the basis for appeal. The decision of the Progress, Promotions, and Review Committee is final in the matter unless the grade will result in the dismissal of the student.

If the Progress, Promotions, and Review Committee's decision is to uphold a grade will result in dismissal, then the student may appeal that the Committee's decision within 10 days to the Executive Associate Dean for Medical Education and Student Affairs of the Emory University School of Medicine. The appeal must be in writing and must include the basis for appeal. The Executive Associate Dean's decision on the appeal is final in the matter.

## ***TUITION AND FEES***

The cost of attending Emory University includes tuition and other academic charges, living expenses, and incidental expenses, such as textbooks and supplies. Charges for summer semester are the same as for any other term unless specified otherwise.

As costs continue to rise throughout the economy, the University anticipates that educational costs will be adjusted from time to time. The University reserves the right to revise tuition and other charges when necessary.

### **Tuition and Fees for 2021-2022 (per semester)**

Tuition for Anesthesiology Program	\$17,767
Activity Fee (fall and spring semesters)	\$98
Activity Fee (summer semester)	\$0
Athletic Fee (fall and spring semesters)	\$150
Athletic Fee (summer semester)	\$59
Mental Health and Counseling Fee	\$94
Immunization and Disability Fee	\$125
Technology Fee	\$150
Transcript Fee - First Semester Only	\$70
Clinical Administrative Fee	\$175
Housing Fee	\$450

The Immunization and Disability Fee covers the cost of administering the immunizations, the PPD tuberculin skin tests, and the care and treatment of students with positive PPD conversions, as well as the cost of long-term disability insurance. Tuition charges cover tuition, use of all facilities of instruction, general medical and health services, and library services.

If a student remains in school and drops a portion of work after the last day for change of courses, the student will not receive a refund for the work dropped. Students who have completed course and residence requirements for their degree but remain in residence to complete special projects (without obtaining credit) or to

prepare for examinations must register at the beginning of each semester. Such registration requires a \$500 fee.

## ***POLICY STATEMENT ON REFUNDS***

Students who withdraw from the curriculum for any reason may qualify for a tuition refund on a semester basis. Tuition refunds will be calculated as follows:

<b><u>Withdrawal During</u></b>	<b><u>Charge</u></b>	<b><u>Credit</u></b>
First week (through drop/add)	0%	100%
Second week	20%	80%
Third week	40%	60%
Fourth week	60%	40%
Fifth week	80%	20%

*There will be no refunds after the fifth week of any semester.*

### **Audit Courses**

The same charge for credit courses applies. Audited courses may not be established for credit by examination nor may audit courses be transferred to credit courses after the first week of classes.

### **Deferred Payment/Emory Payment Plan**

The Emory Payment Plan is available to qualified students who wish to divide tuition fees into scheduled payments. A \$60 service fee is charged to participate in the Emory Payment Plan. The fee is added to the second payment.

Instructions are given for deduction of loans and for University-administered scholarships in listing the amount due, which is to be paid in four installments each semester according to the Emory Payment Plan Schedule.

**To set up a payment plan**, contact Student Financial Services at (404)727-6095, visit [www.emory.edu/studentfinancials](http://www.emory.edu/studentfinancials), or sign up in OPUS through the Student Center.

## ***FINANCIAL ASSISTANCE***

Prospective students who need financial assistance should begin early to investigate aid available to them. They should complete the Free Application for Federal Student Aid (FAFSA) as soon as possible. The FAFSA can be accessed on the web at [www.fafsa.ed.gov](http://www.fafsa.ed.gov). The Emory University school code is 001564. Students begin the Anesthesiology program in the summer semester, which is the last semester of the financial aid year. Students beginning in Summer 2020 must complete a 2021-2022 **FAFSA** for Summer 2020 as well as a 2021-2022 **FAFSA** for Fall 2020, Spring 2021 and Summer 2021. Further information regarding financial assistance for can be accessed at <http://med.emory.edu/education/financial/dpt/index.html>.

All matriculating students with loans must complete a mandatory online entrance interview as well as an exit interview upon graduation.

### **Scholarships**

There are a limited number of scholarships for Anesthesiology students based on financial need. Eligibility is based on information from your FAFSA, and no additional application is required. A few merit scholarships may be awarded to incoming students based on merit, and these do not require an application, either.

### **Health Professions Tuition Loans**

Students are eligible to borrow from the University to assist in paying tuition. No additional application is required.

### **Federal Loans**

The Office of Financial Aid will determine a student's eligibility for federal direct Stafford Loans. Students who wish to accept those loans will be given instructions on how to complete the loan promissory note when they receive their financial aid award letter. Students interested in the federal direct GradPLUS Loan for additional funds should wait until they receive their initial award letter, then complete a GradPLUS Request Form that can be downloaded from the Office of Financial Aid website.

### **Private loans**

Students who need additional funds beyond the amount awarded by the Financial Aid Office may apply for private student loans. These loans require the borrower to undergo a credit check, and the interest rate is determined by the student's credit score. More information about these and all other student loans is available on the Financial Aid Office website at <http://www.studentaid.emory.edu/types/loans/private.html>

### **Veterans Benefits**

Students eligible for Veterans Administration Benefits should notify the Office of Financial Aid and coordinate this Information with the Office of the Registrar. For additional information, contact the Associate Director of Financial Aid & Scholarships at the School of Medicine at (404) 727-5683.

### **Other Scholarships**

Some professional organizations for people in the health care industry offer scholarship opportunities. Students can research these programs by searching on the web, by talking to faculty members in their academic program and by referring to the scholarship information in the Orientation Manual. In most cases, a separate application would be supplied by the sponsor of the scholarship.

# ACADEMIC CALENDAR\*\* - MATRICULANTS OF 2021

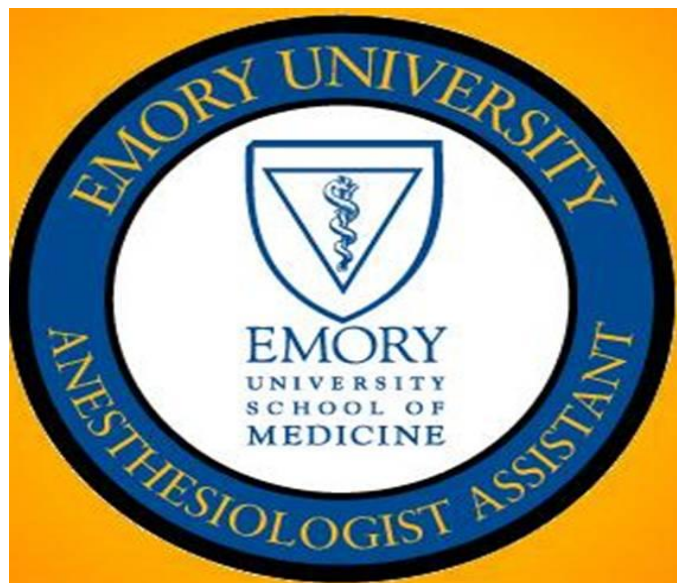
Fall 2021	
Orientation	08/23/21
Fall Start	08/26/21
Labor Day Holiday	09/06/21
Thanksgiving Break	11/25/2021 - 11/26/2021
Last Clinical/Classes	12/10/21
Fall Finals	12/13/2021 - 12/17/21
Winter Recess	12/20/2021 - 01/03/2022
Spring 2022	
Spring Start	01/04/22
White Coat Ceremony	01/09/22
MLK Day Holiday	01/17/22
Spring Break	03/07/2022 - 03/11/2022
AAAA 2022	TBD
Last Clinical/Classes	04/29/22
Spring Finals	05/02/2022 - 05/06/2022
Summer 2022	
Summer Start	05/09/22
Memorial Day Holiday	05/30/22
Summer Break	07/4/2022 - 07/8/2022
Last Clinical/Classes	08/12/22
Summer Finals	08/15/2022 - 08/19/2022
Fall Break	08/22/2022 - 08/26/2022
Fall 2022	
Fall Start	08/29/22
Labor Day Holiday	09/05/22
Thanksgiving Holiday	11/24/2022 - 11/25/2022
Last Day of Clinical/Classes	12/09/22
Fall Finals	12/12/2022 - 12/16/2022
Winter Recess	12/19/2022 - 01/02/2023

Spring 2023	
Senior Clinical Start	01/03/23
MLK Day Holiday	01/16/23
AAAA 2023	TBD
Last Day of Spring 2023	05/12/23
Summer 2023	
Summer Start	05/15/23
Memorial Day - Summer Break	05/29/2023 - 06/02/23
Independence Day Holiday	07/04/23
Last Day of Summer 2023	08/18/23
Fall 2023	
Fall Start	08/21/23
Labor Day - Fall Break	9/04/2023 - 09/08/2023
Thanksgiving Break	11/23/2023 - 11/24/2023
Last Day of Clinical	12/08/23
*Graduation	12/15/23

\* University calendars for FA22 - FA23 not published

Revised: 06/03/2021

\*\*Calendar is subject to change at the discretion of the program directors and Emory University.





# ACADEMIC CALENDAR - MATRICULANTS OF 2018

Fall 2020		Spring 2022	
Orientation	08/24/2020	Senior Clinical Start	1/3/2022
Fall Start	8/26/20	MLK Day Holiday	1/7/2022
Labor Day Holiday	9/7/20	AAAA 2022	TBD
Thanksgiving Break	11/26/2020 - 11/27/2020	Last Day of Clinical	05/06/2022
Last Clinical/Classes	12/11/20		
Fall Finals	12/14/2020 - 12/18/2020		
Winter Holidays	12/19/2020 - 01/3/2021		
Spring 2021		Summer 2022	
White Coat Ceremony	TBD	Clinical Start	05/09/2022
Spring Start	1/4/21	Memorial Day Holiday	05/30/2022
MLK Day Holiday	1/18/21	Independence Day Holiday	07/04/2022
Spring Break	3/8/2021 - 3/12/2021	Last Day of Clinical	08/19/2022
AAAA 2021	TBD	Fall Break	08/22/2022 - 08/26/2022
Last Clinical/Classes	4/30/21		
Spring Finals	5/03/2021 - 5/7/2021		
Summer 2021		Fall 2022	
Summer Start	05/10/21	Fall Start	08/29/2022
Memorial Day Holiday	5/31/21	Labor Day	09/05/2022
Summer Break	07/5/2021 - 7/9/2021	Thanksgiving Break	11/24/2022-11/25/2022
Last Clinical/Classes	8/6/21	Last Day of Clinical	12/14/2022
Graduation 2021	8/7/21	Graduation 2020	12/17/2022
Summer Finals	8/09/2021 - 8/13/2021		
Fall Break	8/16/2021 - 8/20/2021		
Fall 2021			
Clinical Start	8/23/21		
Labor Day Holiday	9/6/21		
Thanksgiving Holiday	11/25/2021-11/26/2021		
Last Day of Clinical	12/17/2021		
Winter Holidays	12/20/2021-12/31/2021		

**\*CALENDAR IS SUBJECT TO CHANGE AT THE DISCRETION OF THE PROGRAM DIRECTORS. OTHER SCHEDULED ITEMS WILL BE POSTED TO THE GOOGLE CALENDAR. PLEASE DO NOT ARRANGE TRAVEL PLANS FOR BREAKS/HOLIDAY BEFORE 5PM.**

# COURSES

The Master of Medical Science Program in Anesthesiology offers course work and clinical rotations in a dynamic curriculum. Individual courses and clinical rotations are subject to changes in name, number, semester offered, and location. *Students spend approximately 2500 hours in clinical rotations during the 27 month program.*

## **Required Anesthesiology Courses**

### **ANES 505A. Human Patient Simulation Lab I.**

Summer. Credit 5 hour. Introduction to the operating room; anesthesia machine; basic drug doses and syringe preparation; airway equipment preparation; standard physiologic monitoring; basic concepts of anesthesia induction, maintenance, and emergence; basic airway management; basic hemodynamic management; anesthesia record keeping; basics of the preoperative patient data base and anesthetic plan; basic vascular access.

### **ANES 505B. Human Patient Simulation Lab II.**

Fall. Credit 1 hour. Basic anesthesia procedures and concepts. Anesthetic simulation cases, including decision making and critical incidences related to hemodynamics, airway management, cardiac problems, as well as equipment problem solving.

### **ANES 505C. Human Patient Simulation Lab III.**

Spring. Credit 1 hour. Spinal and epidural anesthesia; advanced vascular access using ultrasound; vasoactive drugs used in the management of hemodynamically compromised patients. Semester ends with a capstone simulation requiring each student to bring together their knowledge and experience to successfully conduct and complete an anesthetic.

### **ANES 507. Introduction to Anesthesia Practice.**

Summer. Credit 6 hours. Introduction to concepts and techniques of general anesthesia, regional anesthesia, and monitored anesthesia care. Includes principles of airway management, anesthesia equipment, monitoring, patient evaluation, pharmacology, and physics.

### **ANES 509. Anesthesia Practice Seminar.**

Summer. Credit 1 hour. Weekly small group case discussions, including the concepts and techniques presented in ANES 507. Anesthesia preop consultation and anesthesia records – paper and electronic – are emphasized.

### **ANES 512A,B. Principles of Airway Management I, II.**

Fall, Spring. Credit 1,1 hours. Structure, function, pathophysiology, and diseases of the human airway. Basic and advanced principles of elective and emergent airway management, including equipment and techniques.

### **ANES 513. Anesthesia Delivery Systems and Equipment.**

Summer. Credit 1 hours. Compressed gases, gas distribution systems, anesthesia machines, breathing circuits, anesthesia ventilators, waste-gas scavenging, respiratory care equipment, resuscitation equipment.

**ANES 516A,B. Pharmacology in Anesthesia Practice I, II.**

Spring, Summer. Credit 1 hour each. Drugs specifically related to the practice of anesthesia, including inhaled anesthetics, narcotics, barbiturates, benzodiazepines, anticholinesterases and anticholinergics, neuromuscular blockers, adrenergic agonists and antagonists.

**ANES 525. Applied Anatomy for Anesthesia Practice.**

Fall Semester. 2 credit hours. Gross anatomy, histology, and medical imaging. Anatomic terms, structures, and relationships emphasizing functional significance and application in clinical anesthesia practice. Laboratory provides demonstrations on models, prosections, and digital media. Course topics align with ANES 536A Anesthesia Practice I and ANES 505B Human Patient Simulation II.

**ANES 530. Physics for Anesthesia Practice.**

Summer. Credit 2 hours. Physical principles and processes applied to the practice of anesthesia. Dimensional analysis; work, energy, and power; gas laws; fluid mechanics; heat transfer; vaporization; solubility, diffusion, and osmosis; fires and explosions; laser and x-ray radiation; applied electric circuit theory; time constants.

**ANES 535A,B. Principles of Monitoring and Instrumentation I, II.**

Spring, Summer. Credit 1, 2 hours. Principles, applications, and interpretation of monitoring used in anesthesia practice: electrocardiography; invasive and non-invasive blood pressure; oximetry; cardiac output; hemodynamic calculations; respiratory gases; ventilation; ICP; electroencephalography; temperature; renal function; neuromuscular blockade; ultrasound; echocardiography; point-of-care instrumentation.

**ANES 536A. Anesthesia Practice I.**

Fall. Credit 1 hour. History of anesthesia; types of anesthesia; anesthesia care team model; universal precautions and infection control; OR layout and anesthesia setup; AA practice and professionalism; intravenous catheterization; intravenous fluids; arterial cannulation; ASA-standard monitors; induction, maintenance, and emergence from anesthesia.

**ANES 536B,C. Anesthesia Practice II, III.**

Spring, Summer. Credit 4 hours each. Systems-based approach to physiology and pathophysiology in anesthesia practice, including applications and effects of general and regional anesthesia. Emphasizes the integration of preoperative evaluation, planning, and anesthetic management for surgical patients. Includes risk management and critical incidents in anesthesia.

**ANES 540A,B,C. Clinical Methods.**

Fall, Spring, Summer. Credit 1 hour each. Preoperative patient evaluation, including history taking, physical examination, chart review, and select laboratory, radiologic, and other testing. Basic EKG interpretation.

**ANES 561A,B,C. Clinical Anesthesia I, II, III.**

Fall, Spring, Summer. Credit 3 hours each. Foundation of the clinical practice of anesthesia gained through one-on-one supervised instruction in the operating room and other clinical locations. Grades for the 561 Clinical Anesthesia series include input from clinical evaluations; CCC participation and quizzes; and participation and performance in small discussion groups.

**ANES 611A,B,C. Senior Seminar in Anesthesia.**

Fall, Spring, Summer. Credit 1 hour each. Patient presentations by students. Literature review. Anesthesiology Department grand rounds.

**ANES 660A,B,C. Clinical Anesthesia I, II, III.**

Fall, Spring, Summer. Credit 12 hours each. Clinical rotations in anesthesia, including all subspecialty areas, preop clinic, pain, critical care medicine. Students must be at 90 percent of the target for clinical hours for the semester in order to receive a grade in ANES 660 for that semester; otherwise an incomplete (I) will be recorded until the target is met.

**Required Basic Science Courses**

Basic science courses are taught in their respective departments in the Emory University School of Medicine.

**BAHS 502. Physiology.**

Fall semester. Credit 4 hours. Systems approach to normal function of the human body, including relevant information on anatomy. Weekly problem solving sessions, regular laboratory exercises, and clinical application to systemic disorders.

**BAHS 504. Pharmacology.**

Spring Semester. Credit 3 hours. Basic principles of drug action; absorption, distribution, metabolism, and excretion of drugs; mechanisms of drug action; toxicity. Basis for the use of medicines in pharmacologic therapy of specific diseases.

**Elective Anesthesiology Courses****ANES 596R. Individual Tutorial**

Each semester. Credit variable. Provides opportunity for in-depth study of a curricular topic under the direction of a faculty member.

**ANES 597R. Individual Directed Study**

Each semester. Credit variable. Provides opportunity for in-depth study of a non-curricular topic under the direction of a faculty member.

**ANES 695R. Individual Clinical Practicum**

Each semester. Credit variable. Provides opportunity for clinical experience in a subspecialty area under the direction of a faculty member.

**ANES 697R. Individual Directed Study**

Each semester. Credit variable. Provides opportunity for advanced study under the direction of a faculty member.

**ANES 699R. Individual Research**

Each semester. Credit variable. Provides opportunity for laboratory or clinical research under the direction of a faculty member.

# GENETIC COUNSELING TRAINING PROGRAM

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The Emory University School of Medicine Genetic Counseling Training Program was established in 2011, and is the only program of its kind in the state of GA.

Graduates receive a Master of Medical Science (MMSc) degree in Human Genetics and Genetic Counseling and are qualified to sit for the American Board of Genetic Counseling (ABGC) certification examination. **100% of Emory graduates taking the ABGC boards have passed on their first attempt.**

The program offers a unique combination of cutting-edge coursework, extensive and varied clinical experiences, and a research-based Focus Internship. The 5-semester internship allows the student in-depth exploration of a specialty area within the settings of public health genomics, clinical genetics practice and research, and laboratory genetic services.

The Emory Genetic Counseling Training program is in the Department of Human Genetics on the beautiful Emory Campus in Atlanta, Georgia. The Emory Department of Human Genetics ranks in the top 15 departments in the country, with a full-fledged basic research faculty and a comprehensive medical genetics division which includes Emory Genetics Clinics and Emory Genetics Laboratory. The department also provides training in human and medical genetics for graduate students, laboratory fellows, PAs, medical students, and residents.

Emory University was recently ranked 17th among 500 U.S. institutions of higher education by the Wall Street Journal, and 20th in the 2017 Best Colleges guidebook from U.S. News & World Report.

## Accreditation

The Genetics Counseling Training Program has received provisional accreditation by the American Board of Genetic Counseling (ABGC). Program graduates are eligible to sit for the ABGC certification exam. The Genetic Counseling Training Program will be eligible for full accreditation in 2015.

## Vision and Mission

**Vision:** The Genetic Counseling Training Program at Emory University will transform students through a variety of scholarly activities into practitioners, leaders, and advocates for the advanced role of genetic counseling within an integrated care team model.

**Mission:** To provide an innovative and rigorous program of training that prepares genetic counselors to serve the needs of the healthcare community today while paving the way for incorporating the genomic medicine advances of tomorrow.

## **PROGRAM ADMINISTRATION/FACULTY/STAFF**

**Program Director:** Cecelia A. Bellcross, PhD, MS, CGC

**Assistant Program Director:** Lauren Lichten, MS, CGC

**Co-Assistant Director:** Nadia Ali, PhD

**Program Medical Director:** Hong Li, MD, PhD

### **Primary Faculty/Directors**

Kathryn Garber, PhD

Dawn Laney, MS, CGC, CCRC

Christine Stanislaw, MS, CGC

Yuan Xue, MS, PhD, FACMG

## **2021 Updates**

We will continue to have virtual interviews this cycle. We have found them to be very effective and cost-saving.

Currently we are still requiring the GRE. Please note that we do not have specific cut offs, it is just one piece of information we consider along with a very holistic view of the applicant. Your narrative is the most important factor we consider.

## **ADMISSIONS**

### **DEADLINE**

The deadline for submitting an application for 2021 entry is **December 17, 2021**. *Emory will not review the applications of individuals who have not registered for the Match.*

Prospective students will be informed when their application packet is complete, and notification of applicant selection for the interview process will occur by **January 31, 2022**.

## **ADMISSION CRITERIA**

### **ELIGIBILITY REQUIREMENTS**

To be eligible for admission, applicants must:

- Hold a baccalaureate degree from an accredited college or university
- Register for the Genetic Counseling Admissions Match with National Matching Services (NMS)
- Submit official transcripts from all institutions of higher education attended (update with Fall 2020 transcripts when available)
  - Minimum GPA for acceptance of 3.0 on a 4.0 scale
- Submit GRE scores (general required, specialty optional) obtained within the last 5 years

- Demonstrate successful completion of course prerequisites:
  - 1 semester or quarter of genetics
  - 1 semester or quarter of psychology (preferably counseling psychology or developmental psychology)
  - 1 semester or quarter of statistics
  - 1 semester or quarter of biochemistry

**Note:** Genetics must be completed no later than the fall semester of the year of application. One other prerequisite can be taken the spring following, but applicants will be required to demonstrate proof of enrollment and satisfactory progress to be considered for admission.

If you have other questions regarding prerequisites [email us](#).

## ***INTERNATIONAL STUDENTS***

International students are welcome to apply to the Emory Genetic Counseling Training Program. Applicants who attended undergraduate or prior graduate programs outside of the United States must submit an official Credentialing Evaluation Report (e.g. [WES](#)) from each institution attended.

The [TOEFL](#) is also required.

Specify Code No. 5187  
Emory University, Allied Health Programs.

## ***APPLICATION COMPONENTS***

- Application Form
- Resume or Curriculum Vitae
- Photograph (head and shoulders)
- [Narrative Statement](#) (Be sure to include page numbers and your name on every page)
- \$75.00 non-refundable application Fee (payment via credit card only, link in the online application)
- Official transcripts (request mailing directly to program address)
- GRE Scores (General required, Specialty optional)  
The test must have been taken within the past five years and must be taken early enough so that official scores are received in the GC Training Program office by the application deadline. Testing information may be obtained from the [Graduate Record Examination](#)

When applying to take the GRE, please specify Code No. 5187, Emory University, Allied Health Programs

- Four letters of Recommendations
  - Requirements
    - 2 academic (at least 1 from the hard sciences)
    - 1 employer/work-study supervisor



- 1 supervisor/mentor of genetic/supportive counseling or volunteer experience
- Completed & signed recommendation forms/letters must be uploaded into the online application system from the recommender directly to the training program.
- Confirmation that the applicant has registered for the Genetic Counseling Admissions Match through National Matching Services (NMS).

## ***MATCH PROCESS***

The Emory Genetic Counseling Training Program participates in the Genetic Counseling Admissions Match through National Matching Services (NMS). The GC Admissions Match has been established to place applicants into positions in masters-level genetic counseling programs that are accredited by the Accreditation Council for Genetic Counseling (ACGC). The Match uses a process that takes into account both applicants' and programs' preferences.

**All applicants must first register for the Match with NMS before applying to participating genetic counseling graduate programs.**

### **How Does the Match Work?**

At the conclusion of all program interviews, both applicants and programs will submit ranked lists of preferred placements to NMS according to deadlines posted on the NMS website. The binding results of the Match will be released to both applicants and programs simultaneously in late April.

Please visit the NMS website to register for the match, review detailed information about the matching process, and to view a demonstration of how the matching algorithm works.

## ***IMPORTANT DATES***

- Application Open Dates: September 8, 2021
- Application Deadline: December 15, 2021, to be considered eligible for Fall 2022 admission
- Application Fee: \$100 – The fee must be paid by credit card when you submit your application by the deadline of December 15, 2021, to be considered for an interview.
- 2021-2022 Academic Year (***Program Specific***)
  - August 17 - August 20 (Preterm)
  - Fall Term 2020: Aug 26 - Dec 18
  - Spring Term 2021: Jan 11 - May 10

## ***CREDIT POLICY FOR PRIOR EDUCATION AND TRAINING***

- The GC Training program does not award academic credit towards the degree for courses taken on a non-credit basis.

- The GC Training program will consider academic course credit for transfer on a case-by-case basis if:
  - The course was completed within the last 3 years
  - The course was obtained at the graduate level in an accredited institution
  - The student received a grade of "B" or better
  - The syllabus is available for review and approval by the Program Directors and instructor of the equivalent Emory program course
- Credit will not be granted for clinical genetic counseling experiences occurring outside of the Emory GC Training Program.
- The GC Training Program utilizes the **Carnegie system** in determining course, clinical, and focus internship credit allocation.

## ***ENROLLMENT POLICY***

A new class of 10 students is admitted each year. To be enrolled in the program, students must have submitted an application, completed an interview and been selected for admission to the program by the Admissions Committee. Students must also have completed all prerequisites and obtained an undergraduate degree prior to enrollment in the program.

## ***ATTENDANCE***

Attendance at all scheduled classes is required, unless the course instructor and Program Directors have approved alternative arrangements. Attendance is mandatory for all small group sessions, scheduled department case conferences and grand rounds. Attendance is mandatory for all examinations, both written and oral. Students are responsible for being present prior to the beginning of all examinations. Exams will begin ON TIME; students who arrive after an examination has begun may be refused admission to the examining room, thus jeopardizing their course grade.

Attendance on clinical rotation on the scheduled dates and time is mandatory and monitored carefully. Transportation and alternate childcare arrangements are the responsibility of the student. Under no circumstances may a student leave a clinical rotation without prior approval from the program director and designated clinical supervisor. Unless there is physical danger such a departure will be treated as abandonment of the rotation and subject to sanctions by the Program Directors, which may include dismissal from the program. All students are required to complete eight (8) clinical rotations. At least seven (7) of these must be Emory arranged and take place in the greater Atlanta area. Students are allowed to make arrangements for one out of town/non-Emory arranged clinical rotation during Summer II with the approval of the Program Directors.

Students are expected to adhere to the Focus Internship scheduled participation as pre-arranged with their focus mentor and approved by the Program Director. It is the responsibility of the student to communicate directly with their focus mentor regarding any absences or scheduling concerns, and to make arrangements to

make-up the time missed. Students are provided the opportunity for three (3) planned personal days during the clinical year, which must be approved no later than 2 weeks before the absence. No more than one personal day make be taken in any single rotation. Absences other than that for illness, emergency or a pre-approved personal day will not be tolerated and, in addition to requiring the time to be made up, will result in one course grade being deducted from the final grade for each day missed.

### **Reporting of Absences**

Student absences from scheduled clinical rotation days for illness or emergency must be reported within 8 hours to the Program Assistant Director. The student must provide the program with the name of his/her rotation and supervising genetic counselor, the reason for the absence, when he/she expects to return and a telephone number where the student can be reached. When absence due to illness extends beyond 48 hours, a signed physician's report may be required (from the University Student Health Service or from the student's personal physician). This is done primarily for the student's protection against any accusation of neglect or indifference, as well as to ensure that students have sought proper health care when appropriate. Written notification of personal day absences will be sent from the program to the individual genetic counseling supervisor when appropriate. Arriving late, leaving early or missing a clinic day will impact the student's rotation evaluation.

## **STANDARDS OF PROGRESS**

### **Requirement for the Master of Medical Science Degree in Human Genetics and Genetic Counseling**

To be eligible to receive the degree of Master of Medical Science in Human Genetics and Genetic Counseling from Emory University School of Medicine, students must:

- Students will be required to complete a minimum residency of 6 semesters of academic study (22.5 months).
- Students must receive approval for continuation each semester by the Program Directors based on satisfactory academic performance and professional conduct.\*
- Students must successfully complete all courses, clinical rotations, and focus internship experiences in the sequence outlined in *Curriculum Overview* within no more than three (3) years.
- Students must obtain a minimum of 75 credit hours with a cumulative GPA of 3.0 or greater.
- Students must successfully complete their Capstone Project as approved by a committee that includes their advisor, focus mentor and two additional faculty/staff members.

\*The judgment of the faculty as to the fitness of an applicant for continuation is based not only upon scholastic achievement alone but also upon knowledge of the applicant's character, professionalism, general attitude, and ability to master the genetic counseling core competencies.

## **Grading and Evaluation System**

### **Grades**

A, B, C, and S are passing grades for which credit is awarded. The grades of D and U indicate inadequate performance and credit will only be granted based on successful remediation and/or course repetition. F indicates failure for which no credit is granted; I indicates that the student has not completed all the work for a course; P indicates work in progress; W indicates withdrawal without penalty; WF indicates withdrawal failing; and WU indicates unsatisfactory withdrawal.

The letter grades A through F have no exact numerical equivalent; they indicate the quality of performance as described below. These grades represent the faculty's total estimate of the individual's achievement both academically and professionally, and they are not simply summaries of formal arithmetic grades.

- A is the highest grade given. A grade of "A" indicates achievement of superior quality.
- B indicates performance that is above the merely acceptable range.
- C indicates performance has met minimum standards of acceptability, but does not imply competency.
- D and U indicate inadequate performance.
- F indicates failure.
- I indicates incomplete course work. Final transcripts cannot carry grades of "I."

Faculty may choose to require demonstration of the students' mastery of skills or concepts whenever an evaluation score falls below 80%. In addition to achieving an appropriate grade, students must exhibit the appropriate professional, ethical and moral attitudes and behaviors to successfully pass a block, clerkship or phase of the curriculum. Each course syllabus contains the criteria for achieving a satisfactory grade.

### **Appeal Process for Grades**

Students are encouraged to discuss evaluations and final grades with the course director or clinical supervisor as appropriate. If a student wishes to appeal a final course grade or summative evaluation, this should be presented in writing to the Program Directors (PDs) Within 30 days of receiving the grade. The appeal may be based on the process that leads to the final grade/evaluation and/or questions of factual content of the evaluation process. The PD will then review the basis for the appeal of the final evaluation and/or grade. The PDs may review the final grade or evaluation in terms of 1) the process that led to the final grade/evaluation, and/or 2) questions of factual content that led to the final grade/evaluation. Upon review, the PDs may find that there is no basis, based on process or factual content, for a change of final grade or evaluation. Alternatively, the PDs may recommend that the course director or clinical supervisor consider a change of grade/evaluation or

additional assessment of student performance and subsequent reconsideration of the evaluation/grade.

After review by the PDs and submission of the reconsidered grade/evaluation, the student may appeal any decision to the Executive Associate Dean whose decision shall be final.

### **Evaluation of Student Academic Performance**

Student academic performance will be evaluated by the Program Directors each semester based on course grades, clinical rotation evaluations, and focus mentor reports. If, based on this evaluation it is determined that the student is not meeting program academic standards, consideration for academic warning, probation or dismissal will be made. Final decisions regarding dismissal and reinstatement will require a review and vote of the Genetic Counseling Training Program Advisory Board, which is made up of faculty, clinical supervisors, and external genetics professionals. Students may appeal the decision of the Advisory Board to the Executive Associate Dean for Medical Education and Student Affairs.

### **Evaluation of Professional Conduct**

The medical school faculty of Emory University has established standards for determining the ethical and professional fitness of genetic counseling students to participate in the medical profession. The evaluation of ethical behavior and professionalism is an ongoing process during school and the successful completion of each semester, rotation and phase of the curriculum requires that a student meet the appropriate ethical and professional standards as determined by the faculty. Some specific examples of professional conduct include:

- Concern for the welfare of patients as evidenced by thoughtful and professional attitude in obtaining history and physical examinations; avoidance of foul language, offensive gestures or inappropriate remarks with sexual overtones; treatment of patients with respect and dignity both in their presence and in discussions with peers; manifestation of concern for the total patient.
- Concern for the rights of others, as shown by dealing with faculty, professional and staff personnel and with peers in a considerate manner and with a spirit of cooperation; acting with an egalitarian spirit towards all persons regardless of race, color, religion, sex, sexual orientation, national origin, veteran's status, disability, or age; assuming an appropriate and equitable share of duties among peers.
- Responsibility to duty, which involves: effectively undertaking duties with alacrity [eagerness, enthusiasm and promptness are synonyms] and persevering until complete, or notifying a responsible more senior person of a problem; punctual attendance for class, small groups, rounds, conferences and other clinical duties, or offering appropriate explanation when unable to be present; notifying the Program Director's Office, course directors, and/or supervising house officers of absence or inability to carry out duties; seeing patients regularly and assuming responsibility for their care with appropriate supervision; identifying emergencies and responding appropriately; and being available to faculty or staff personnel when on duty.

- Trustworthiness, exhibited by being truthful and intellectually honest in communications with others; accepting responsibility for meeting multiple demands by establishing proper priorities and by completing work necessary for the optimal care of patients; discerning accurately when supervision or advice is needed before acting; maintaining confidentiality of information concerning patients.
- Professional communication and demeanor, which means a neat and clean appearance in attire, that is reasonably acceptable as appearing professional to the patient population; maintaining equilibrium under pressures of fatigue, professional stress, or personal problems; avoiding the effects of alcohol or drugs while on duty.

### **Procedure for the Reporting of Unprofessional Behavior**

Unprofessional behavior by a student should be reported to the course director, clinical supervisor, or the Program Director(s), as appropriate. Unprofessional behavior may be addressed in one or more of the following ways, depending upon the nature of the behavior, and the setting and circumstances in which it occurred:

- Review by Program Directors
- Conduct Code
- Honor Code.

If a student receives an unsatisfactory evaluation for professionalism during a course, clinical rotation, or focus internship, this should be reported to the Program Director, Assistant Program Director, or Medical Director respectively. Students are routinely informed about their evaluations during and upon completion of the course or rotation. Unprofessional conduct is discussed as part of routine meetings of the Program Directors. When considering allegations of a student's unprofessional behavior the Program Directors may interview the involved student(s) and any other faculty, staff, or students, as appropriate. If the Program Directors deem the unprofessional conduct to be of an egregious nature warranting consideration of dismissal, the situation will be brought to the attention of the DOHG Education Committee and/or the program Advisory Board to consider the alleged behavior and recommend a course of action.

### **Program Continuation**

At the end of each academic period, the Program Directors meet to review the performance of each student. In the case of students experiencing difficulties in achieving satisfactory progress either academically or professionally, the Program Directors will make a determination of whether the student should continue in the program or if there are grounds for consideration of Academic Warning, Academic Probation or Dismissal. Personal illness and/or family tragedy directly affecting a student's performance are given full consideration by the Program Directors. The Program Directors may choose to interview the involved student, and any other faculty, staff or students as appropriate. The Program Directors will consider the totality of the student's record and behavior since enrollment and may recommend:

- Deceleration of the academic program;
- Repetition of the academic program;
- Suspension;
- Dismissal;

- Other appropriate actions.

The Program Directors' final decision is conveyed to the student in writing, and a copy is placed in the student file. The student may appeal the decision to the Executive Associate Dean of the Medical School by submitting such a request in writing to the Dean within ten (10) days of being notified of the decision by the Program Directors.

### **Academic Warning**

Academic Warning is an official warning given by the Progress and Promotions Committee to a student whose performance is of concern. A student on Academic Warning is Not in Good Academic Standing. Students given an Academic Warning receive written notice of their status from the Program Director, noting the specific concern(s). A copy of the letter is placed in the student's file and made available as needed during the student's course of study. The designation of Academic Warning may result in the loss of financial aid.

### **Academic Probation**

Academic Probation is a conditional status that may be designated by the Program Directors when a student's performance is unsatisfactory. The period of Academic Probation and the reasons for probation are given to the student in the form of a letter, which is placed in the student's file. Academic Probation is a serious reprobation and requires that a student maintain adequate performance for the period designated as the probationary period. The designation of academic probation may result in the loss of federal financial aid.

### **Academic Guidance & Support**

Each student upon entering the GC Training Program will be assigned either the Program Director or a Program Assistant Director as his or her Academic Advisor. The advisor will also serve as a resource to address student issues or concerns regarding the program or their performance, or personal issues that are impacting their ability to succeed. In addition to meeting with the student formally twice per semester, the academic advisor will be the point of contact for instructional faculty, focus mentors, or clinical supervisors who have concerns regarding the student's abilities or performance. In general, students are expected to maintain grades of "B" or better or "satisfactory" in all courses including rotations. If a student is having academic difficulty, academic counseling or tutoring may be recommended. It is always advisable for students to seek academic assistance from instructors/course directors as a given course proceeds rather than to wait until examination time. In spite of the expected degree of self-discipline and good study habits that students developed before entering into the GC Training Program, there are instances in which students may need assistance. In addition, some degree of guidance is necessary when making up work lost because of illness (or any other unforeseen event). Students are requested to make an appointment with their advisor for counsel and advice concerning academic problems unresolved by discussions with instructors/course directors.

### **Program Standards for Continuation**

During every semester of the program, a student must have demonstrated both the requisite levels of professionalism and academic success, as judged by the Program

Directors. Professionalism may be part of any course's evaluation and grade. Independent of the final grade, unprofessional behavior may be the sole criterion for which a student may be recommended for a period of academic probation, suspension, dismissal, or other appropriate sanctions. The designation of Academic Probation or suspension may result in the loss of federal financial aid.

Assuming the required level of professionalism has been met:

- A student qualifies for program continuation without restrictions with a cumulative GPA of 3.0 or better, and no course or clinical rotation grade below a "B."
- A student who receives a "C" in any course or clinical practicum will be given an Academic Warning. The student must remediate to the satisfaction of the course director/instructor. Failure to complete remediation successfully by the middle of the next semester will result in the student being placed on academic probation.
- A student who makes a total of 3 "C's" at any point in the program will be placed on academic probation.
- In a single semester:
  - A student whose cumulative GPA falls below 3.0 will be placed on Academic Probation.
  - A student who receives less than a "B" in more than one course/rotation in a single semester will be placed on Academic Probation.
  - A student receiving a grade of "D" in a course or clinical rotation, or a U in focus internship/research will be placed on Academic Probation. At minimum the student will be required to remediate to the satisfaction of the course director/clinical supervisor and program directors. Repetition of the course/rotation may be required.
  - A student receiving a final grade of "F" in any course or clinical rotation will be dismissed from the program. Extenuating circumstances will be considered on a case-by-case basis.
  - A student receiving 2 or more "D's" in a single semester will be dismissed from the program. Extenuating circumstances will be considered on a case-by-case basis.
- In a subsequent semester:
  - A student currently on Academic Probation who receives a final grade of "D" or "F" in any course or clinical rotation, or a "U" in focus internship or research will be dismissed from the program
  - A student on Academic Probation who receives 2 or more "C's" will be dismissed from the program
  - A student must obtain a "B" or better in all courses/rotations for two consecutive semesters to be removed from Academic Probation
  - A student removed from Academic Probation who, in any single semester again meets criteria to be placed on academic probation, will be dismissed. As stated above, independent of the final grades, unprofessional behavior may be the sole criterion for which a student may be recommended for a period of academic warning, probation, suspension, dismissal, or other appropriate sanctions



### **Policies Regarding Academic Credits**

- The GC Training program does not award academic credit towards the degree for courses taken on a non-credit basis.
- The GC Training program will consider academic course credit for transfer on a case-by-case basis if:
  - The course was completed within the last 5 years
  - The course was obtained at the graduate level in an accredited institution
  - The student received a grade of "B" or better
  - The syllabus is available for review and approval by the Program Directors and instructor of the equivalent Emory program course
- Credit will not be granted for clinical genetic counseling experiences occurring outside of the Emory GC Training Program.
- The GC Training Program utilizes the Carnegie system in determining course, clinical, and focus internship credit allocation.

## ***TUITION AND FEES***

The cost of attending Emory University includes tuition and other academic charges, living expenses, and incidental expenses, such as textbooks and supplies. Charges for summer semester are the same as for any other term unless specified otherwise.

As costs continue to rise throughout the economy, the University anticipates that educational costs will be adjusted from time to time. The University reserves the right to revise tuition and other charges when necessary.

The Genetic Counseling Training Program includes a total of five semesters of training: Summer, Fall, Spring - Year 1; Summer, Fall, Spring - Year 2.

### **Tuition and Fees for 2021-2022**

Tuition for Genetic Counseling Program	\$39,501
Transcript Fee (1 <sup>st</sup> semester only)	\$70
Fees	\$1,597
Living Expenses*	\$27,000
Books & Supplies	\$3,750
Health Insurance**	\$3,600
Loan Fees	\$300
Transportation	\$1,000
<b>Total</b>	<b>\$75,892</b>

\*\*This amount is variable depending on specific type of housing. \*\*Health insurance is required and can be obtained through the University.

The Immunization and Disability Fee covers the cost of administering the immunizations, the PPD tuberculin skin tests, and the care and treatment of students with positive PPD conversions, as well as the cost of long-term disability insurance. Tuition charges cover tuition, use of all facilities of instruction, general medical and health services, and library services.

If a student remains in school and drops a class after the last day for change of courses, the student will not receive a refund. Students who have completed course and residence requirements for their degree but remain in residence to complete special projects (without obtaining credit) or to prepare for examinations must register at the beginning of each semester. Such registration requires a \$500 fee.

Genetic Counseling students pay a one-time \$120 Clinical Administrative Fee for their first semester of enrollment to cover background checks and drug testing that may be required for clinical rotations and a one-time \$70 Transcript Fee.

## ***POLICY STATEMENT ON REFUNDS***

Students who withdraw from the curriculum for any reason may qualify for a tuition refund on a semester basis. Tuition refunds will be calculated as follows:

<u>Withdrawal during</u>	<u>Charge</u>	<u>Credit</u>
First week (through Drop/Add)	0%	100%
Second week	20%	80%
Third week	40%	60%
Fourth week	60%	40%
Fifth week	80%	20%

*There will be no refunds after the fifth week of any semester.*

### **Audit Courses**

The same charge for credit courses applies. Audited courses may not be established for credit by examination nor may audit courses be transferred to credit courses after the first week of classes.

### **Deferred Payment/Emory Payment Plan**

The Emory Payment Plan is available to qualified students who wish to divide tuition fees into scheduled payments. A \$60 service fee is charged to participate in the Emory Payment Plan. The fee is added to the second payment.

Instructions are given for deduction of loans and for University-administered scholarships in listing the amount due, which is to be paid in four installments each semester according to the Emory Payment Plan Schedule.

**To set up a payment plan**, contact Student Financial Services at (404)727-6095, visit [www.emory.edu/studentfinancials](http://www.emory.edu/studentfinancials), or sign up in OPUS through the Student Center.

## ***FINANCIAL ASSISTANCE***

Prospective students who need financial assistance should begin early to investigate aid available to them. They should complete the Free Application for Federal Student Aid (FAFSA) as soon as possible. The FAFSA can be accessed on the web

at [www.fafsa.ed.gov](http://www.fafsa.ed.gov). The Emory University school code is 001564. Students begin the Genetic Counseling program in the summer semester. Students beginning in Fall 2021 must complete a 2021-2022 **FAFSA** for Fall 2021, Spring 2022 and Summer 2022.

Further information regarding financial assistance can be accessed at <http://med.emory.edu/education/financial/dpt/index.html>.

All matriculating students with loans must complete a mandatory online entrance interview as well as an exit interview upon graduation.

### **Scholarships**

There are a limited number of scholarships for Genetic Counseling students based on financial need. Eligibility is based on information from your FAFSA, and no additional application is required. A few merit scholarships may be awarded to incoming students based on merit, and these do not require an application, either.

### **Health Professions Tuition Loans**

Students are eligible to borrow from the University to assist in paying tuition. No additional application is required.

### **Federal Loans**

The Office of Financial Aid will determine a student's eligibility for federal direct Stafford Loans. Students who wish to accept those loans will be given instructions on how to complete the loan promissory note when they receive their financial aid award letter. Students interested in the federal direct GradPLUS Loan for additional funds should wait until they receive their initial award letter, then complete a GradPLUS Request Form that can be downloaded from the Office of Financial Aid website.

### **Private loans**

Students who need additional funds beyond the amount awarded by the Financial Aid Office may apply for private student loans. These loans require the borrower to undergo a credit check, and the interest rate is determined by the student's credit score. More information about these and all other student loans is available on the Financial Aid Office website at

<http://www.studentaid.emory.edu/types/loans/private.html>

### **Veterans Benefits**

Students eligible for Veterans Administration Benefits should notify the Office of Financial Aid and coordinate this Information with the Office of the Registrar. For additional information, contact the Associate Director of Financial Aid & Scholarships at the School of Medicine at (404) 727-5683.

### **Other Scholarships**

Some professional organizations for people in the health care industry offer scholarship opportunities. Students can research these programs by searching on the web, by talking to faculty members in their academic program and by referring

to the scholarship information in the Orientation Manual. In most cases, a separate application would be supplied by the sponsor of the scholarship.

## **ACADEMIC CALENDAR 2021-2022**

Pre-Term Fall 2020 (Incoming Students):	Aug 16-21,2021
Fall Term 2020	Aug 25-Dec 17, 2021
Spring Term 2021	Jan 10 – May 6, 2022
Diploma Ceremony	May 7, 2022 ( <i>Pending</i> )
Degree Conferral	May 9, 2022

## **CURRICULUM AND COURSES**

### **CURRICULUM**

The length of the Emory Genetic Counseling Training Program will be 21 months with the 2018 incoming class. Students attend 5 contiguous 16 week semesters of training. Students graduate with a Master of Medical Science degree (MMSc) in Human Genetics and Genetic Counseling from the Emory University School of Medicine following completion of a minimum of 75 credit hours and a Capstone Project.

The curriculum blends cutting-edge didactic training in human/medical genetics and psychosocial counseling, along with extensive clinical training opportunities. A novel aspect of the program is the focus internship, which provides an in-depth practice and research experience designed to embrace the ways in which the profession of genetic counseling is evolving.

### **Overview of the curriculum.**

Fall Semester I 1 <sup>st</sup> 8 wks	Fall Semester I 2 <sup>nd</sup> 8 wks	Spring Semester I	Summer Semester	Fall Semester II	Spring Semester II
HGC 705: Intro to Genetic Counseling (3)	HGC 745a: Medical Genetics I (1)	HGC 745b: Medical Genetics II (2)	HGC 805: Public Health Genomics (online)(2)	Elective Course (2)*	HGC 820: Hot topics in Genomics (3)
HGC 707: Intro to Epidemiology & Biostatistics (3)		HGC 750: GC Theory and Practice II (2)	Elective Course (2)*	PAE 7103: Biomedical Ethics (3)	Elective course (2)*
HGC 715: Human Genetics (3)		HGC 755: Current Topics in Clinical Genetic Testing (3)		HGC 810: GC Theory and Practice III (2)	HGC 730d: GC Seminar IV (1)
HGC 720: GC Theory and Practice I (2)		HGC 760: Genetics of Common Diseases (3)		HGC 730c: GC Seminar III (1)	
	HGC 725: Developmental Bio/Human Malformation (2)	HGC 730b: GC Seminar II (1)		HGC 815: GC Research (1)	HGC 815: GC Research (2)
HGC 730a: GC Seminar I (1)		HGC 735b: Clinical Practicum – Rotation I (2)	HGC 735d: Clinical Practicum – Rotation III (2)	HGC 735f: Clinical Practicum – Rotation V (3)	HGC 735h: Clinical Practicum – Rotation VII (3)
	HGC 735a: Clinic Prep & Observations (2)	HGC 735c: Clinical Practicum – Rotation II (2)	HGC 735e: Clinical Practicum – Rotation IV (5)	HGC 735g: Clinical Practicum – Rotation VI (3)	HGC 735i: Clinical Practicum – Rotation VIII (3)
HGC 740a: Focus Internship I (1)		HGC 740b: Focus Internship II (1)	HGC 740c: Focus Internship III (4)	HGC 740d: Focus Internship IV (1)	HGC 740e: Focus Internship V (1)
Credits	18	16	13-15	13-15	13-15

\*Minimum one 2 credit elective either Summer, Fall II or Spring II

Minimum total – 75 credits

## **Degree Requirements**

To obtain the degree of MMSc in Human Genetics and Genetic Counseling students will be required to complete in residence the full 6 semesters of academic study. Students will be expected to devote a minimum of 40 hours per week to classroom, clinical, and focus experiences. External employment is strongly discouraged.

Students must successfully complete all courses and clinical rotations in the sequence outlined. Exceptions will be considered for students who can demonstrate completion of a comparable graduate level course within the last 3 years. Satisfactory performance includes completion of the minimum of 75 credit hours with an overall average of B or above (a grade of B or above must be earned in all courses); successful completion of clinical rotation requirements with a grade B or above; successful completion of focus internship - including capstone project as approved by mentor and two additional faculty/staff members; and recommendation for continuation each semester by the program administrators.

## **COURSES**

### **Required Coursework**

#### **Genetics Courses**

#### **HGC 715: Human Genetics**

This course provides an overview of human genetics concepts including Mendelian and non-Mendelian inheritance, the molecular basis of human variation and disease

susceptibility, and chromosome variation. Population and quantitative genetics are covered, including pedigree and risk assessment using Bayesian statistics.

**Fall I – 3 credits**

### **HGC 725: Developmental Biology and Human Malformation**

Primary concepts covered in this course include: principles of developmental genetics, human reproduction, and normal/abnormal embryological development. The relationship between human development and clinical topics such as congenital anomalies, human disease, teratogens, and infertility are presented, in addition to assistive reproductive technologies and fetal therapy. Development is covered by major organ system, with emphasis on associated birth defects including etiology, ultrasound findings, and recurrence risks.

**Fall I – 2 credits**

### **HGC 745a&b: Medical Genetics I & II**

This course introduces the student to the basic elements of a medical genetics evaluation including concepts involved in dysmorphology, physical assessment, and differential diagnosis. The clinical features, natural history, counseling issues and management strategies for major pediatric and adult genetic diagnoses/syndromes are reviewed including: chromosome anomalies; bone dysplasias; hemoglobinopathies; metabolic conditions; trinucleotide repeat, connective tissue, neurogenetic, and ophthalmological disorders, as well as other single gene disorders by organ system. The course also covers methods and procedures associated with newborn screening, carrier testing and prenatal screening/diagnosis.

**Fall I – 1 credit, Spring I – 2 credits**

### **HGC 755: Current Topics in Clinical Genetic Testing**

This course utilizes a case-based approach to clinical and laboratory aspects of cytogenetics, biochemical genetics, and molecular genetics testing. Testing methodologies, measures of analytic and clinical validity, and test interpretation are discussed. The course is designed to prepare the student to select appropriate genetic tests for clients and provide accurate counseling based on possible test results.

**Spring I – 3 credits**

### **HGC 760: Genetics of Common Diseases**

Using cancer as a model, this course focuses on the genetic aspects of common diseases, including epidemiological concepts and levels of disease susceptibility. The clinical and molecular aspects of hereditary cancer syndromes are emphasized, and concepts related to cardiovascular genetics, psychiatric genetics, neuro/developmental genetics, and diseases such as diabetes, asthma, etc, are also addressed. The course provides a framework to address aspects unique to genetic counseling for common chronic diseases including risk assessment, genetic testing options and screening/prevention strategies.

**Spring I – 3 credits**

### **HGC 805: Public Health Genomics (online course)**

This course provides a basic overview of public health, societal and public policy issues, community-based interventions, and healthcare delivery systems. Public health genetics activities and perspectives at the local, state and federal level, as

well as academia and industry are illustrated using existing programs and projects as examples.

**Online: 2 credits (Summer II)**

### **HGC 820: Hot Topics in Genomics**

This course focuses on the analysis of new and evolving genetic/genomic technologies and their clinical application. Topics include microarray, NIPT, next generation sequencing, gene panels, whole exome/genome testing, interpretation of genetic variants, pharmacogenomics, genomic profiling/direct-to-consumer genetic testing, carrier and newborn screening advances, next generation tumor sequencing, and return of research results. This is a literature-based course, utilizing recent publications to illustrate concepts and issues, and stimulate in-class discussion. Application to genetic counseling practice is emphasized through role-play activities and student-led discussion.

**Spring II – 3 credits**

## **Counseling Related Courses**

### **HGC 705: Introduction to Genetic Counseling**

This course introduces students to the historical aspects and goals of the genetic counseling profession. The basic principles and tools of genetic counseling are discussed and illustrated, including collecting a family history and constructing a pedigree, components of the genetic counseling interaction, and counseling contexts/situations. Practice-based competencies, scope of practice, NSGC position statements and code of ethics, are explored.

**Fall I – 3 credits**

### **HGC 720: Genetic Counseling Theory and Practice I**

This course offers an introduction to the theory, research, and practice of person-centered, experiential, and existential therapy. Through experiential exercises, students learn skills that build a therapeutic relationship (e.g., genuineness, empathic understanding, and caring) and intervention skills to help clients express and explore the meanings of their experience. This course includes exercises designed to develop competency in relationship and basic counseling skills. Topics specific to genetic counseling are addressed including communicating risk and uncertainty, facilitated decision-making, non-directiveness, and self-disclosure.

**Fall I – 2 credits**

### **HGC 750 Genetic Counseling Theory and Practice II**

This course continues the exploration of psychosocial issues relevant to genetic counseling as initiated in Genetic Counseling Theory and Practice I. Topics covered include: individual psychosocial development, impact of chronic illness and disability, grief and bereavement, crises intervention, care for the caregiver, multicultural sensitivity and competency, and family communication of genetic risk. Students experience the impact on individuals and families of living with a

genetic condition or serious/chronic illness through speaker panels, visits to various care facilities, and spending time with a family who has a child with Down syndrome.

**Spring I – 2 credits**

### **HGC 810 Genetic Counseling Theory and Practice III**

This course focuses on advanced concepts encountered in the practice of genetic counseling including teaching principles and methodologies, health literacy, counseling individuals with special challenges, interacting with the media, and clinical supervision. Professional growth, certification and licensure, and preparing for the job market are addressed. Students are introduced to issues of billing and reimbursement, genetic service delivery models, telemedicine and the business/marketing aspects of providing genetic services. Role-play and literature-based discussions are utilized to enforce the concepts covered.

**Fall II – 2 credits**

### **HGC 730a-d Genetic Counseling Seminar I-IV**

This series of four genetic counseling seminars provides a forum for 1st and 2nd year students to learn from each other through sharing, discussion and presentation of cases experienced through observations and clinical rotations. Students also explore topics in genetics and genomics through journal club, and review of web-based genetic news items, blogs and books written for the lay population. In year 1, the 1st year students also focus on research methodology and grant-writing skills. In year 2, the 2nd year students focus on manuscript development and preparation for the ABGC boards.

**Fall I/II, Spring I/II – 1 credit each**

### **Additional Courses**

#### **HGC 707: Intro to Epidemiology and Biostatistics (Required)**

This course focuses on basic concepts of descriptive, analytic, and experimental epidemiology, and biostatistics. Topics covered include overview of study designs, measures of disease frequency, variables and distributions; statistical approaches to analysis of epidemiological data; and sources of bias in epidemiological studies. Application of these principles to genetics-related topics is illustrated through review of relevant publications.

**Fall I – 3 credits**

#### **PAE 7103: Biomedical Ethics (Required)**

Examination of ethical rules, principles, and theories as they relate to health care delivery issues using a case presentation and discussion format. Additional sessions related ethics of genetics research and clinical practice will be held for genetic counseling students.

**Fall II – 3 credits**

### **Clinical and Research**

#### **HGC 735a-i: Clinical Practicum**

Students complete a sequence of clinical rotations throughout their program experience. The rotations take place under the supervision of board certified



genetic counselors and/or clinical/medical geneticists. Students begin in Fall I with learning fundamentals of clinical counseling, observations of genetic counseling sessions conducted by experienced counselors, in addition to role-play and simulation activities. The first clinical rotation begins Spring I. Students complete five 8-week core rotations in prenatal, cancer, and general genetics (two rotations in 2 of the 3 areas). In addition, each student completes 4-5 four-week rotations in different specialty clinics and non-traditional settings. Students take increasing responsibility for the preparation and conduction of the genetic counseling sessions as they progress through the program. A minimum of 50 clinical cases in core rotations is required where the students participate in a significant portion of the case management and counseling.

**Fall I - 2 credits (Clinic Prep), Spring I - 4 credits, Summer I - 5-7 credits, Fall II - 6 credits, Spring II - 6 credits**

### **HGC 740: Focus Internship**

Focus Internship opportunities are offered in four general areas: Expanded Clinical Genetics Practice, Public Health Genetics, Clinical Genetics Research, Genetics Laboratory Practice and Counseling. Student placement with a particular focus project and mentor occurs through a matching process conducted during the students' introductory summer semester. Students spend an average of 6 hrs per week on Focus Internship activities during the fall and spring semesters of both years of the program, and the equivalent of 4 full time weeks during the interim summer between their 1st and 2nd year. In addition to participating in activities and meetings, and offering valuable work of benefit to their mentor, the Focus Internship provides the basis for the student's Capstone Project which includes: 1) completion of a mock grant proposal, 2) analysis/review/collection of data leading to: 3) submission of an abstract to a national genetics meeting, and 4) completion, internal peer review and revisions resulting in a first-author publishable manuscript.

**Fall I, II/Spring I, II – 1 credit each; Summer II – 4 credits**

### **HGC 815: Genetic Counseling Research**

Independent study. Students complete data collection and analysis and develop draft and final manuscripts, meeting abstracts, and presentations based on their Focus Internship Capstone Project.

**Fall II – 1 credit; Spring II – 2 credits**

# MASTER OF MEDICAL SCIENCE PHYSICIAN ASSISTANT PROGRAM (PA)

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The Emory University School of Medicine Physician Assistant Program is a dynamic program emphasizing active learning centered on the six competencies defined by the profession. This 29 month-long program uses a fully integrated curriculum stresses evidence based medicine decision making, and the provision of health care to all individual while sensitive to the social determinants of health and wellness. Using learning societies and early patient contact, the program reinforces team based care, patient advocacy and the acquisition of clinical skills supported by faculty mentors at all stages of the curriculum.

The Emory University Physician Assistant program has a long, proud history as one of the premier programs in the country. Our mission is to recruit, educate and mentor a diverse group of students to become highly regarded, sought after physician assistants providing compassionate health care of the highest quality. To that end we create an educational environment that promotes an understanding of human needs and ethical issues as well as the acquisition and application of patient-oriented clinical knowledge and skills.

In addition to their academic and clinical obligations, we are particularly proud of the strong heritage of community service that drives our students. Each year our students take that commitment to South Georgia where they care for the Farmworkers who harvest our crops and in urban Atlanta providing clinics for the uninsured. They build houses with Habitat for Humanity and travel to developing countries to share their lessons.

## Accreditation

The Accreditation Review Commission on Education for the Physician Assistant (ARC-PA) has granted **Accreditation-Continued** to the **Emory University Physician Assistant Program** sponsored by **Emory University**. Accreditation-Continued is an accreditation status granted when a currently accredited program is in compliance with the ARC-PA *Standards*.

Accreditation remains in effect until the program closes or withdraws from the accreditation process or until accreditation is withdrawn for failure to comply with the *Standards*. The approximate date for the next validation review of the program by the ARC-PA will be **March 2023**. The review date is contingent upon continued compliance with the Accreditation *Standards* and ARC-PA policy.

## Mission

The Emory Physician Assistant Program recruits, educates and mentors a diverse group of students to become highly regarded, sought after physician assistants providing compassionate health care of the highest quality.

**Vision**

The program emphasizes evidence-based primary care and preventive medicine, the provision of health care to the medically underserved and utilization of information technology to achieve these goals. The Program promotes team care, patient advocacy and the delivery of primary health care for all patients. Graduates are prepared to assume leadership roles, support research, to practice clinically in a wide variety of primary care and specialty settings and to engage in life-long learning.

**Values**

The PA program faculty values the highest standards of professionalism and seeks to prepare graduates to be strong supporters of team based practice, flexible in meeting the challenges of a changing health care environment and role models for the profession.

**Program Goals and Outcomes**

The goals of the Emory PA program are to:

- 1. Support students' journey to become well prepared, certified PAs by providing high-quality, evidence-based curriculum and diverse clinical training opportunities.**
- 2. Recruit, mentor, and support a diverse student body.**
- 3. Promote opportunities for community engaged learning, service, and outreach to underserved populations.**
- 4. Prepare students to take on leadership positions in the PA Profession.**

***THE PHYSICIAN ASSISTANT DIVISION;  
RESPONSIBILITIES & CONTACTS***

The Physician Assistant Program faculty, supported by staff, is responsible for the day-to-day life of Physician Assistant students. Some but not all of their functions are:

- Admissions, record keeping, and registration issues for incoming and continuing students. PA faculty are responsible for the selection, and admission of students into the PA program
- Curriculum coordination management in conjunction with the Course and Clerkship Directors and faculty.
- Ensuring continuing compliance with the accreditation standards as set forth by the Accreditation Review Commission for Physician Assistants.
- Monitoring and recording the progress and promotion of students in coordination with the Progress and Promotions Committees.

- Responsibility for students on clinical rotations, including coordination of rotation schedules, student and preceptor evaluations, grades, and electives.
- Responsibility for coordination of special events within the academic career of the students. The entire staff works on these special events. Orientation, Class Meetings, Commencement and Graduation are all coordinated by PA staff.
- Administration of communication with students via email, mailboxes, bulletin boards and Blackboard.
- Ensuring timely access or referral to student counseling or other services as necessary to address non-academic issues impacting student progress.

## ***ADMISSIONS PROCESS***

### **Admissions Requirements**

All prerequisite courses must be completed by December 2020 for the class entering in August 2021. Specific prerequisite requirements for the Master of Medical Science – Physician Assistant program are listed below.

1. A baccalaureate degree from a regionally accredited institution. Applicants graduating from an international institution must have taken a minimum of 24 semester credits (36 quarter credits) as a full-time student at a US or Canadian regionally accredited institution.
2. A cumulative and science GPA of 3.0 on a 4.0 scale, Graduate Record Exam scores (GRE) taken within the last 5 years (preferred: Verbal – 153; Quantitative 144; Analytical Writing 4.0).
3. Completed CASPA and Supplemental Applications including a Non-Refundable Supplemental Application Fee of \$75.00.
4. In addition, all applicants must be able to meet the Emory PA Program Technical Standards.
5. A minimum of 2000 hours of direct patient care experience (not shadowing) at the time of application submission. In addition, we highly recommend community volunteer hours as well as PA 'shadowing hours'.
6. *For all applicants for whom English is not their native language and/or their first degree is from a foreign institution, TOEFL is required.* Scores must be sent directly to the PA program from the Educational Testing Service. A minimum total score of 93 with a speaking score of 26 is required for consideration.
7. We strongly recommend all prerequisite courses be completed within 10 years of submitting the application.

8. We require a minimum of 23 semester credits (34.5 quarter hours) of natural sciences:

Biology with lab	4 semester/6 quarter hrs
General Chemistry with lab	8 semester/12 quarter hrs
Human Anatomy and Physiology with lab	8 semester/12 quarter hrs
Organic <u>OR</u> Biochemistry*	3 semester/5 quarter hrs

\*survey courses not acceptable

9. A minimum of 3 semester credits (5 quarter hours) of statistics or biostatistics.  
10. We recommend coursework in microbiology and genetics.

*All courses taken to satisfy the requirements must be taken from a regionally (North American) accredited institution. Each course must be completed at a grade level of "C" or better and must be completed prior to December prior to class matriculation. All courses are subject to approval by the Admissions Committee and cannot be taken on a Pass/Fail basis, as CLEP credit, or audited.*

### **Application Process**

Your application must be verified by September 1 and official GRE scores need to be attached

### **Master of Medical Science - Physician Assistant**

Emory University is a participant in CASPA (Centralized Application Service for PAs). To apply to the Emory PA program you must complete the CASPA application as well as a completed Emory Supplemental Application. The deadline for both is September 1, 2020 for the class beginning in August 2021. It is the applicant's responsibility to make sure that all required material is received and completed by CASPA prior to the deadline. Application material will not be reviewed until all components and fees have been received. Additional information on CASPA can be found by clicking on the link above, or by calling (240) 497-1895. CASPA will open April 2020 for applications to the Emory PA 2021-2022 class.

Step 1	Step 2	Step 3
Complete the on-line application with <a href="#">CASPA</a> and submit all required documents including original transcripts from all post-secondary schools you have attended, 2 recommendation letters, and GRE scores (submitted to Emory Institution code 0459)	Complete the <a href="#">Supplemental Application</a> and pay the non-refundable \$75 fee  The CASPA number assigned in Step 1 is needed to complete the Supplemental Application.  Reapplicants must submit a new Application  Submit your finished Supplemental application to CASPA when completed and the fee is paid.	The most qualified applicants will be invited for an on-site interview on a first come, first serve basis. Apply early, but not before the minimum required clinical hours are obtained.

**A complete application must include the following:**

1. Completed CASPA Application, including GRE scores.
2. A completed Emory Supplemental Application and submitted to CASPA
3. \$75.00 Non-refundable Supplemental Application fee

**Early Priority**

Admission to the Emory PA Program is highly competitive. Our final submission deadline is September 1st; however, we very strongly encourage early application since interview days are filled first come-first served as applications are reviewed. **Program acceptance will be offered on a rolling basis.**

**Dates/Deadlines for 2021-2022 Cycle**

Application Available on CASPA: April 2021

Final Application Deadline (including Supplemental) for all PA applicants: September 1, 2021 Midnight EST

**Supplemental Application**

In addition to the CASPA application, a supplemental application is required of ALL applicants to the Emory PA Program.

An application to the Emory PA Program is not complete, and cannot be processed, until supplemental application, GRE scores, and all applicable fees are received.

**THE DUAL DEGREE PROGRAM - PA/MPH****(Master of Medical Science/Master of Public Health)**

Emory is one of a few universities offering a dual MMSc-PA and MPH option for interested applicants. The dual degree program offers students the opportunity to earn an MPH degree in conjunction with training in the respected and top ranked Rollins School of Public Health at Emory University. Students may apply their combined PA/PH skills in such areas as population health, clinical research, health administration leadership, global healthcare, and community health promotion.

Students must apply to and be accepted to both the PA and MPH programs during the same admission year. Students apply to a specific department in the School of Public Health through SOPHAS and to the Physician Assistant Program through CASPA. If you are accepted to the PA program but not accepted into the RSPH, you enter the PA program the equivalent of year two. For example, if you apply to the dual degree program for the coming year, and are not accepted into the School of Public Health, you enter the PA program in August of the following year. If you are accepted by the School of Public Health but not the PA program, you may enter Public Health but are no longer eligible to enter the dual degree program. You may apply to the PA program as a regular student.

Accepted dual-degree students initially enroll in the School of Public Health for one year and complete 32 semester hours of courses. These include the required MPH core courses, required departmental courses and, in most instances, a thesis. Students must also complete a practicum, a structured field experience of relevance to public health. After completion of the fall and spring semesters of the MPH curriculum, dual degree students enter the PA program the following fall semester.

The PA Program requires twenty-nine months (seven semesters) of training, including courses and clinical rotations.

[Click here to see a PDF of the different MPH programs and how they interface with the PA Program](#)

[Read the Bio of one of our dual degree students](#)

[Link to the Dual degree information page at the Rollins School of Public Health](#)

[Link to the Rollins School of Public Health tuition information page](#)

## ***CREDIT POLICY FOR PRIOR EDUCATION AND TRAINING***

A bachelor's degree is required to enter the Physician Assistant Program. The Emory Physician Assistant Program does not accept transfer credit or award advanced placement in its curriculum.

## ***ENROLLMENT POLICY***

All applicants must be able to meet the Emory PA Program [Technical Standards](#).

- A minimum of 2000 hours of direct patient care experience at the time of application submission. In addition, we highly recommend community volunteer hours as well as PA 'shadowing hours'.
- Scores for the Internet Based Test (iBT) version of the Test of English as a Foreign Language (TOEFL) for all applicants for whom English is not their native language. Scores must be sent directly to the PA program from the Educational Testing Service. A minimum total score of 93 with a speaking score of 26 is required for consideration.
- A minimum of 3 semester credits (5 quarter hours) of statistics
- We strongly recommend courses in human anatomy, human physiology, and microbiology in order to best prepare for the PA program curriculum. **Two Semesters of Anatomy and Physiology (I and II 8 semester/12 quarter hours) will be required and all prerequisite courses must be completed within 10 years of submitting the application for the 2021-2022 cycle**
- We require a minimum of 15 semester credits (22 quarter hours) of natural sciences:
  - Biology with lab (4 semesters/6 quarter hours)
  - General Chemistry with lab(s) (8 semester/12 quarter hours)
  - Organic or biochemistry\* (3 semester/5 quarter hours)
- *\*survey courses not acceptable*

*All courses taken to satisfy the requirements must be taken from a regionally (North American) accredited institution. Each course must be completed at a grade level of "C" or better and must be completed prior to matriculation. All courses are subject to approval by the Admissions Committee and cannot be taken on a Pass/Fail basis, as CLEP credit, or audited.*

# **ATTENDANCE**

## **DIDACTIC PHASE ATTENDANCE, ABSENCES AND TIMELINESS**

Attendance, on time arrival, and participation is the expectation for every student. This includes all classes, examinations, labs, small group sessions, society meetings, preceptorships, and patient presentations. Classes and exams will begin on time. Students who arrive after an examination has begun may be refused admission to the exam, thus jeopardizing their course grade. Additional time will not be given for late arrivals. Students who arrive more than 15 minutes late to an exam will not be allowed to take the exam and will receive a zero for this exam grade. Each student is allowed three (3) absences per semester to use at their discretion. Any absence on a particular day, independent of the length of that absence, counts as one of the three allowable absences. These absences may not be on consecutive days. These absences do not require approval, but do require notification to the student's faculty advisor via email. Any additional absences must be approved by the student's advisor and will require documentation of reason of absence. Absences that require more than five (5) consecutive class days are addressed under Leave of Absence policy.

## **CLINICAL PHASE ATTENDANCE, ABSENCES AND TIMELINESS**

Attendance at clinical rotation on the scheduled dates and time is mandatory and monitored carefully. Transportation and alternate childcare arrangements must be made prior to beginning the clinical year. The rotation hours, including weekends, holidays, call schedule, etc. are determined by the clinical service. Students on a clinical rotation will be on call and work weekends as scheduled by the supervising physician. Under no circumstances may a student leave a clinical rotation without prior approval from the program director or a clinical educator unless there is physical danger. Any other departure will be treated as abandonment of the Emory PA Student Handbook 2019-2020 23 rotation and is subject to sanctions by the

Progress and Promotions committee, including possible dismissal from the program. All students are required to do three (3) Emory arranged and approved out-of-town rotations. Please be prepared for these rotations by ensuring adequate child and pet care. Students may take three (3) planned personal days during the clinical year. These must be approved no later than 2 weeks before the absence. No more than one personal day may be taken in any single rotation. A personal day may not be taken on an End-of-Rotation day. Absences other than those for illness, emergency, or a pre-approved personal day are not permitted and will result in reduction of the final rotation grade by one grade for each missed day. Clinical year student absences for illness or emergency must be reported within 8 hours to the one of the Clinical Educators and to the individual preceptor. The student must provide the program with the name of rotation and preceptor, reason for absence, expected return date, and a telephone number where the student can be reached. When absence due to illness extends beyond 48 hours, a signed physician's report may be required (from the University Student Health Service or from the student's personal physician). This is done primarily for the student's protection against any accusation of neglect or indifference, as well as to ensure that students have sought proper health care when appropriate. The program will provide written notification of approved personal day absences to the individual preceptor. Arriving late or



leaving early from a rotation without approval is considered an unexcused absence for the entire day.

## ***STANDARDS OF PROGRESS***

### **Student Assessment and Grading**

For all classes and rotations, the following guidelines for grading will be used:

A	90.0 – 100%
B	80.0 – 89.99%
C	70.0 – 79.99%
D	65.0 to 69.99%
F	64.99% and below

**Academic Warning** is defined as an official warning given by the Progress and Promotion Committee to a student whose performance is of concern. A student on Academic Warning is Not in Good Academic Standing. Students given an Academic Warning receive written notice of their status from the Program Director, noting the specific concern(s). A copy of the letter is placed in the student's file and made available to subsequent Progress and Promotion Committees during the student's course of study. The designation of Academic Warning may result in the loss of financial aid.

**Academic Probation** is defined as a conditional status that may be designated by the Progress and Promotion Committee when a student's performance is unsatisfactory. A student on Academic Probation is Not in Good Academic Standing. Students placed on Academic Probation receive written notice of their status from the Program Director, noting the specific concern(s). The letter is placed in the student's file and made available to subsequent Progress and Promotion Committee Meetings. Academic Probation is a serious reprobation and requires that a student maintain adequate performance for the period designated as the probationary period. The designation of Academic Probation may result in the loss of financial aid.

### **Promotional Guidelines for Didactic Phase**

For every semester of the program, a student must demonstrate professionalism and academic success, as defined below and evaluated by the Progress and Promotion Committee.

#### **Guidelines for Didactic Phase Professionalism:**

Professionalism may be part of any course's evaluation and grade. Independent of the final grade, unprofessional behavior may be the sole criterion for which a student may be recommended for Academic Warning, Academic Probation, dismissal, or other appropriate sanctions. The designation of Academic Probation may result in the loss of financial aid.

#### **Guidelines for Didactic Phase Academic Performance:**

Students who score less than 65% on all exams (oral or written) in a course/module (regardless of the overall grade) will need to repeat the entire

course (offered only once per year) assuming they meet GPA requirements to remain in the PA Program.

In a single semester:

- A student with a semester GPA  $>2.80$  will be considered in good academic standing.
- A student with a semester GPA between 2.51-2.80 is not in good academic standing and will be placed on Academic Warning. Remediation or repetition of courses may be required.
- A student with a semester GPA between 2.20-2.50 is not in good academic standing and will be placed on Academic Probation. Remediation or repetition of courses may be required.
- A student with a semester GPA  $<2.20$  is not in good academic standing and may be considered for dismissal from the program by the Progress and Promotion s Committee

### **Students Not in Good Academic Standing for multiple semesters:**

- A student with a GPA below 2.80 for two semesters will be placed on Academic Probation. Remediation or repetition of courses may be required.
- A student with a GPA of 2.50 or below for two semesters may be considered for dismissal from the program by the Progress and Promotion Committee.
- A student with a GPA of 2.80 or below for three semesters may be considered for dismissal from the program by the Progress and Promotion Committee.

### **Guidelines for Evaluation of the Pre-Clinical Summative Examination**

All PA students are required to successfully complete all aspects of the pre-clinical summative evaluation scheduled at the end of the didactic phase in order to progress to the clinical phase. This evaluation process is designed to ensure that every student has the requisite knowledge and skills to progress to the clinical year. The evaluation is comprised of three components.

- A. Preceptor assessment: Preceptors assess students' performance in the final encounter in the Didactic Experiential Learning Program (DELP) using a standardized assessment form. This comprehensive examination is worth 25% of the pre-clinical summative exam.
- B. Objective Structured Clinical Examination (OSCE): Students will complete a multi-station objective examination covering basic clinical skills. This skills examination is worth 25% of the pre-clinical summative exam.
- C. Multiple Choice Examination: This is a 225 question examination, administered via computer over approximately 2.5 hours. Exam questions are based on the NCCPA blueprint and follow in topic weight the PANCE exam. A satisfactory score is defined as  $> 1$  standard deviation above the national mean. For purposes of the pre-clinical summative examination, this examination counts for 50% of the grade.

An unsatisfactory outcome requires remediation and retesting and is defined as a:

- score of less than 70% in the preceptor assessment
- score of less than 70% on the OSCE

- score of less than one standard deviation below the national mean for the multiple-choice examination

Any student earning unsatisfactory scores in two or more components of the pre-clinical summative examination will not be allowed to progress to clinical rotations and will be required to complete faculty directed remediation for a minimum of 5 weeks prior to retesting. A failing grade on a retest will result in inability to progress to the clinical year until evaluated by the Progress and Promotion committee for decisions on further procedure.

### **Guidelines for Performance in the Clinical Phase**

Performance during the clinical year requires assessment of knowledge, attitudes, skills and behavior. The following guidelines do not preclude the Progress and Promotions Committee from recommending repetition of courses, assignment of academic warning or academic probation, or dismissal based on the Committee's overall assessment of student performance, regardless of the specific grades. Independent of the final grade, unprofessional behavior may be the sole criterion for which a student may be recommended for a period of academic warning, academic probation, dismissal, or other appropriate sanctions.

### **Students in Good Academic Standing at Start of Clinical Year:**

1. Students entering the clinical year in good academic standing will be placed on Academic Warning based on any of the following criteria:
  - One (1) final rotation grade of 'C'
  - Two (2) End of Rotation examinations with a score less than 70%
2. Students entering the clinical year in good academic standing will be placed on Academic Probation based on any of the following criteria:
  - Two (2) final rotation grades of 'C'
  - One (1) final rotation grade of 'D'
  - One (1) final rotation grade of 'C' plus two (2) End of Rotation examinations with a score less than 70%
  - Three (3) End of Rotation examinations with a score less than 70%
3. Students entering the clinical year in good academic standing may be dismissed based on any of the following criteria:
  - Three (3) final rotation grades of 'C'
  - Two (2) final rotation grades of 'D'
  - One (1) final rotation grade of 'F'
  - One (1) final rotation grade of 'C' plus three (3) End of Rotation examinations with a score less than 70%
  - Four (4) End of Rotation examinations with a score less than 70%
  - Removal of student by preceptor from the rotation

Additionally, a student who receives a final rotation grade of D or F for any rotation must repeat that rotation if they are not dismissed from the program.

### **Students Not in Good Academic Standing at the Start of the Clinical Year:**

1. Students entering the clinical year on Academic Warning will be placed on Academic Probation based on ANY of the following criteria:

- One (1) final rotation grade of 'C'
  - Two (2) EOR examinations with a score less than 70%
2. Students entering the clinical year on Academic Probation may be subject to dismissal based on ANY of the following criteria:
    - Two (2) final rotation grades of 'C'
    - One (1) final rotation grade of 'D'
    - One (1) final rotation grade of 'F'
    - Three (3) EOR examinations with a score less than 70%

### **Remediation of Written Exams**

In order to ensure that all students in the program have achieved academic proficiency before advancing to the next level, deficient course material will be successfully remediated. Students who fail to make a 70% or greater on any written exam in the Emory PA Program are required to remediate deficient content areas for each test. The remediation process does not change the exam grade. Remediation must take place within two (2) weeks of receiving the deficient grade. Failure to do so will result in the additional loss of five (5) points from the exam.

### **Remediation of Written Exams Process**

Initiation of the remediation process is the student's responsibility.

Written Exam Remediation Process:

1. Make appointment for remediation session in the PA Program office under supervision of the Academic Support Administrator
2. Bring lecture handouts, files, and assigned reading to the remediation with blank paper
3. Obtain exam for remediation from the Academic Support Administrator
4. For each missed question, the following should be done:
  - Identify the correct answer
  - Explain the correct answer in one paragraph or less
  - Site all sources used to determine correct answer including page number of textbook or eBook and slide number for PowerPoint slides. Only assigned readings or lecture notes are accepted as references.
5. Return the exam and remediation packet to the Academic Support Administrator
6. Copying of exams or questions is not allowed (no photos, no photo copies and no written reproduction)
7. No information from the exams is to be shared in any fashion

Students are expected to earn 100% on remediated questions. Students who earn <100% will be required to meet with the Course Director to review deficient content and demonstrate proficiency of the subject material.

### **Remediation of OSCE Exams**

Students who earn less than 70% on an OSCE exam (including SP session and SOAP note) are required to remediate the failed content of the exam. Remediation must take place within two (2) weeks of the exam.

## **Remediation of OSCE Exams Process**

Initiation of the remediation process is the student's responsibility.

OSCE Exam Remediation Process:

1. Review videotaped SP session and the proctor comments
2. Review pertinent assigned readings, lectures and labs
3. Review critiqued SOAP note
4. Write a brief yet thorough report on what you would do or ask differently in future SP sessions to improve history, physical exam, communication skills and/or professional skills
5. Write a brief report on how you would improve recording subjective and objective information and better develop the assessment and plan in your SOAP note
6. Send these reports electronically to the module director

## **RIGHT OF APPEAL**

Students are encouraged to discuss evaluations and final grades with the course director, preceptor, academic and clinical coordinators as appropriate. If a student wishes to appeal a final course grade or summative evaluation, this should be presented in writing to the Program Director (PD) within 30 days of receiving the grade. The appeal may be based on the process that leads to the final grade/evaluation and/or questions of factual content of the evaluation process. The PD will then review the basis for the appeal of the final evaluation and/or grade. The PD may review the final grade or evaluation in terms of 1) the process that led to the final grade/evaluation, and/or 2) questions of factual content that led to the final grade/evaluation.

Upon review, the PD may find that there is no basis, based on process or factual content, for a change of final grade or evaluation. Alternatively, the PD may recommend that the course/module director or clinical coordinator consider any of the following: 1) recommend that the course/module director or clinical coordinator submit the questions and answers to a group of faculty in the field for review; 2) suggest additional assessment of student performance and subsequent reconsideration of the grade/evaluation; or 3) suggest a change of grade/evaluation.

The course/module director will then consider the recommendation made by the PD and submit a written response to the PD and a re-considered final grade/evaluation. All grade appeals along with responses by the course/module director, clinical coordinator and the PD will be forwarded to the Chair of the Progress and Promotion Committee.

After review by the PD and submission of the re-considered grade/evaluation, the student may appeal any decision to the Executive Associate Dean whose decision shall be final.

In all cases involving academic or non-academic disciplinary decisions, whether the problem is academic, psychiatric, or conduct related, the student has the right to request a rehearing and/or to appeal to the Executive Associate Dean of the School of Medicine.

## **REQUIREMENTS FOR THE MASTER OF MEDICAL SCIENCE DEGREE (PA DEGREE)**

*To be eligible to receive the degree of Master of Medical Science Physician Assistant from Emory University School of Medicine, students must:*

- Have a satisfactory standing in all courses required for the degree
- Have credit for the full 29 months of study undertaken at the Emory University School of Medicine, PA Program
- Have completed all academic requirements within no more than three (3) academic years and six (6) months from the time of admission
- Satisfactorily pass the summative evaluation of PA competencies during the final semester

## **TECHNICAL STANDARDS**

### **TECHNICAL, NON-ACADEMIC STANDARDS**

#### **INTRODUCTION**

*Essential Abilities and Characteristics Required for Admission and Completion of the MMSc Degree*

Essential abilities and characteristics required for completion of the MMSc degree consist of certain minimum physical and cognitive abilities and sufficient mental and emotional stability to assure that candidates for admission, promotion, and graduation are able to complete the entire course of study and participate fully in all aspects of medical training, with or without reasonable accommodation.

The following abilities and characteristics are defined as technical standards, which, in conjunction with academic standards established by the faculty, are requirements for admission, promotion, and graduation. Delineation of technical standards is required for the accreditation of the Program. Although these standards serve to delineate the necessary physical and mental abilities of all candidates, they are not intended to deter any candidate for whom reasonable accommodation will allow the fulfillment of the complete curriculum. Candidates with questions regarding technical standards are encouraged to contact the Admissions Department immediately to begin to address what types of accommodation may be considered for development to achieve these standards. Admission to the Physician Assistant Program at Emory University is conditional on the candidate's having the ability to satisfy these technical standards, with or without reasonable accommodation, and results from a process that examines and values all of the skills, attitudes, and attributes of each candidate on a case-by case basis.

The Program has an ethical responsibility for the safety of patients with whom students and graduates will come in contact. Although students learn and work under the supervision of the faculty, students interact with patients throughout their education. Patient safety and well-being are therefore major factors in establishing requirements involving the physical, cognitive, and emotional abilities

of candidates for admission, promotion, and graduation. Candidates must have the physical and emotional stamina and capacity to function in a competent manner in the hospital, classroom, and laboratory settings, including settings that may involve heavy workloads, long hours, and stressful situations. Individuals whose performance is impaired by abuse of alcohol or other substances are not suitable candidates for admission, promotion, or graduation.

## **TECHINICAL, NON-ACADEMIC STANDARDS**

**Observation** – Candidates must be able to observe demonstrations and participate in experiments of science, including but not limited to such things as dissection of cadavers. Candidates must be able to accurately observe patients and assess findings. They must be able to obtain a medical history and perform a complete physical examination in order to integrate findings based on these observations and to develop an appropriate diagnostic and treatment plan.

**Communication** – Candidates must be able to communicate effectively and efficiently with patients, their families, and members of the health care team. They must be able to obtain a medical history in a timely fashion, interpret non-verbal aspects of communication, and establish therapeutic relationships with patients. Candidates must be able to record information accurately and clearly, and communicate effectively in English with other health care professionals in a variety of patient settings.

**Motor Function** – Candidates must possess the capacity to perform physical examinations and diagnostic maneuvers. They must be able to respond to emergency situations in a timely manner and provide general and emergency care. They must adhere to universal precaution measures and meet safety standards applicable to inpatient and outpatient settings and other clinical activities.

**Intellection, Conceptual, Integrative and Quantitative Abilities** – Candidates must have sufficient cognitive (mental) abilities and effective learning techniques to assimilate the detailed and complex information presented in the curriculum. They must be able to learn through a variety of modalities including, but not limited to, classroom instruction; small group, team and collaborative activities; individual study; preparation and presentation of reports; and use of computer technology. Candidates must be able to memorize, measure, calculate, reason, analyze, synthesize, and transmit information across modalities. They must recognize and draw conclusions about three-dimensional spatial relationships and logical sequential relationships among events. They must be able to formulate and test hypotheses that enable effective and timely problem-solving in diagnosis and treatment of patients in a variety of clinical modalities.

**Behavioral and Social Attributes** – Candidates must demonstrate the maturity and emotional stability required for full use of their intellectual abilities. They must accept responsibility for learning, exercising good judgment, and promptly completing all responsibilities attendant to the diagnosis and care of patients. They must understand the legal and ethical aspects of the practice of medicine and function within both the law and ethical standards of the medical profession. Candidates must be able to work effectively, respectfully, and professionally as part

of the healthcare team, and to interact with patients, their families, and health care personnel in a courteous, professional, and respectful manner. They must be able to tolerate physically taxing workloads and long work hours, to function effectively under stress, and to display flexibility and adaptability to changing environments. They must be capable of regular, reliable, and punctual attendance at classes and in regard to their clinical responsibilities. Candidates must be able to contribute to collaborative, constructive learning environments; accept constructive feedback from others; and take personal responsibility for making appropriate positive changes. It is expected that minimum accommodation will be requested with regards to this set of standards.

**Ethical and Legal Standards** – Candidates must meet the legal standards to be licensed to practice medicine. As such, candidates for admission must acknowledge and provide written explanation of any felony offense or disciplinary action taken against them prior to matriculation in the Program. In addition, should the student be convicted of any felony offense while in the Program, they agree to immediately notify the Program Director as to the nature of the conviction. Failure to disclose prior or new offenses can lead to disciplinary action that may include dismissal.

## **EQUAL ACCESS TO THE SCHOOL OF MEDICINE'S EDUCATIONAL PROGRAM**

The Emory University Physician Assistant Program intends for its students and graduates to become competent and compassionate clinicians who will meet all requirements for medical licensure.

The Program has an institutional commitment to provide equal educational opportunities for qualified students with disabilities who apply for admission to the program, with a strong commitment to full compliance with state and federal laws and regulations (including the Rehabilitation Act of 1973, the Americans with Disabilities Act of 1990). As previously noted, admitted candidates with disabilities are reviewed individually, on a case-by-case basis. An accommodation is not reasonable if it poses a direct threat to the health or safety of self and/or others, if making it requires a substantial modification in an essential element of the curriculum, if it lowers academic standards, or poses an undue administrative or financial burden.



## **TUITION AND FEES INFORMATION**

### **Tuition and Fees for 2021-2022 (Totals)\***

Tuition for Physician Assistance Program	\$45,201
Housing Fee (Clinical Training)	\$975
Transcript Fee (1 <sup>st</sup> semester only)	\$70
Clinical Administrative Fee (1 <sup>st</sup> semester)	\$255
Activity Fee (fall and spring semesters)	\$196
Athletic Fee (fall, spring & summer semesters)	\$359
Mental Health and Counseling Fee	\$282
Immunization and Disability Fee	\$375
Technology Fee	\$210

***\*Includes fees charged to new students one-time only***

## **REFUND POLICY**

Physician Assistant students who choose to withdraw from the curriculum for any reason may qualify for a tuition refund on a per semester basis. Tuition refunds will apply as follows:

<b>Withdrawal during</b>	<b>Charge</b>	<b>Credit</b>
First 5 class days	0%	100%
Second 5 class days	20%	80%
Third 5 class days	40%	60%
Fourth 5 class days	60%	40%
Fifth 5 class days	80%	20%

*There will be no refunds after the fifth week of any semester.*

### **Deferred Payment/Emory Payment Plan**

The Emory Payment Plan is available to qualified students who wish to divide tuition fees into scheduled payments. A \$60 service fee is charged to participate in the Emory Payment Plan. The fee is added to the second payment.

Instructions are given for deduction of loans and for University-administered scholarships in listing the amount due, which is to be paid in four installments each semester according to the Emory Payment Plan Schedule.

**To set up a payment plan**, contact Student Financial Services at (404)727-6095, visit [www.emory.edu/studentfinancials](http://www.emory.edu/studentfinancials), or sign up in OPUS through the Student Center.

## **FINANCIAL ASSISTANCE**

Prospective students who need financial assistance should begin early to investigate aid available to them. They should complete the Free Application for Federal Student Aid (FAFSA) as soon as possible. The FAFSA can be accessed on the web

at [www.fafsa.ed.gov](http://www.fafsa.ed.gov). The Emory University school code is 001564. Students begin the Physician Assistant program in the Fall semester. Students beginning in Fall 2021 must complete a 2021-2022 **FAFSA** for Fall 2021, Spring 2022 and Summer 2022. Further information regarding financial assistance can be accessed at <http://med.emory.edu/education/financial/dpt/index.html>.

All matriculating students with loans must complete a mandatory online entrance interview as well as an exit interview upon graduation.

### **Scholarships**

There are a limited number of scholarships for Physician Assistant students based on financial need. Eligibility is based on information from your FAFSA, and no additional application is required. A few merit scholarships may be awarded to incoming students based on merit, and these do not require an application, either.

### **Health Professions Tuition Loans**

Students are eligible to borrow from the University to assist in paying tuition. No additional application is required.

### **Federal Loans**

The Office of Financial Aid will determine a student's eligibility for federal direct Stafford Loans. Students who wish to accept those loans will be given instructions on how to complete the loan promissory note when they receive their financial aid award letter. Students interested in the federal direct GradPLUS Loan for additional funds should wait until they receive their initial award letter, then complete a GradPLUS Request Form that can be downloaded from the Office of Financial Aid website.

### **Private loans**

Students who need additional funds beyond the amount awarded by the Financial Aid Office may apply for private student loans. These loans require the borrower to undergo a credit check, and the interest rate is determined by the student's credit score. More information about these and all other student loans is available on the Financial Aid Office website at <http://www.studentaid.emory.edu/types/loans/private.html>

### **Veterans Benefits**

Students eligible for Veterans Administration Benefits should notify the Office of Financial Aid and coordinate this Information with the Office of the Registrar. For additional information, contact the Associate Director of Financial Aid & Scholarships at the School of Medicine at (404) 727-5683.

### **Other Scholarships**

Some professional organizations for people in the health care industry offer scholarship opportunities. Students can research these programs by searching on the web, by talking to faculty members in their academic program and by referring to the scholarship information in the Orientation Manual. In most cases, a separate application would be supplied by the sponsor of the scholarship.

## **2021-2022 ACADEMIC CALENDAR**

<b>Date</b>	<b>Event</b>
July 26 – July 30, 2021	Orientation
Aug 2, 2021	Fall term starts
Nov 24-26, 2021	Thanksgiving Break
Dec 17, 2021	PA Graduation [Class of 2020]
Dec 20 – Jan 9, 2021	Winter Break
Jan 10, 2022	Spring term starts
Jan 17, 2022	MLK Holiday [No Classes]
May 16, 2022	Summer term starts
May 30, 2022	Memorial Day Holiday [No Classes]
Jul 4, 2022	Independence Day Holiday [No Classes]

To: PA Classes of 2020, 2021 and 2022 Students Thursday June 11

By now, you should have received the email from Emory University announcing plans for the fall semester. As all PA program (and all other programs in the School of Medicine) are different, we are writing to provide additional details for students.

### **Calendar**

As a reminder, the PA program and other degree programs in the School of Medicine follow a different calendar from Emory College and other graduate programs. Incoming first-year PA students will begin orientation on **July 26**. The PA class of 2021 are on clinical rotations in hospitals and clinics and the class of 2022 has continued with hybrid modules.

### **Curriculum and Format**

As you saw in the university email, undergraduate students will be offered a choice to attend courses in-person or remotely. However, given the nature of medical education, we strongly believe that a fully remote education will not allow our students to become competent clinicians. As the current epidemiology of COVID-19 changes in our community, we are confident that we can progressively construct educationally sound and reasonably safe experiences that will allow you to learn the knowledge and skills you will need.

Over the next few months, we expect to offer some lectures and classes remotely, while some activities will require in-person attendance. When in-person teaching is required, we will take all reasonable precautions to keep our students as safe as possible. (Please be aware that Emory physician assistant students are currently precluded from providing care to patients being evaluated or treated for COVID-19 infection). Current policies that address physician assistant student safety include:

- Distribution of appropriate PPE to students and training on how to use it
- Requirement to wear appropriate face masks in all public spaces

- Limit on the number of people gathering in person
- Enforcement of physical distancing requirements and reconfiguration of space to accommodate these requirements
- Adherence to protocols for sanitizing spaces in the School of Medicine

Our plans were developed in close collaboration with subject matter experts in the Emory Department of Medicine, Division of Infectious Disease, our hospital epidemiologists, and leaders across our medical school and the university. As the earlier email noted, the current pandemic reminds us that medical providers and scientists must be flexible, ready to thoughtfully adapt to global, national and regional changes. With that in mind, understand that at some point we may need to change curricular plans to preserve personal health, adapt to community needs while doing our institutional best to ensure academic continuity. We do have contingency plans, and we will keep students informed if changes are being considered.

Should any student feel that they are unable to continue their education because of personal health concerns—or any other reason--please speak with Dr. Lund. Requests for deferral or leave of absence are routinely granted.

### **Fall Semester**

We are working with the School of Medicine committees addressing schedule and space issues and will share more information in the next few weeks. We are also planning a virtual town hall meeting for the incoming PA class with several of our faculty to address your questions.

Finally, we echo the words of our university leaders in reminding you that while some things will be different this fall, core elements of the Emory experience will remain the same: our world-renowned clinical and scientific faculty will deliver learning opportunities that meet Emory's rigorous standards. You will have access to the tremendous resources of our hospitals and clinics and our greater research university, and you will be part of a supportive and compassionate community. Our patients and our community need the care that you, the next generation of clinicians, can provide.

# **COURSES**

## **Fall Semester Year 1**

**BAHS 7000 Gross Anatomy, 5 cr**  
**Didactic Phase, Required, Letter Grade**  
**Course Director: Edward Pettus, PhD**

This course introduces students to structure of the human body. Lectures, interactive, computer programs, and texts are chosen to assist in active laboratory learning. Students will plan, dissect, and present their findings as they pertain to specific course objectives. Through critical thinking and active dissection students will learn a foundation of anatomy, and will also learn how to build upon this as their specialized interests continue to develop.

**BAHS 7001 Foundations of Medical Science, 3 cr**  
**Didactic Phase, Required, Letter Grade**  
**Course Director: Jonie Fawley, MMSc, PA-C**

Basic concepts in biochemistry, microbiology and pharmacology are introduced. The biochemistry section introduces basic concepts including protein structure, enzymes, nucleic acids, metabolic pathways and metabolism. The medical microbiology section introduces basic concepts of pathogenic bacteria, fungi, viruses and animal parasites in relation to human disease with an emphasis on pathogenesis, mechanisms of virulence, epidemiology, therapy and prevention. The pharmacology section introduces basic concepts in drug absorption, distribution, metabolism, and excretion. It also covers basic concepts in pharmacokinetics.

**PAE 7100 Becoming a Physician Assistant I, 2 cr**  
**Didactic Phase, Required, Letter Grade**  
**Course Director: Allan Platt MMSc, PA-C**

The first of four courses in exploring the patient communications, social, regulatory, ethical and professional aspects of becoming a physician assistant. This semester focuses on developing effective communication skills with patients and other health care providers. An emphasis on historical data collection using patient simulations and clinical experiences is included. Specialty sections of the medical history such as the genetic and nutritional history are introduced.

**PAE 7102, Introduction to Patient Assessment, 5 cr**  
**Didactic Phase, Required, Letter Grade**  
**Course Director: LeAnne Martinelli, RPh, MMSc, PA-C**

This course focuses on developing foundational physical examination skills. Didactic lectures on exam techniques and basic interpretation of physical exam findings are given. Physical exam skills labs, patient simulations, and small group discussions provide opportunities to develop critical reasoning skills essential to patient evaluation and management.

**PAE 7105 Biomedical Ethics, 2 cr**  
**Didactic Phase, Required, Letter Grade**  
**Course Director: John Banja, PhD**

Examination of ethical rules, principles, and theories as they relate to health care delivery issues using a case presentation format and discussion of the ethical issues. Application of these issues will continue through the system and population modules within case discussions.

**PAE 7301 Fundamentals of Psychiatry, 2 cr**  
**Didactic Phase, Required, Letter Grade**  
**Course Director: Erin Lepp MMSc, PA**

Basic psychiatric manifestations and how to work with both patients and families exhibiting psychological problems are examined. Topics include psychiatric diagnosis, the effect of society on behavior, the basis of drug and alcohol abuse, and basic intervention and treatment modalities

**Spring Semester Year 1**

**PAE 7002 Introduction to Epidemiology & Biostatistics. 2 cr**  
**Didactic Phase, Required, Letter Grade**  
**Course Director: Jodie Guest, PhD**

Basic concepts of descriptive and analytic epidemiology are presented and discussed. Topics covered include measures of disease frequency, probability, overview of epidemiologic study designs, sample size, hypothesis testing, tests of significance (p-values, confidence intervals, chi-square tests), measures of data quality and bias, multivariate models, survival analysis, and causality. Each of these concepts is taught with a focus on how to read and interpret the medical literature to allow a clinical career driven by evidence based medicine.

**PAE 7101 Becoming a Physician Assistant II, 2 cr**  
**Didactic Phase, Required, Letter Grade**  
**Course Directors: Karen A. Newell, MMSc, PA-C / Erin Lepp, MMSc, PA**

This is the second of a four part course exploring the various topics which contribute to becoming a well-rounded physician assistant. Three major areas are covered including dimensions of human sexual expression, effective communication skills for working with patients and their families and fundamentals of health promotion and disease prevention.

**PAE 7200 Fundamentals of Dermatology, 2 cr**  
**Didactic Phase, Required, Letter Grade**  
**Course Director: Lissette Valdes, MMSc, PA-C**

This course provides an integrated approach to understanding the pathophysiology of dermatologic disorders and the rationale for their therapy. Material is introduced in a stepwise fashion beginning with physiology, progressing to the pathophysiology, clinical features and treatment of representative disorders. Emphasis will be placed on an understanding of the basic functions of these organ

systems, manifestation of disease both local and systemic, evaluation, diagnosis and treatment.

**PAE 7201 Fundamentals of Hematology/ Oncology/HIV, 3 cr**

**Didactic Phase, Required, Letter Grade**

**Course Director: Allan Platt MMSc, PA-C**

This course examines the physical manifestation, evaluation of laboratory and clinical data, differential diagnosis and treatment of major disorders of the hemopoietic system. Included in this course are common laboratory tests used in the evaluation of other anatomic systems including the significance of abnormal findings. Basic principles of immunology and oncology and HIV patient care are discussed.

**PAE 7206 Fundamentals of Gastroenterology, 4 cr**

**Didactic Phase, Required, Letter Grade**

**Course Director: Karen A. Newell, MMSc, PA-C**

This course provides an integrated approach to understanding the pathophysiologic basis of common gastrointestinal, hepatic and nutritional disorders as well as the pharmacological rationale for their therapy. The nutrition section covers the basic science of human nutrition and relates the biochemical and physiological aspects of nutrition to health and disease. Students are introduced to the clinical approach to these disorders, including physical examination, clinical, laboratory and radiographic findings necessary for diagnosis and management. Cases are used throughout the course to support student integration of content into a unified approach to the patient.

**PAE 7204 Fundamentals of Pulmonology, 5 cr**

**Didactic Phase, Required, Letter Grade**

**Course Director: Michele Emory MMSc, PA-C**

This module provides an understanding of pathophysiologic basis of disorders of the eye, ear, nose and throat as well as pharmacological rationale for their therapy. This module also includes the basic and medical sciences, physical examination, signs and symptoms, evaluation methods including arterial blood gases, diagnosis, management and treatment of EENT and pulmonary disorders. Attention is focused on acute and chronic respiratory disturbances. Cases are used throughout the course to support student integration of content into a unified approach to the patient.

**Summer Semester Year 1**

**PAE 7102 Becoming a Physician Assistant III, 2 cr**

**Didactic Phase, Required, Letter Grade**

**Course Director: Allan Platt MMSc, PA-C**

The third of four courses in the bPA series. This course continues the discussion on professional development topics pertinent to employment and practice as a PA such as licensing and credentialing, medical coding and billing, healthcare financing and delivery systems, and career and leadership opportunities. Allied health professions, and healthcare resources are research topics for peer presentation. Employment opportunities, resume development and career choices are discussed.

**PAE 7203 Fundamentals of Cardiology, 5 cr****Spring First Year, Required, Letter Grade****Course Director: LeAnne Martinelli, RPh, MMSc, PA-C**

This module explores all aspects of cardiovascular medicine including physical examination and history taking as it relates to cardiovascular disorders and analysis of symptoms and signs in developing a differential of common complaints. Common cardiac and peripheral vascular disorders are introduced through lectures that focus on the etiology, pathophysiology, clinical manifestations, diagnostic work-up and management. The use and interpretation of common lab and radiologic/imaging studies are explored. Additionally, the principles of electrocardiology, its interpretation and application in clinical practice are introduced. Cases are used throughout the course to support student integration of content into a unified approach to the patient.

**PAE 7205 Fundamentals of Endocrinology, 3 cr****Didactic Phase, Required, Letter Grade****Course Directors: Erin Lepp MMSc, PA**

Manifestations, evaluation methods, diagnosis, management and treatment of endocrinologic disorders will be presented. Major topics of the course include normal and abnormal sexual development, normal and abnormal growth and pubertal development, reproductive endocrinology, infertility, glucose homeostasis, diabetes, pituitary disorders, thyroid physiology and disease, adrenal disorders, endocrine hypertension, and disorders of mineral metabolism. Students will utilize clinical cases to integrate theory into practical management processes.

**PAE 7207 Fundamentals of Nephrology and Genitourinary Disease, 4 cr****Didactic Phase, Required, Letter Grade****Course director: Ami Stee, MMSc, PA-C**

Renal and genitourinary disease are examined in this course including the physical manifestation of disease, examination, laboratory and imaging evaluation, diagnosis and clinical management of disorders including acid-base balance. Cases are used throughout the course to support student integration of content into a unified approach to the patient.

**PAE 7208 Fundamentals of Rheumatology and Orthopedics, 3 cr****Didactic Phase, Required, Letter Grade****Course Director: Karen A. Newell, MMSc, PA-C**

This course explores all aspects of common diseases/injuries of the bones and joints including the examination, laboratory and imaging evaluation, diagnosis and clinical management of associated etiologies. Additionally, this course provides an integrated approach to understanding the pathophysiologic basis of many common rheumatologic disorders as well as the pharmacological rationale for their treatment. Cases are used throughout the course to support student integration of content into a unified approach to the patient.



## **Fall Semester Year 2**

### **PAE 7103 Becoming a Physician Assistant IV, 2 cr**

**Didactic Phase, Required, Letter Grade**

**Course Director: William Bryson, MMSc, PA-C**

This course continues the discussion on professional development topics pertinent to employment and practice as a PA such as licensing and credentialing, medical coding and billing, avoiding malpractice, healthcare financing and delivery systems, and career and leadership opportunities. Students continue with their clinical encounters and continue with their professional portfolio.

### **PAE 7209 Fundamentals of Neurology, 3 cr**

**Didactic Phase, Required, Letter Grade**

**Course Director: Jonie Fawley, MPAS, PA-C**

The course provides an integrated approach to understanding the pathophysiologic basis of disorders of the central and peripheral nervous system as well as the pharmacological rationale for their therapy. Students are introduced to the clinical approach to these disorders, including physical examination, clinical laboratory, and radiologic findings and various management methods. Cases are used throughout the course to support student integration of content into a unified approach to the patient.

### **PAE 7300 Fundamentals of Obstetrics and Gynecology, 3 cr**

**Didactic Phase, Required, Letter Grade**

**Course Director: Ami Steele, MMSc, PA-C**

This course is designed to provide an introduction to women's health, obstetrics and gynecology. Screening, counseling, and health promotion are taught as components of the primary care of women. The focus is on the evaluation of the reproductive health of women through the various life stages.

### **PAE 7306 Fundamentals of Pediatrics, 3 cr**

**Didactic Phase, Required, Letter Grade**

**Course Director: Erin Lepp, MMSc, PA**

This course explores the physical and psychological fundamentals of normal growth and development and introduces the evaluation, diagnosis and management of the major illnesses and conditions common to the pediatric population. Emphasis is placed on developing assessment skills, integration of basic science with clinical indicators. Students are expected to participate in case-based discussions covering pediatric pathology, organ system specific disorders and preventive medicine. Evaluation includes quizzes and a final, cumulative examination.

### **PAE 7305 Fundamentals of Surgery and Emergency Medicine, 5 cr**

**Didactic Phase, Required, Letter Grade**

**Course Director: Karen A. Newell, MMSc, PA-C**

The emergency medicine portion of this module will provide an introduction to current diagnosis and clinical management of acute trauma including head and neck, thoracic, abdominal, and facial injuries/fractures. Additionally, the emergency presentation, evaluation and management of shock, environmental injuries, thermal burns, toxicology, altered mental status, near-drowning, anaphylaxis and other

emergencies not already covered in the organ system and population based modules will also be covered. BLS and ACLS instruction, testing and certification will also be included in this module. A FAST Exam (Ultrasound) lab will expose students to the basic concepts and skills used in the ED setting. The surgery portion of this module will provide an introduction to the clinical management of surgical patients to include topics such as Pre and Post-Op evaluation, order writing, IV and blood products, nutrition of the surgical patient, common surgical procedures, wound healing, lacerations, suture materials and skin stapling, common surgical instruments and devices. Additionally, technical skills are demonstrated including labs on aseptic technique, surgical knot tying and suturing. The critical care portion of this module will provide an overview of some of the common topics and skills used in the management of the seriously ill patient to include: airway, shock, mechanical ventilation, acid base status, arterial lines and central venous catheters. Practical case scenarios will be applied.

**PAE 7304 Fundamentals of Geriatrics, 3 cr**  
**Didactic Phase, Required, Letter Grade**  
**Course Director: Jonie Fawley, MPAS, PA-C**

This course focuses on the special needs of the elder population with particular emphasis on providing the knowledge and skills necessary to recognize and manage common problems in older adults.

**Clinical Year**

**PAE 7400 Psychiatry, 4 cr**  
**Clinical Phase, Required, Letter Grade**  
**Course Directors: Catherine Dragon, MMSc, PA-C, Liz Valdes, MMSc, PA-C**

This required 4-week clinical clerkship provides the student with exposure to the principles and practice of psychiatry. Students will gain experience caring for patients with mental illness. The students will develop interviewing and counseling techniques specific to behavioral health. They will develop an increased understanding of the social, economic, and psychological factors related to the patient and family members of a patient with a mental illness. They will participate in history-taking, physical examination, assessment and formulation of a plan and problem list, ordering and interpreting diagnostic tests, proper medical documentation, and reporting to the healthcare team as appropriate for the clerkship. During this clerkship, students may additionally participate in inpatient rounds, and provide patient presentations to clinical team members. They will develop an understanding of how to function as part of the medical team, develop effective communication with the patient, the healthcare team, and the patient's family.

**PAE 7401 General Surgery, 4 cr**  
**Clinical Phase, Required, Letter Grade**  
**Course Directors: Catherine Dragon, MMSc, PA-C, Liz Valdes, MMSc, PA-C**

This required 5-week clinical clerkship provides the student with exposure to the principles and practices of general surgery. Emphasis is placed on the management of patients who present with surgical issues. The students will participate in the

pre-operative evaluation of patients, including history taking, physical examination, assessment and formulation of a plan and problem list, ordering and interpreting diagnostic tests, proper medical documentation, and reporting to the healthcare team as appropriate for the clerkship. They will assist in the operating room, learn to write

pre and post-operative notes, care for the post-operative patient, and report to the healthcare team as appropriate for the clerkship. During this clerkship, students may additionally participate in inpatient rounds, provide patient presentations to clinical team members, and perform bedside procedures. They will develop an understanding of how to function as part of the surgical team, develop effective communication with the patient, the healthcare team, and the patient's family.

**PAE 7402 Emergency Medicine, 4 cr**  
**Clinical Phase, Required, Letter Grade**

**Course Directors: Catherine Dragon, MMSc, PA-C, Liz Valdes, MMSc, PA-C**

This required 5-week clinical clerkship provides the student with exposure to the principles and practice of emergency medicine. Emphasis is placed on caring for patients presenting to the emergency department. Students will participate in the assessment of patient acuity, disease state, and appropriate management within the setting of the emergency department. They will participate in history-taking, physical examination, assessment and formulation of a plan and problem list, ordering and interpreting diagnostic tests, proper medical documentation, and reporting to the healthcare team as appropriate for the clerkship. During this clerkship, students may additionally participate in inpatient rounds, provide patient presentations to clinical team members, and bedside procedures. Students will develop an understanding of how to function as part of the medical team, develop effective communication with the patient, the healthcare team, and the patient's family.

**PAE 7403 Obstetrics/Gynecology, 4 cr**  
**Clinical Phase, Required, Letter Grade**

**Course Directors: Catherine Dragon, MMSc, PA-C, Liz Valdes, MMSc, PA-C**

This required 4-week clinical clerkship provides students with exposure to the principles and practice of obstetrics and gynecology, including health maintenance and screening. Emphasis is placed on caring for female patients across their life span, including menarche, family planning, childbearing years, perimenopause, menopause, and post-menopause. Students will learn how to recognize and treat sexually transmitted diseases, ovarian, breast, and uterine cancer, and evaluate and treat common ambulatory gynecologic problems. Students will learn prenatal counseling and care and may have exposure to labor and delivery. They will participate in history-taking, physical examination, assessment and formulation of a plan and problem list, ordering and interpreting diagnostic tests, proper medical documentation, and reporting to the healthcare team as appropriate for the clerkship. During this clerkship, students may additionally participate in inpatient rounds, provide patient presentations to clinical team members, and perform bedside procedures. They will develop an understanding of how to function as part of the medical team, improve effective communication with the patient, the healthcare team, and the patient's family.

**PAE 7405 Pediatrics, 4 cr****Clinical Phase, Required, Letter Grade****Course Directors: Catherine Dragon, MMSc, PA-C, Liz Valdes, MMSc, PA-C**

This required 4-week clinical clerkship provides the student with exposure to the principles and practice of pediatric medicine in the ambulatory setting. Students will gain experience caring for neonates, infants, children, and adolescents, providing parental education and guidance, recognizing the appropriate milestone, preventing illness, injury, and accidents, and providing care unique to the pediatric patient. Students will participate in history-taking, physical examination, assessment and formulation of a plan and problem list, ordering and interpreting diagnostic tests, proper medical documentation, and reporting to the healthcare team as appropriate for the clerkship. During this clerkship, students may additionally participate in inpatient rounds, provide patient presentations to clinical team members, and perform bedside procedures. They will develop an understanding of how to function as part of the medical team, improve effective communication with the patient, the healthcare team, and the patient's family.

**PAE 7406 Internal Medicine Inpatient Medicine, 4 cr****Clinical Phase, Required, Letter Grade****Course Directors: Catherine Dragon, MMSc, PA-C, Liz Valdes, MMSc, PA-C**

This required 4-week clinical clerkship provides students with exposure to the principles and practice of internal medicine. Emphasis is placed on caring for the acutely and chronically ill adult patient who requires hospitalization. Students will participate in admission history taking, physical examination, assessment and formulation of a plan and problem list, ordering and interpreting diagnostic tests, proper medical documentation, and reporting to the healthcare team as appropriate for the clerkship. During this clerkship, students may additionally participate in inpatient rounds; provide patient presentations to clinical team members, and perform bedside procedures. Students will develop an understanding of how to function as part of the medical team, develop effective communication with the patient, the healthcare team, and the patient's family.

**PAE 7407 Family Medicine, 4 cr****Clinical Phase, Required, Letter Grade****Course Directors: Catherine Dragon, MMSc, PA-C, Liz Valdes, MMSc, PA-C**

This required 5-week clinical clerkship provides the student with exposure to the principles and practice of family medicine. Emphasis is placed on disease prevention and health maintenance in adults and children. The students will develop an increased understanding of the social, economic, and environmental factors related to caring for the patient and extended family. They will participate in history-taking, physical examination, assessment and formulation of a plan and problem list, ordering and interpreting diagnostic tests, proper medical documentation, and reporting to the healthcare team as appropriate for the clerkship. During this clerkship, students may additionally participate in inpatient rounds, provide patient presentations to clinical team members, and perform bedside procedures. Students will develop an understanding of how to function as part of the medical team, develop effective communication with the patient, the healthcare team, and the patient's family.

**PAE 7410 Primary Care Directive, 4cr each**

This required 4-week clinical clerkship provides students with further exposure to the principles and practice of Primary Care. Emphasis is placed on caring for patients with general medical problems in the outpatient or the inpatient setting. Students will participate in taking medical histories, physical examination, assessment and formulation of a plan and problem list, ordering and interpreting diagnostic tests, proper medical documentation, and reporting to the healthcare team as appropriate for the clerkship. During this clerkship, students may additionally participate in rounds; provide patient presentations to clinical team members, and perform procedures. Students will develop an understanding of how to function as part of the medical team, develop effective communication with the patient, the healthcare team, and the patient's family.

**PAE 7500, 7501, 7502 Elective I, II, III, 4 cr each****Clinical Phase, Medical Specialty Elective, Letter Grade**

**Course Directors: Catherine Dragon, MMSc, PA-C, Liz Valdes, MMSc, PA-C**

These elective 4-week clinical clerkships provide the student with the opportunity to gain additional experience in one of the core clerkship areas or to supplement the foundational core clerkships with specialty disciplines in medicine and surgery. Emphasis is placed on the management of patients within the specialty discipline. Students will utilize these electives to better understand how a primary care provider should manage a patient presenting with a disease/condition prior to specialty referral and upon follow up. They will participate in history-taking, physical examination, assessment and formulation of a plan and problem list, ordering and interpreting diagnostic tests, proper medical documentation, and reporting to the healthcare team as appropriate for the clerkship. During this clerkship, students may additionally participate in inpatient rounds, provide patient presentations to clinical team members, and perform bedside procedures. Students will develop an understanding of how to function as part of the medical team, develop effective communication with the patient, the healthcare team, and the patient's family.

**PAE 78011 Senior Thesis I, 2 cr****Clinical Phase, Required, Letter Grade**

**Course Directors: Jodie Guest, PhD**

This is the first in a series of three courses designed to expand students' abilities to critically review the medical literature. The first semester provides students with the opportunity to pose a research question that is unsettled in the medical literature. Students read and interpret evidence-based medical literature and provide side-by-side comparisons of published literature that is applicable to their research questions with attention to study design, sample size, results, forms of bias, and applicability of the results.

**PAE 7802 Senior Thesis II, 2 cr****Clinical Phase, Required, Letter Grade**

**Course Directors: Jodie Guest, PhD**

In the second of this three-part series, the students build from their literature review and learn the skill of succinctly summarizing the evidence-based literature in

a one page executive summary of published findings that highlights differences and similarities to draw conclusions about their research question. Additionally, students learn to create a detailed tweetorial about their research question that is well referenced, engaging, and educational in nature.

**PAE 7803 Senior Thesis III, 2 cr**  
**Clinical Phase, Required, Letter Grade**  
**Course Directors: Jodie Guest, PhD**

In the last semester of this three-part thesis series, students use their research to develop a conference poster presentation that summarizes the current understanding of their research question. This poster includes a literature review to support the relevance of their question, a review of pertinent studies and any conclusions that can be drawn from the previously published literature to change clinical practice or medical education. The students present their findings and conclusions at a mock conference.

# MEDICAL IMAGING PROGRAM

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Medical imaging professionals utilize x-rays and other energy forms to help diagnose and treat medical conditions. The medical imaging professional (radiologic technologist or radiographer) provides quality patient care while creating diagnostic images independently, assisting radiologists and other physicians in imaging the body and operating specialized radiographic equipment.

This program is ideal for people interested in both personal interaction and a "high-tech" career. Medical imaging professionals apply their knowledge of anatomy, physiology, pathology, patient positioning, radiation protection, and image production techniques in the performance of their duties. Students acquire the knowledge and skills necessary for professional competence through a blend of classroom and clinical education.

Emory University's Medical Imaging Program offers a bachelor of medical science degree, which can help graduates advance more rapidly within the profession. Advanced coursework in radiology administration, radiography education, and advanced clinical practice in computed tomography, interventional radiology, magnetic resonance imaging, or women's health (mammography and bone densitometry) are offered.

Please note that advanced coursework in interventional radiology and women's health (mammography and bone densitometry) will be discontinued in 2021. Students admitted to the BMSc program after 2018 no longer will be offered advanced coursework in these two areas. Students admitted to the RT-BMSc program no longer will be offered coursework in these two areas after 2019, if enrolling part-time, and after 2020, if enrolling full-time.

## **Accreditation**

Emory University is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award degrees at the associate, bachelor's, master's, and doctoral levels. This organization can be contacted at the following address:

Commission on Colleges  
Southern Association of Colleges and Schools  
1866 Southern Lane  
Decatur, GA 30033-4907  
(404) 679-4501

## **Programmatic Accreditation**

The Medical Imaging Program is also accredited by the Joint Review Committee on Education in Radiologic Technology. This organization can be contacted at the following address:

JRCERT  
20 N. Wacker Drive  
Suite 2850  
Chicago, IL 60606-3182  
Phone: (312) 704-5300  
Fax: (312) 704-5304  
E-mail: [mail@jrcert.org](mailto:mail@jrcert.org)

## ***FACULTY AND STAFF***

Ted Brzinski, M.E. S., R.T.(R)  
Program Director  
Associate

Barbara Peck, M.B.A., R.T. (R)(QM)  
Clinical Coordinator  
Senior Associate

Kimberly Cross, M.S.R.S., RT(R)  
CT Instructor  
Health Educator

Lamiis Khalifa, B.M.Sc., R.T. (R)(MR)  
Radiography Instructor  
Health Educator

Sean Strickler, B.S., R.T. (R)(MR)  
MRI Instructor  
Health Educator

Kimberly Reese  
Program Administrative Assistant

## **BMSc IN MEDICAL IMAGING**

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The Emory University Medical Imaging Program seeks to develop leaders in medical imaging by fostering academic and clinical excellence within a patient and family centered care environment. Specifically, the mission of the program is to produce well-educated, culturally and clinically competent, highly motivated medical imaging professionals who will safely perform diagnostic imaging procedures. Program graduates will also possess either advanced imaging skills in a specialty modality, or leadership skills in education or management.



## **ADMISSION CRITERIA**

The following requirements must be satisfied for admission:

- Satisfactory physical and mental health.
- Graduation from an accredited high school with a 2.0 or higher G.P.A., or high school equivalent diploma (GED) with a composite score of at least 50 percent. Applicants must submit official transcripts from all secondary schools that have been attended. Applicants must submit official GED scores, if applicable.
- All applicants, regardless of past educational experience, must submit scores on the Scholastic Aptitude Test of the College Entrance Examination Board (institutional code 5196) or the American College Test. A minimum composite SAT score (critical reading + math sections) of 900 or a minimum composite ACT score of 19 is recommended for admission.
  - International students from non-English-speaking countries must also have an overall score of at least 90 on the TOEFL iBT exam.
- Applicants must have satisfactorily completed (grade of C or better) a minimum of thirty semester hours (45 quarter hours) of undergraduate courses distributed as follows:
  - Ten semester hours (fifteen quarter hours) in humanities
    - Composition I (required)
    - Composition II (recommended)
    - Literature (required)
    - Course in either Art, Music, Theatre, or Dance (required)
  - Ten semester hours (fifteen quarter hours) in social science
    - General psychology (required)
    - U.S. History (required)
    - World History (required)
    - Elective-as needed to meet the 10 semester hour requirement (Sociology, Economics, Political Science, Anthropology)
  - Ten semester hours (fifteen quarter hours) in natural and mathematical science
    - College Algebra (required)
    - Anatomy & Physiology I & II (required)
    - Introduction to Computer Science (required)
    - Elective – as needed to meet the 10 semester hour requirement (Biology, Chemistry, Physics, Statistics)
- Applicants must submit official transcripts from all post-secondary institutes that have been attended. Applicants must have maintained a minimum cumulative GPA of 2.0 on a 4.0 scale for all required courses.
- All courses taken to satisfy the requirements set forth in 4 above must be taken at a regionally accredited institution. Graduates of foreign institutions must present transcripts of at least one full academic year (preferably in the sciences and in English) from an accredited college or university in the United States or Canada.
- Submission of three (3) letters of reference from instructors (preferably), co-workers, or employers.

- Verification of attendance at a Program Information Session. Attendance must be verified on the Information Session Verification Form.
- Verification of volunteer hours in a radiology department. A minimum of 8 hours of volunteer time is suggested. Additional hours would be beneficial to better understand the daily job requirements of a radiologic technologist. Volunteer hours must be verified on the Volunteer Verification Form.
- Submission of an application. The application and all supporting documentation should be submitted together as a packet. If some required courses are still in progress, an initial transcript should be submitted with the application packet and a final transcript should be sent when all courses are completed.
- Personal interview with program faculty. Interview sessions are scheduled between March and July. An applicant will be invited to attend an interview session after the application and all supporting documents have been received.

## ***APPLICATION PROCEDURE***

To be considered for admission into the Medical Imaging program, the Application Form must be completed on-line and the following documents must be submitted, in one packet, to the program office by the June 1<sup>st</sup> application deadline.

- \$50.00 Application fee
- Personal Statement
- Official High School transcript or official GED scores (as applicable)
- Official college transcript for each college attended\*
- Standardized Test Scores (SAT or ACT)
- Three letters of recommendation
- Verification of program information session attendance
- Verification of volunteer time completion

\*If core curriculum classes are in progress, please submit a current transcript at the time of application and a final transcript when all core classes are completed. If an institute will only send a transcript directly to the program office, please indicate that the transcript is being sent separately.

After receipt of the application packet, the applicant will be contacted to inform the applicant if any additional documents are required and to schedule the required personal interview

Admissions decisions for the Medical Imaging Program, which begins only in the fall semester, are made after each interview session. It is strongly recommended that your application and supporting documents be received in a timely manner, so that you can be considered early in the admissions process. Notice of acceptance or rejection will be given as promptly as possible after the Admissions Committee has taken action on the application.

All applicants who meet the minimum admission criteria will be considered for admission into the program. However, preference is given to applicants who exceed the minimum criteria and who have prior medical experience. The actual determination of applicant admission to the Medical Imaging Program is a function of the Medical Imaging Program Admissions Committee. Admissions are competitive and are based on scholastic history, personal interview, and references. Applicants who only meet the minimum requirements are not guaranteed admission.

## ***BMSc IN MEDICAL IMAGING DEGREE REQUIREMENTS***

The following requirements must be satisfied to earn the BMSc degree:

1. Applicants must meet a minimum residency requirement of three semesters. A minimum of 46 semester hours must be completed at Emory University.
2. Applicants must complete all courses in the Emory University Bachelor of Medical Science degree program in Medical Imaging with a minimum cumulative G.P.A. of 2.0.
3. Applicants must satisfactorily complete (grade of C or better) a minimum of 30 semester hours (45 quarter hours) of specified undergraduate core curriculum courses.
4. Applicants must satisfactorily complete of a minimum of 128 semester hours of undergraduate credit.

## ***RT-BMSC IN MEDICAL IMAGING***

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The RT to BMSc degree program in Medical Imaging offers currently credentialed radiographers (RTs) the opportunity to complete a baccalaureate degree in either CT, MRI, interventional radiography (IR), Women's Health (mammography & bone densitometry), radiography education or radiology administration.

The program offers courses in an on-line and hybrid format to allow working radiographers greater flexibility in completing the baccalaureate degree mission.

## ***ADMISSION CRITERIA***

The following requirements must be satisfied for admission:

- Satisfactory physical and mental health.
- Graduation from an accredited high school with a 2.0 or higher G.P.A., or high school equivalent diploma (GED) with a composite score of at least 50 percent. Applicants must submit official transcripts from all secondary

schools that have been attended. Applicants must submit official GED scores, if applicable.

- All applicants, regardless of past educational experience, must submit scores on the Scholastic Aptitude Test of the College Entrance Examination Board (institutional code 5196) or the American College Test. A minimum composite SAT score (critical reading + math sections) of 900 or a minimum composite ACT score of 19 is recommended for admission.
  - International students from non-English-speaking countries must also have an overall score of at least - 90 on the TOEFL iBT exam.
  - *Candidates who can substantiate for the Admissions Committee through written documentation of their academic and professional experience that they are prepared for success in the program may request a waiver of the SAT/ ACT requirement.*
- Applicants must have satisfactorily completed (grade of C or better) a minimum of thirty semester hours (45 quarter hours) of undergraduate courses distributed as follows:
  - Ten semester hours (fifteen quarter hours) in humanities
    - Composition I (required)
    - Composition II (recommended)
    - Literature (required)
    - Course in either Art, Music, Theatre, or Dance (required)
  - Ten semester hours (fifteen quarter hours) in social science
    - General psychology (required)
    - U.S. History (required)
    - World History (required)
    - Elective-as needed to meet the 10 semester hour requirement (Sociology, Economics, Political Science, Anthropology)
  - Ten semester hours (fifteen quarter hours) in natural and mathematical science
    - College Algebra (required)
    - Anatomy & Physiology (required)
    - Introduction to Computer Science (required)
    - Elective-as needed to meet the 10 semester hour requirement (Biology, Chemistry, Physics, Statistics)

Applicants must submit official transcripts from all post-secondary institutes that have been attended. Applicants must have maintained a minimum cumulative GPA of 2.0 on a 4.0 scale for all required courses.

Applicants must have satisfactorily completed a program of study in medical imaging (certificate, diploma, or associate degree program).

Applicants who are graduates of JRCERT accredited medical imaging programs that award certificates or diplomas will be awarded a block of forty-eight semester hours of academic credit toward the BMSc degree. Applicants, who are graduates of medical imaging programs that award associate degrees, will be awarded transfer credit equivalent to their earned credit hours.

All courses taken to satisfy the requirements set forth in 4 above must be taken at a regionally accredited institution. All courses taken to satisfy the requirements set

forth in 5 above must be taken at a regionally accredited or JRCERT accredited institution. Graduates of foreign institutions must present transcripts of at least one full academic year (preferably in the sciences and in English) from an accredited college or university in the United States or Canada.

Applicants must hold current certification from the American Registry of Radiologic Technologists or equivalent organization.

Submission of three (3) letters of reference from instructors, co-workers, supervisors, or employers.

Submission of an application. The application and all supporting documentation should be submitted together as a packet. If some required courses are still in progress, an initial transcript should be submitted with the application packet and a final transcript should be sent when all courses are completed.

Personal interview with program faculty. Interview sessions are scheduled in February. An applicant will be invited to attend an interview session after the application and all supporting documents have been received.

## ***APPLICATION PROCEDURE***

To be considered for admission into the RT to BMSc Medical Imaging program, the Application Form must be completed on-line and the following documents must be submitted, preferably in one packet, to the program office by the February 1 application deadline.

- \$50.00 Application fee
- Personal Statement
- Official High School transcript or official GED scores (as applicable)
- Official college transcript for each college attended\*
- Official transcript from the radiography program (certificate/diploma/college) attended.
- Standardized Test Scores (SAT or ACT)\*\*
- Three letters of recommendation

\*If core curriculum classes are in progress, please submit a current transcript at the time of application and a final transcript when all core classes are completed. If an institute will only send a transcript directly to the program office, please indicate that the transcript is being sent separately.

\*\*Minimum scores required (see Admission Criteria).

After receipt of the application packet, the applicant will be contacted to inform the applicant if any additional documents are required and to schedule the required personal interview.

Admissions decisions for the RT to BMSc Medical Imaging Program, which begins only in the summer semester, are made after the interview session. It is strongly recommended that your application and supporting documents be received in a timely manner. Notice of acceptance or rejection will be given as promptly as possible after the Admissions Committee has taken action on the application.

All applicants who meet the minimum admission criteria will be considered for admission into the program. However, preference is given to applicants who exceed the minimum criteria. The actual determination of applicant admission to the RT to BMSc Medical Imaging Program is a function of the Medical Imaging Program Admissions Committee. Admissions are competitive and are based on scholastic history, personal interview, and references. Applicants who only met the minimum requirements are not guaranteed admission.

## ***DEGREE REQUIREMENTS***

The following requirements must be satisfied to earn the B.M.Sc. degree:

1. Applicants must meet a minimum residency requirement of three semesters. A minimum of 46 semester hours must be completed at Emory University.
2. Applicants must satisfactorily complete (grade of C or better) courses comparable to all courses in the Emory University Bachelor of Medical Science degree program in Medical Imaging.
3. Applicants must satisfactorily complete (grade of C or better) a minimum of 30 semester hours (46 quarter hours) of specified undergraduate core curriculum courses.
4. Satisfactory completion of 46 semester hours of required courses. All required course work must be completed with a grade of C or better.
5. Satisfactory completion of a minimum of 128 semester hours of undergraduate credit.

Note: Students, who are graduates of JRCERT accredited medical imaging programs that award certificates/ diplomas, will be awarded a block of forty-eight semester hours of academic credit toward the B.M.Sc. degree.

## ***BMSc AND RT-BMSC IN MEDICAL IMAGING ENROLLMENT POLICY***

The enrollment application is available throughout the year. The application deadline for enrollment is June 1<sup>st</sup> for the BMSc program and February 1<sup>st</sup> for the RT-BMSc program. All applicants who meet the minimum admission criteria will be considered for admission into the program. However, preference is given to applicants who exceed the minimum criteria. The actual determination of applicant admission to the Medical Imaging Program is a function of the Medical Imaging Program Admissions Committee. Admissions are competitive and are based on

scholastic history, personal interview, and references. Applicants who only met the minimum requirements are not guaranteed admission. Selection of students will be made without discrimination to age, sex, race, creed, national origin, or handicap.

All students in the BMSc program will be enrolled full-time and will be enrolled for a minimum of 12 credit hours each semester. Students in the RT-BMSc program may be enrolled as a full-time (minimum of 12 credit hours) or part-time student (< 12 credit hours).

## ***TRANSFER OF CREDIT POLICY***

Students enrolling in the Medical Imaging Program must transfer a minimum of 30 semester (45 quarter) hours of core curriculum coursework into the university system. Core curriculum courses taken to satisfy admission and graduation requirements must be taken at a regionally accredited institution (COC: SACS equivalent). Graduates of foreign institutions must present transcripts of at least one full academic year (preferably in the sciences and in English) from an accredited college or university in the United States or Canada. Only courses with a grade of "C" or higher are eligible for transfer.

Students already enrolled in a medical imaging program who wish to transfer into the Emory University Program will be evaluated on an individual basis. Only students who are currently enrolled in a degree granting, JRCERT accredited program are able to transfer. Only courses with a grade of "C" or higher are eligible for transfer. Transfer students may require a longer time to complete the course of study.

## ***ATTENDANCE***

### **Class and Examination Attendance**

Attendance at all scheduled classes is expected, but specific requirements are at the discretion of individual course directors. **Daily attendance on clinical clerkships is mandatory. Attendance is also mandatory for all tests, final examinations, and certification examinations.** Students are responsible for being present at the beginning of all examinations. Exams will begin **ON TIME**; students who arrive after an examination has begun may be refused admission to the examining room, thus jeopardizing their course grade. Requests for rescheduling or delaying examinations will not be considered except in cases of documented medical or family emergency. Deferred examinations must be taken at the time specified by the major professor of the course. Failure to take a deferred examination will result automatically in the grade of "F".

### **Reporting of Absences**

Students must report absence from examinations or from daily clinical clerkship duties and reasons thereof, as soon as possible to the Program Office and to the faculty member responsible for the course or clerkship. When it is known in advance that attendance will not be possible, notification should be made before

the day of absence. If the faculty member cannot be reached, the Program office should be asked to notify them.

When absence due to illness extends beyond 48 hours, a signed physician's report will be required (from the Student Health Service or from the student's personal attending physician). This is done primarily for the student's protection against any accusation of neglect or indifference, as well as to ensure students, in the case of illness, seek proper health care.

## ***STANDARDS OF PROGRESS***

### **GRADING SYSTEM**

A student's continued enrollment in the Medical Imaging Program is dependent upon satisfactory scholastic achievement. The criteria used in determining whether a student's scholastic standing is satisfactory are described in this section.

#### **Grading Scale**

The following system of grading is used except for courses where special permission has been granted to use Satisfactory (S) and Unsatisfactory (U):

<b>Quality Points</b>	<b>Letter Grade</b>	<b>Numerical Grade</b>
4.0	A	90-100
3.0	B	80-89
2.0	C	75-79
1.0	E	70-74
0.0	F	<70
0.0	I	Incomplete
0.0	IF	Incomplete Fail (work not completed within allotted time)
0.0	W	Withdrawal
0.0	WF	Withdrawal Fail (average <70 at time of withdrawal)

To compute a grade-point average (GPA), first identify the classes or semester to include in the calculation. Then, for each course, multiply the quality points earned times the number of credit hours attempted *on a letter grade basis*. Lastly, divide that total by sum of the credit hours attempted. Courses with a grade of S, U, W, or WU are not used in calculating the grade point average. Courses with a grade of IF or WF are counted as F when calculating the grade point average.



### **Tentative Grades**

When assigned work is not satisfactorily completed during a prescribed period, a grade of "I" (Incomplete) may be given if the instructor so desires. If the work is not subsequently completed within one year or a time period prescribed by the course instructor, a final grade of "F" or "U" will be entered on the record. The grade of "I" may be changed to a "W" in special circumstances of extended illness or injury.

### **Grade Appeals**

Students are encouraged to discuss evaluations and final grades with the course director. If a student wishes to appeal a final grade or evaluation, this should be **presented in writing** to the Program Director, within **30 days** of receiving the grade. The appeal may be based on the process that leads to the final grade/evaluation and/or questions of factual content of the evaluation process. The Program Director will then review the basis for the appeal of the final evaluation and/or grade. The Program Director may review the final grade or evaluation in terms of 1) the process that led to the final grade/evaluation, and/or 2) questions of factual content that led to the final grade/evaluation.

Upon review, the Program Director may find that there is no basis, based on process or factual content, for a change of final grade or evaluation. Alternatively, the Program Director may recommend that the course director consider any of the following: 1) for questions regarding factual content, the Program Director may recommend that the course director submit the questions and answers to a group of faculty in the field for review; 2) for questions regarding process or factual content, the Program Director may suggest additional assessment of student performance and subsequent reconsideration of the evaluation/grade; or 3) The Program Director may suggest a change of grade/evaluation. The course director will then consider the recommendation made by the Program Director and submit a written response to the Program Director and a re-considered final grade/evaluation. After review by the Program Director and submission of the re-considered grade/evaluation, the student may appeal any decision to the Program Grade Appeal Committee. The student may further appeal the Program Grade Appeal

Committee decision to the Executive Associate Dean of the Medical School. The decision by the Executive Associate Dean of the Medical School shall be final.

### **Requirements for Continued Enrollment**

A student's continued enrollment at Emory University is subject to the decision of the program's Progress and Promotions Committee that satisfactory academic progress is being made, that rules of the program and University are being complied with, and that the best interests of the school and other students are being served. The Progress and Promotions Committee may, at their discretion and irrespective of grades, declare probationary status for any student who, in their opinion, is not properly utilizing time and talents or not adhering to program and university policies.

### **Academic Standing and Academic Dismissal**

Students earning a grade of "D" in any medical imaging course will be required to retake the course in which the "D" was earned. Achievement of a grade of "C" will be required when the course is repeated; however, the initial grade of "D" will remain on the student's official transcript. Repeating a course means the student will have to interrupt the program of full-time study and graduation will be delayed for one year. During the intervening year, individualized plans of study will be developed jointly by the student and the Program Director.

Achievement of two or more grades of "D" in medical imaging courses will automatically result in exclusion from the program.

Achievement of one grade of "F" or "IF" in any medical imaging course will automatically result in exclusion from the program.

Students experiencing academic, clinical or personal difficulty may withdraw from a course. Withdrawals will only be granted prior to mid-term and a grade of W (withdrawal without penalty) or WF (withdrawal failing) will be assigned as appropriate. Withdrawing from a course means the student will have to interrupt the program of full-time study and graduation will be delayed for one year. During the intervening year, individualized plans of study will be developed jointly by the student and the Program Director.

### **Grade Point Average Requirement**

A 2.0 average must be maintained in **each semester** to remain in good academic standing and to continue in the program.

A cumulative GPA of at least 2.0 (didactic and clinical) is required for graduation.

### **Readmission Policy**

Students requesting to return to the program after a leave of absence must request readmission, in writing, to the Program Director. A student returning to the program after a leave of absence of one year or less must follow the following policies and procedures:

- 1) The student must enroll as a part-time student in the semester prior to their re-enrollment as a full-time student. In this semester the student will enroll in Independent Study. This will allow the student the opportunity to become reacquainted with the clinical and classroom environments.
- 2) The student must take written exams covering major content areas (both general radiography and minor track) taught in previously taken courses. The student must make a grade of 75 or better on each exam.
- 3) The student must take skills tests covering all competency procedures learned in previous semesters. This includes:
  - a) Simulation on all previous procedures. (Minimum score of 80)
  - b) Completion of performance objectives. (Minimum score of 75)
  - c) Completion of clinical quizzes. (Minimum score of 75)
  - d) Completion of one prerequisite exam followed by competency evaluation for all competency examinations previously completed (both routine and

final competency exams). (Minimum score of 80-routine competency exams; 90- final competency exams).

Students absent from the program for a period of greater than one year must re-enroll at the beginning of the course of study. Class size is limited by the accreditation agency and clinical capacity. Readmission will be considered only if there are positions available.

Students requesting to return to the program after a leave of absence must request readmission, in writing, to the Program Director. A student returning to the program after a leave of absence of one year or less must follow the following policies and procedures:

- 1) The student must enroll as a part-time student in the semester prior to their re-enrollment as a full-time student. In this semester the student will enroll in Independent Study. This will allow the student the opportunity to become reacquainted with the clinical and classroom environments.
- 2) The student must take written exams covering material taught in previously taken courses. The student must make a grade of 75 or better on each exam.
- 3) The student must take skills tests covering all competency procedures learned in previous semesters. This includes:
  - a) Simulation on all previous procedures. (Minimum score of 80)
  - b) Completion of performance objectives. (Minimum score of 75)
  - c) Completion of clinical quizzes. (Minimum score of 75)
  - d) Completion of one prerequisite exam followed by competency evaluation. (Minimum score of 80).

Students absent from the program for a period of greater than one year must re-enroll at the beginning of the course of study. Class size is limited by the accreditation agency and clinical capacity. Readmission will be considered only if there are positions available.

### **Exclusion**

Achievement of two or more grades of "D" in medical imaging courses will automatically result in exclusion from the program.

Achievement of one grade of "F" or "IF" in any medical imaging course will automatically result in exclusion from the program.

A student who is excluded under these rules will not be eligible to attend for the next regular semester. The Program's Progress and Promotion Committee and Admission Committee will act upon a petition for readmission for any subsequent semester.

### **Satisfactory Academic Progress**

A student is considered to be making satisfactory academic progress as long as a G.P.A. of 2.0 or better for completed courses is earned. All students will be able to review grades via Canvas throughout each semester. Students who are at risk of failing will receive counseling at the mid-point and end of each semester to review their status in each course.

## **Registration**

All students must register on the dates indicated in the Academic Calendar. Registration information may be obtained from the program office. *Students who do not complete registration on registration day are charged a late fee of \$150.00.* After the last date in the Academic Calendar for changing courses, registration may be allowed only by joint consent of the director, the registrar and instructors concerned. After 10 calendar days have lapsed from the date classes begin, registration is not permitted.

Tuition is due and payable at registration for each semester. Payment plans are available during the fall and spring semesters. For information contact Student Accounts.

## **Cancellation and Withdrawal**

Registration may be canceled during the first week of classes. See the Academic Calendar for the precise date each semester. Cancellation of registration means that no deficiencies will be noted on the student's transcript.

After the first week of classes, a student who wishes to leave the University must go through a withdrawal procedure. Honorable dismissal requires that this procedure be followed. Withdrawal forms may be secured at the Office of Medical Education and Student Affairs.

Refunds of tuition are only partial. A student may cancel registration within the first week of the semester (first five class days), in which case only the deposit will be forfeited (or \$25.00 if no deposit was required). After the first week of classes, a student may voluntarily withdraw; the forfeit in withdrawal increases progressively but is not less than for cancellation as a minimum. There is no refund of tuition after approximately five weeks. No refund is given if a student drops only a part of the course work for which he registered after the last day for approved schedule changes as specified in the Academic Calendar. There is no refund for a student who is dismissed from the program.

Readmission of students following withdrawal for medical reasons requires medical clearance by designated University health official.

A student who withdraws may not continue living in University housing or participate in student activities and is ineligible for University health services.

A student's continued enrollment at Emory University is a privilege based not only on a satisfactory scholastic status, but also upon good emotional health. If, in the opinion of the Dean of a student's school, the student demonstrates evidence of an emotional disorder, the student may be referred by the Dean to the University Student Health Service for psychiatric evaluation. Refusal to obtain a psychiatric evaluation, when properly requested to do so, or determination by the University Health Service that withdrawal would be in the best interest of the student and the University shall be cause for involuntary withdrawal of the student from the University by the Dean.

Withdrawal in such cases shall normally incur no academic penalty for the term in which the student is enrolled; and tuition refund, if any, shall be based on the schedule established for voluntary withdrawal. The Dean shall inform the student in writing of the effective date of the involuntary withdrawal, and shall explain in writing the procedure for application for readmission to Emory University.

Application for readmission after withdrawal for psychiatric reasons will require evaluation by the University psychiatrist. A person seeking readmission may choose to submit a written report from his/her own psychiatrist at the individual's own expense. In no case shall readmission be granted after psychiatric withdrawal without the approval of the University Health Service.

## ***TUITION AND FEES 2021-2022\****

Tuition	\$17,700
Transcript Fee	\$70.00 ( <i>1<sup>st</sup> semester only</i> )
Clinical Administrative Fee	\$100.00 ( <i>1<sup>st</sup> semester only</i> )
Immunization/Disability Fee	\$375.00
Mental Health/Counseling Fee	\$282.00
Technology Fee	\$225.00
Athletic Fee	\$455.00
Activity Fee	\$224.00

**\*Includes fees charged to new students one-time only**

### **ADDITIONAL COSTS**

Book cost	\$1,700.00	(Estimate for entire program of study)
Parking fee		\$672.00 (\$336 Fall & Spring semesters only)
Uniforms		\$400.00 (Estimated cost for 4 uniforms and 1 lab coat)
Health insurance	\$3,816.00	(per year, if purchased through University Plan)

### **Refund policy**

Students who choose to withdraw from the curriculum for any reason may qualify for a tuition refund on a per semester basis. Tuition refunds will apply as follows:

<b>Withdrawal during</b>	<b>Charge</b>	<b>Credit</b>
First 5 class days	0%	100%
Second 5 class days	20%	80%
Third 5 class days	40%	60%
Fourth 5 class days	60%	40%
Fifth 5 class days	80%	20%

*There will be no refunds after the fifth week of any semester.*

### **Deferred Payment/Emory Payment Plan**

The Emory Payment Plan is available to qualified students who wish to divide tuition fees into scheduled payments. A \$60 service fee is charged to participate in the

Emory Payment Plan. The fee is added to the second payment.

Instructions are given for deduction of loans and for University-administered scholarships in listing the amount due, which is to be paid in four installments each semester according to the Emory Payment Plan Schedule.

***To set up a payment plan***, contact Student Financial Services at (404)727-6095, visit [www.emory.edu/studentfinancials](http://www.emory.edu/studentfinancials), or sign up in OPUS through the Student Center.

## **Financial Assistance**

Prospective students who need financial assistance should begin early to investigate aid available to them. They should complete the Free Application for Federal Student Aid (FAFSA) as soon as possible. The FAFSA can be accessed on the web at [www.fafsa.ed.gov](http://www.fafsa.ed.gov). The Emory University school code is 001564. Students begin the Medical Imaging program in the summer semester, or Fall semester. Students beginning in Summer 2020 must complete a 2021-2022 **FAFSA** for Summer 2020 as well as a 2021-2022 **FAFSA** for Fall 2020, Spring 2021 and Summer 2021.

Further information regarding financial assistance can be accessed at <http://med.emory.edu/education/financial/dpt/index.html>.

All matriculating students with loans must complete a mandatory online entrance interview as well as an exit interview upon graduation.

### **Scholarships**

There are a limited number of scholarships for Medical Imaging students based on financial need. Eligibility is based on information from your FAFSA, and no additional application is required. A few merit scholarships may be awarded to incoming students based on merit, and these do not require an application, either.

### **Health Professions Tuition Loans**

Students are eligible to borrow from the University to assist in paying tuition. No additional application is required.

### **Federal Loans**

The Office of Financial Aid will determine a student's eligibility for federal direct Stafford Loans. Students who wish to accept those loans will be given instructions on how to complete the loan promissory note when they receive their financial aid award letter.

### **Private loans**

Students who need additional funds beyond the amount awarded by the Financial Aid Office may apply for private student loans. These loans require the borrower to undergo a credit check, and the interest rate is determined by the student's credit score. More information about these and all other student loans is available on the Financial Aid Office website at <http://www.studentaid.emory.edu/types/loans/private.html>

**Veterans Benefits**

Students eligible for Veterans Administration Benefits should notify the Office of Financial Aid and coordinate this Information with the Office of the Registrar.

**Other Scholarships**

Some professional organizations for people in the health care industry offer scholarship opportunities. Students can research these programs by searching on the web, by talking to faculty members in their academic program and by referring to the scholarship information in the Orientation Manual. In most cases, a separate application would be supplied by the sponsor of the scholarship.

***ACADEMIC CALENDAR 2021-2022*****FALL SEMESTER 2021**

<b>August 25</b>	Classes begin.
<b>September 1</b>	Last day to cancel registration with full refund. Last day for approved schedule changes. Last day to drop courses without incurring a "W" or "WF."
<b>September 6</b>	Labor Day Holiday
<b>September 10</b>	Last day to file application for degree to be granted at the end of the semester.
<b>October 11-12</b>	Fall Break
<b>October 25</b>	Pre-registration for Spring begins
<b>November 25-26</b>	Thanksgiving Recess
<b>December 3</b>	Classes end.
<b>December 6-10</b>	Exam period.

**December 18**                      Fall Semester ends.

**SPRING SEMESTER 2022**

**January 4**                      Classes begin.

**January 17**                      MLK Holiday.

**January 17**                      Last day to cancel registration with full refund. Last day for approved schedule changes. Last day to drop courses without incurring a "W" or "WF."

**February 4**                      Last day to file application for degree to be granted at the end of the semester.  
Summer pre-registration begins.

**March 7-11**                      Spring Break.

**March 21**                      Pre-registration for Fall

**April 22**                      Classes end.

**April 25-29**                      Exam period.

**May 9**                      Term ends  
**Commencement**

**SUMMER SEMESTER 2022**

**May 16**                      Registration for full Summer semester.

**May 18**                      Classes begin.

**May 30**                      Memorial Day Holiday



	(Observed)
<b>July 1</b>	Last day to file application for degree to be granted at the end of the semester.
<b>July 4</b>	Independence Day Holiday
<b>July 29</b>	Classes end.
<b>August 1-5</b>	Exam period.
<b>August 5</b>	Summer semester ends.

## ***BMSc IN MEDICAL IMAGING COURSES***

### **Core Courses**

#### **MI 201: Introduction to Medical Imaging**

Fall. Credit, two hours. This course introduces the student to the principles and practices of medical imaging. The function of radiographer and their relationship with the health care team is stressed. The student is also oriented to the hospital environment and health care systems.

#### **MI 203: Medical Terminology**

Fall. Credit, one hour. This course introduces the student to medical terminology. Emphasis is placed on terminology pertinent to diagnostic radiology.

#### **MI 211a, b, c: Patient Care I, II, and III**

Fall, Spring, and Spring. Credit, nine hours.

Prerequisites: MI 211a prior to MI 211b prior to MI211c.

Basic patient care needs and interpersonal relationships with patients, peers, physicians, and other members of the health care team are stressed. Basic principles of radiographing the pediatric patient and geriatric patient are included. Confidentiality and medico-legal considerations including professional liability, patient records, and professional guidelines are introduced. MI 211c focuses on advanced patient care concepts including cardiac monitoring and venipuncture.

#### **MI 213a, b, c, d, e: Medical Imaging Procedures I, II, III, IV, and V**

Fall, Spring, Summer, Fall, and Spring. Credit, thirteen hours total.

Prerequisites: MI 213a prior to MI 213b prior to MI 213c prior to MI 213d prior to MI 213e. Lecture, on-line, and laboratory course emphasizing routine and specialized procedures used in diagnostic radiology.

**MI 221a, b, c: Anatomy and Physiology I, II, and III**

Fall, Spring, and Fall. Credit, nine hours total.

Prerequisite: MI 221a prior to MI 221b prior to

MI 221c. Human anatomy, emphasizing the body tissues and systems, is included. Emphasis is placed on the skeletal system and other systems closely associated with imaging. Cross-sectional anatomy is the focus of MI 221c. Emphasis is placed on radiographic anatomy in all courses.

**MI 261 a, b: Clinical Clerkship**

Fall and Spring. Credit, six hours total. Prerequisites: MI 261a prior to MI 261b. A series of courses designed for persons entering the field of Medical Imaging to become familiar with the practical application of theories, principles, morals and ethics of Medical Imaging and the medical field. The students will go from observation to participation in general diagnostic exams.

**MI 301: Survey of Medical and Surgical Diseases**

Summer. Credit, three hours.

Prerequisites: MI 203, MI 221 a-c.

An overview of common diseases intended to orient the technologist to the nature of a patient's disease is presented. Emphasis is placed on the radiographic appearance of common pathologies. The effects of pathology on radiographic quality and diagnostic radiologic procedures will be considered.

**MI 321a, b: Physical Principles of Imaging I and II**

Spring and Summer. Credit, six hours total.

Prerequisites: MI 321a prior to MI 321b.

Fundamentals of radiologic physics and its application to diagnostic radiology are covered. These courses include both the rudiments of basic physics and elementary principles of electricity and magnetism required for understanding x-ray production and interaction.

**MI 323: Medical Imaging Safety**

Summer. Credit, two hours. Radiation protection, personnel monitoring, radiation shielding, and patient protection are introduced in this course. Emphasis is placed on protection mechanisms utilized in diagnostic radiology. Safety issues related to CT and MRI are also presented.

**MI 325a, b: Principles of Radiographic Technique I and II**

Summer and Fall. Credit, six hours total.

Prerequisites: MI 325a prior to MI 325b.

Technical factors regulating the four radiographic qualities of receptor exposure, contrast, spatial resolution, and distortion are emphasized. Students acquire the skills necessary to adapt technical factors in order to produce diagnostic radiographs in the digital imaging environment.

**MI 327: Computer Applications in Medical Imaging**

Fall. Credit, one hour.

This course introduces the student to the use of computers in radiology.

**MI 329: Image Processing Technique**

Summer. Credit, two hours.

Current trends in the processing, analysis, manipulation, and display of digital radiographic images. Capture of image data from CR and DR detectors is discussed. Pre- and post- image processing operations are presented. The calculation and evaluation of exposure indicators is explained. The practical application of radiographic techniques, technique myths, and image evaluation in digital imaging are discussed. Digital image artifacts are also explained.

**MI 361a, b, c: Clinical Internship**

Summer, Fall and Spring. Credit, twelve hours total.

Prerequisites: MI 361a prior to MI 361b prior to MI 361c.

A series of courses designed for persons entering the field of Medical Imaging to become familiar with the practical application of theories, principles, morals and ethics of Medical Imaging and the medical field. Students begin to master basic skills in the operation of a radiographic room and in radiographic positioning. Students work independently under indirect supervision after successful competency evaluation. Students will also experience a variety of advanced imaging modalities.

**MI 390r: Medical Imaging Seminar**

Fall and Spring. Credit, two hours total.

These courses will explore a current topic in the radiologic sciences. Discussion of journal and textbook readings pertinent to the assigned topic will be required.

**MI 411: Pharmacology**

Summer. Credit, two hours.

Prerequisites: MI 221a, b, MI 211a-c.

This course is designed to provide basic concepts of pharmacology. The theory and practice of basic techniques of venipuncture and the administration of diagnostic contrast agents and/or intravenous medications is included. The appropriate delivery of patient care during procedures requiring contrast administration is emphasized.

**MI 421: Imaging Equipment**

Spring. Credit, three hours. Prerequisites: MI 321a, b, MI 325a, b.

This course introduces the student to the different types of imaging systems. The basic principles of digital imaging, CT, MRI, interventional radiology and mammography equipment are presented.

**MI 423: Radiation Biology**

Fall. Credit, two hours.

Prerequisites: MI 321a, b, and MI 323.

This course involves the study of organisms following absorption of energy from ionizing radiation. Interactions of radiation in matter, short and long-term biological effects, and cell survival kinetics are emphasized.

**MI 425: Quality Control**

Fall. Credit, two hours. Prerequisites: MI 321a, b and MI 329.

This course focuses on external factors affecting the quality of an image. Emphasis is placed on healthcare and imaging accrediting bodies, radiographic equipment evaluation, and repeat analysis. It includes didactic and lab components.

**MI 427: Evaluation and Measurement**

Spring. Credit, three hours.

Prerequisites: All prior courses.

This course utilizes various methods to determine achievement of cognitive competencies. Preparation for the ARRT national certifying examination is emphasized.

**MI 461a, b, c: Clinical Practicum**

Summer, Fall, and Spring. Credit, twelve hours total.

Prerequisites: MI 461 a prior to 461b prior

to MI 461c. A series of advanced clinical education courses designed for persons entering the field of Medical Imaging to practice independently all general radiography examinations after successful competency evaluation. These courses prepare students to enter the workforce as a general diagnostic radiographer with exceptional work ethic.

**MI 496r: Independent Study**

Spring. Credit, two hours.

Prerequisites: All prior courses.

This course involves the completion of a research paper and project on a selected medical imaging topic. The findings must then be presented to the class in a formal presentation.

MI 497r: Directed Study

Fall. Credit, two hours.

This course involves preliminary preparation for the national certifying examination, as well as, the completion of a proposal and project plan on a pertinent topic in radiology.

**Course Descriptions (Administration Track)****MI 430: Principles of Management**

Summer. Credit, three hours.

This course will explore management theory and practice and their impact on the development and performance of organizations. Through a critical assessment of the classical and alternative approaches to the discipline, the student will learn the essentials of leadership of contemporary organizations in a global environment. Related topics such as human resource management, organizational development and change, and their effect on productivity and performance will be examined.

**MI 431: Business Communication**

Summer. Credit, three hours.

This course is designed for the professional whose activities require communicative abilities in a variety of interpersonal group situations. This course will help students develop an understanding of the communication process and will allow students to critically evaluate their skills. Methods of effective oral and written presentation will be introduced.

**MI 433: Organizational Behavior**

Fall. Credit, three hours.

This course will examine the theories and practice of organizational behavior. Individual and group behaviors in organization will be addressed. Organizational dynamics and the development of work environment that fosters successful team building will be studied. Case studies will also be used to enhance students' experiences.

**MI 435: Hospital Organization and Personnel Management**

Fall. Credit, three hours.

This course will explore health care systems and contemporary problems and issues in health care administration. Functional and structural aspects of the hospital organization will also be discussed- authority, responsibility and role relationship of the governing board, administration and medical staff. The internal and external forces affecting the administrative process will be included.

**MI 437: Healthcare Finance.**

Spring. Credit, three hours.

Decision-making processes as they relate to effective management of financial resources will be discussed. Students will acquire knowledge in interpreting health care institution financial reports and techniques of financial planning and control. Emerging trends in the system and the changing roles of government, and other private providers will be discussed.

**MI 439: Principles of Marketing**

Spring. Credit, three hours.

This course provides students with an understanding of modern marketing practice, philosophy, marketing decisions, market segmentation, product positioning, buyer psychology and behavior and new product development. Marketing represents both a key function and philosophy that provides a foundation for the successful operation of all business and non-profit organizations today. Marketing executives perform the essential tasks of planning the firm's competitive market position, product distribution and advertising strategies.

**MI 463a, b, c: Management Practicum I, II, and III**

Summer, Fall, and Spring. Credit, six hours total.

The practicum will involve an individually designed learning experience. It will be a field-based experience designed to reinforce didactic content and to help the student make a successful role transition into a health care setting as a supervisor, manager or administrator. The student will be assigned to radiology departments for administrative practical experience. The courses are designed to help the

student identify a systematic approach to: work flow analysis, organization, department budget, planning, record systems, job evaluations, quality assurance and other problem solving tasks.

## **Course Descriptions (Education Track)**

### **MI 431: Business Communication**

Summer. Credit, three hours.

This course is designed for the professional whose activities require communicative abilities in a variety of interpersonal group situations. This course will help students develop an understanding of the communication process and will allow students to critically evaluate their skills. Methods of effective oral and written presentation will be introduced.

### **MI 435: Hospital Organization and Personnel Management**

Fall. Credit, three hours.

This course will explore health care systems and contemporary problems and issues in health care administration. Functional and structural aspects of the hospital organization will also be discussed- authority, responsibility and role relationship of the governing board, administration and medical staff. The internal and external forces affecting the administrative process will be included.

### **MI 440: Introduction to Medical Imaging Education**

Summer. Credit, three hours. This course provides an overview of radiologic science education. Professional organizations and accreditation requirements influencing the curriculum will be identified. The student will be introduced to effective lesson preparation and utilization of selected multimedia materials.

### **MI 441: Methods and Materials of Teaching Medical Imaging**

Summer. Credit, three hours.

This course involves the development of instructional materials for specific units in the radiography curriculum. Objectives, lesson plans, visual aids and evaluation instruments will be developed. Emphasis will be placed on the organization and presentation of educational materials.

### **MI 443r: Practice Teaching (Clinical)**

Fall and Spring. Credit, five hours total.

These courses prepare the student for teaching in the clinical setting. Concepts related to clinical objectives, instructional methodologies, scheduling, and competency evaluation are introduced. Students will be assigned to work with students in the clinical education settings.

### **MI 445r: Practice Teaching (Didactic)**

Fall and Spring. Credit, five hours total.

These courses prepare the student for teaching basic radiologic science didactic material. The student will prepare lesson plans, present course material, and evaluate student progress in selected subject areas.

**MI 447: Administration of Medical Imaging Programs**

Spring. Credit, three hours.

This course will explore contemporary problems and issues in radiologic science program administration. Functional and structural aspects of the program organization will also be discussed. This course also involves the design of a radiologic science program according to the Joint Review Committee on Education in Radiologic Technology Standards or comparable guides for other imaging disciplines. Emphasis is placed on the determination program compliance with the JRCERT Standards.

**Course Descriptions (Computed Tomography Track)****MI 450: CT Physics and Instrumentation**

Summer. Credit, three hours.

Physics topics covered include the characteristics of radiation, CT beam attenuation, linear attenuation coefficients, tissue characteristics, and Hounsfield number application. Data acquisition and manipulation techniques and image reconstruction algorithms will be explained. CT systems and operations will be fully explained.

**MI 451a, b, c: CT Procedures I, II, and III**

Summer, Fall, and Spring. Credit, six hours total.

CT protocols will be taught for differentiation of specific structures and pathology. Patient history, education and preparation, contrast media type, amount and administration route, patient positioning and orientation, scan parameters, image display and common pathology will be covered.

**These courses complement Clinical Practicum I, II, and III.****MI 465a, b, c: CT Practicum I, II, and III**

Summer, Fall, and Spring. Credit, nine hours total.

These courses involve the application of didactic information in the clinical setting. The student will observe, assist, and perform basic patient care and clinical procedures under direct supervision. The student will be required to complete specific repetitions in accordance with the ARRT requirements.

**Course Descriptions (Magnetic Resonance Imaging Track)****MI 453a, b, c: MRI Physics and Instrumentation I, II, and III**

Summer, Fall, and Spring. Credit, six hours total.

These courses introduce the student to the concepts related to production of the MR image. MR basics, image weighting and contrast, encoding, parameters, pulse sequences, flow phenomena, artifacts, vascular and cardiac imaging, contrast agents, and functional MRI will be covered in these courses.

**MI 455a, b, c: MRI Procedures I, II, and III**

Summer, Fall, and Spring. Credit, six hours total.

MRI protocols will be taught for differentiation of specific structures and pathology. MRI safety, instrumentation and equipment, patient care and preparation, contrast

media type, amount and administration route, patient positioning and orientation, scan parameters, filming and common pathology will be covered. These courses complement Clinical Practicum I, II, and III.

**MI 467a, b, c: MRI Practicum I, II, and III**

Summer, Fall, and Spring. Credit, nine hours total.

These courses involve the application of didactic information in the clinical setting. The student will observe, assist, and perform basic patient care and clinical procedures under direct supervision. The student will be required to complete specific repetitions in accordance with the ARRT requirements.

## ***RT TO BMSC IN MEDICAL IMAGING COURSE LIST***

All RT-BMSc students must complete all of the program's core courses and the courses specific to their selected minor track. All courses are listed below with a brief description and the course format.

### **Core Courses**

**MI 211C. Patient Care III**

Spring, Senior year. Credit, 3 hours.

MI 211C focuses on advanced patient care techniques such as cardiac monitoring and trauma situations.

Format: Hybrid

**MI 221C. Anatomy and Physiology III**

Summer, Senior year. Credit, 3 hours.

MI 21C focuses on human anatomy with emphasis on cross-sectional anatomy.

Format: Hybrid

**MI 323. Medical Imaging Safety,**

Summer, Senior year. Credit, 2 hours.

Radiation protection, personnel monitoring, radiation shielding, and patient protection are introduced in this course. Emphasis is placed on protection mechanisms utilized in diagnostic radiology. Safety issues related to CT and MRI are also presented.

Format: On-line

**MI 327. Computer Applications in Medical Imaging**

Fall, Senior year. Credit, 1 hour.

This course introduces the student to the use of computers in radiology.

Format: On-line

**MI 390R. Medical Imaging Seminar**

Fall and Spring, Senior year. Credit, 2 hours.

These courses will explore a current topic in the radiologic sciences. Discussion of journal readings pertinent to the assigned topic will be required. Format: Hybrid



**MI 411. Pharmacology**

Fall, Senior year. Credit, 2 hours.

This course is designed to provide basic concepts of pharmacology. The theory and practice of basic techniques of venipuncture and the administration of diagnostic contrast agents and/or intravenous medications is included. The appropriate delivery of patient care during these procedures is emphasized.

Format: Hybrid

**MI 421. Imaging Equipment**

Summer, Senior year. Credit, 3 hours.

This course introduces the student to the different types of imaging systems. The basic principles of digital imaging and PACS are presented. Format: On-line

**MI 427. Evaluation and Measurement**

Spring, Senior year. Credit, 3 hours.

This course utilizes various methods to determine achievement of cognitive competencies. Preparation for the ARRT national certifying examination is emphasized. Format: On-line. *Prerequisites: All prior courses.*

**MI 496R. Independent Study**

Spring, Senior year. Credit, 2 hours.

This course involves the completion of a research paper and project on a selected medical imaging topic. The findings must then be presented to the class in a formal presentation.

Format: Hybrid. *Prerequisites: All prior courses.*

**MI 497R. Directed Study**

Fall, Senior year. Credit, 2 hours.

This course involves preliminary preparation for the national certifying examination, as well as the completion of a proposal and project plan on a pertinent topic in radiology. Format: On-line

**RT - BMSc Management Track Course Descriptions****MI 430: Principles of Management**

Summer, Senior year. Credit, 3 hours.

This course will explore management theory and practice and their impact on the development and performance of organizations. Through a critical assessment of the classical and alternative approaches to the discipline, the student will learn the essentials of leadership of contemporary organizations in a global environment. Related topics such as human resource management, organizational development and change, and their effect on productivity and performance will be examined.

Format: Hybrid

**MI 431: Business Communication**

Summer, Senior year. Credit, 3 hours.

This course is designed for the professional whose activities require communicative abilities in a variety of interpersonal group situations. This course will help students

develop an understanding of the communication process and will allow students to critically evaluate their skills. Methods of effective oral and written presentation will be introduced.

Format: On-line

### **MI 433: Organizational Behavior**

Fall, Senior year. Credit, 3 hours.

This course will examine the theories and practice of organizational behavior. Individual and group behaviors in organization will be addressed. Organizational dynamics and the development of work environment that fosters successful team building will be studied. Case studies will also be used to enhance students' experiences.

Format: Hybrid

### **MI 435: Hospital Organization and Personnel Management**

Fall, Senior year. Credit, 3 hours.

This course will explore health care systems and contemporary problems and issues in health care administration. Functional and structural aspects of the hospital organization will also be discussed- authority, responsibility and role relationship of the governing board, administration and medical staff. The internal and external forces affecting the administrative process will be included. Format: Hybrid

### **MI 437: Healthcare Finance**

Spring, Senior year. Credit, 3 hours.

Decision-making processes as they relate to effective management of financial resources will be discussed. Students will acquire knowledge in interpreting health care institution financial reports and techniques of financial planning and control. Emerging trends in the system and the changing roles of government, and other private providers will be discussed. Format: Hybrid

### **MI 439: Principles of Marketing, 3 credits**

Spring, Senior year. Required, Letter Grade

Instructor: Dan Crawley

This course provides students with an understanding of modern marketing practice, philosophy, marketing decisions, market segmentation, product positioning, buyer psychology and behavior and new product development. Marketing represents both a key function and philosophy that provides a foundation for the successful operation of

all business and non-profit organizations today. Marketing executives perform the essential tasks of planning the firm's competitive market position, product distribution and advertising strategies. Format: Hybrid

### **MI 463a, b, c: Management Practicum I, II, and III**

Summer, Fall, and Spring, Senior year. Credit, 6 hours total.

Prerequisites: MI 463a prior to 463b prior to MI 463c.

The practicum will involve an individually designed learning experience. It will be a field-based experience designed to reinforce classroom content and to help the student make a successful role transition into a health care setting. The student will be assigned to radiology departments for administrative practical experience. The course is designed to help the student identify a systematic approach to: work flow

analysis, organization, department budget, planning, record systems, job evaluations, quality assurance and other problem solving tasks. Format: Hybrid.

## **RT - BMSc Education Track Course Descriptions**

### **MI 431: Business Communication**

Summer, Senior year. Credit, 3 hours.

This course is designed for the professional whose activities require communicative abilities in a variety of interpersonal group situations. This course will help students develop an understanding of the communication process and will allow students to critically evaluate their skills. Methods of effective oral and written presentation will be introduced. Format: On-line

### **MI 435: Hospital Organization and Personnel Management**

Fall, Senior year. Credit, 3 hours.

This course will explore health care systems and contemporary problems and issues in health care administration. Functional and structural aspects of the hospital organization will also be discussed- authority, responsibility and role relationship of the governing board, administration and medical staff. The internal and external forces affecting the administrative process will be included. Format: Hybrid

### **MI 440: Introduction to Medical Imaging Education**

Summer, Senior year. Credit, 3 hours.

This course provides an overview of radiologic science education. Professional organizations and accreditation requirements influencing the curriculum will be identified. The student will be introduced to effective lesson preparation and utilization of selected multimedia materials. Format: Hybrid

### **MI 441: Methods and Materials of Teaching Medical Imaging**

Summer, Senior year. Credit, 3 hours.

This course involves the development of instructional materials for specific units in the radiography curriculum. Objectives, lesson plans, visual aids and evaluation instruments will be developed. Emphasis will be placed on the organization and presentation of educational materials. Format: Hybrid

### **MI 443r: Practice Teaching (Clinical)**

Fall and Spring, Senior year. Credit, 5 hours.

These courses prepare the student for teaching in the clinical setting. Concepts related to clinical objectives, instructional methodologies, scheduling, and competency evaluation are introduced. Students will be assigned to work with students in the clinical education settings. Format: Hybrid

### **MI 445r: Practice Teaching (Didactic)**

Fall and Spring, Senior year. Credit, 5 hours.

Instructor: Dawn Couch Moore

These courses prepare the student for teaching basic radiologic science didactic material. The student will prepare lesson plans, present course material, and evaluate student progress in selected subject areas. Format: Hybrid

### **MI 447: Administration of Medical Imaging Programs**

Spring, Senior year. Credit, 3 hours.

This course will explore contemporary problems and issues in radiologic science program administration. Functional and structural aspects of the program organization will also be discussed. This course also involves the design of a radiologic science program according to the Joint Review Committee on Education in Radiologic Technology *Standards* or comparable guides for other imaging disciplines. Emphasis is placed on the determination program compliance with the JRCERT *Standards*. Format: Hybrid

### **RT - BMSc Computed Tomography Track Courses**

#### **MI 450: CT Physics and Instrumentation**

Summer, Senior year. Credit, 3 hours.

Physics topics covered include the characteristics of radiation, CT beam attenuation, linear attenuation coefficients, tissue characteristics, and Hounsfield number application. Data acquisition and manipulation techniques and image reconstruction algorithms will be explained. CT systems and operations will be fully explained.

Format: On-line

#### **MI 451a, b, c: CT Procedures I, II, and III**

Summer, Fall, and Spring, Senior year. Credit, 6 hours total.

Prerequisites: MI 451a prior to 451b prior to MI 451c.

CT protocols will be taught for differentiation of specific structures and pathology. Patient history, education and preparation, contrast media type, amount and administration route, patient positioning and orientation, scan parameters, filming and common pathology will be covered. These courses complement Clinical Practicum I, II, and III. Format: On-line.

#### **MI 465a, b, c: CT Practicum I, II, and III**

Summer, Fall, and Spring, Senior year. Credit, 9 hours total.

Prerequisites: MI 465a prior to 465b prior to MI 465c.

These courses involve the application of didactic information in the clinical setting. The student will observe, assist, and perform basic patient care and clinical procedures under direct supervision. The student will be required to demonstrate competency in numerous CT procedures. Format: Traditional.

### **RT - BMSc Magnetic Resonance Imaging Track Courses**

#### **MI 453a, b, c: MRI Physics and Instrumentation I, II, and III, 6 credits**

Summer, Fall, and Spring, Senior year. Credit, 6 hours total.

Prerequisites: MI 453a prior to 453b prior to MI 453c.

These courses introduce the student to the concepts related to production of the MR image. Pulse sequences, parameters and tissue characteristics, types of magnets, gradient fields, and spectroscopy will be covered in these courses. Format: On-line.

**MI 455a, b, c: MRI Procedures I, II, and III**

Summer, Fall, and Spring, Senior year. Credit, 6 hours total.

Prerequisites: MI 455a prior to 455b prior to MI 455c.

MRI protocols will be taught for differentiation of specific structures and pathology. Patient history, education and preparation, contrast media type, amount and administration route, patient positioning and orientation, scan parameters, filming and common pathology will be covered. These courses complement Clinical Practicum I, II, and III. Format: On-line.

**MI 467a, b, c: MRI Practicum I, II, and III**

Summer, Fall, and Spring, Senior year. Credit, 9 hours total

Prerequisites: MI 467a prior to 467b prior to MI 467c.

These courses involve the application of didactic information in the clinical setting. The student will observe, assist, and perform basic patient care and clinical procedures under direct supervision. The student will be required to demonstrate competency in numerous MRI procedures. Format: Traditional.

**RT – BMSc Interventional Radiology Track Courses****MI 457a, b, c: Advanced Clinical Procedures, 7 credits**

Summer, Fall, and Spring, Senior year. Credit, 7 hours total.

Prerequisites: MI 457a prior to 457b prior to MI 457c.

IR protocols will be taught for differentiation of specific structures and pathology. Patient history, education and preparation, contrast media type, amount and administration route, patient positioning and orientation, filming and common pathology will be covered. These courses complement Advanced Clinical Practicum I, II, and III. Format: Hybrid.

**MI 469a, b, c: Advanced Clinical Practicum I, II, and III**

Summer, Fall, and Spring, Senior year. Credit, 9 hours total.

Prerequisites: MI 469a prior to 469b prior to MI 469c.

These courses involve the application of didactic information in the clinical setting. The student will observe, assist, and perform basic patient care and clinical procedures under direct supervision. The student will be required to demonstrate competency in numerous IR procedures. Format: Traditional.

**RT - BMSc Women's Health Track Courses****MI 457a, b, c: Advanced Clinical Procedures**

Summer, Fall, and Spring, Senior year. Credit, 7 hours total.

Prerequisites: MI 457a prior to 457b prior to MI 457c.

Mammography and bone densitometry protocols will be taught for differentiation of specific structures and pathology. Patient history, education and preparation, contrast media type, amount and administration route, patient positioning and orientation, filming and common pathology will be covered. These courses complement Advanced Clinical Practicum I, II, and III. Format: Hybrid

**MI 469a, b, c: Advanced Clinical Practicum I, II, and III**

Summer, Fall, and Spring, Senior year. Credit, 9 hours total.

Prerequisites: MI 469a prior to 469b prior to MI 469c.

These courses involve the application of didactic information in the clinical setting.

The student will observe, assist, and perform basic patient care and clinical procedures under direct supervision. The student will be required to demonstrate competency in mammography and bone densitometry procedures. Format:

Traditional.

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