

MASTER OF SCIENCE DEGREE PROGRAMS IN ANATOMY

Department of Anatomy Case Western Reserve University

MS in Anatomy (with thesis - plan A)
MS in Applied Anatomy (without thesis - plan B)
Joint MD/MS in Applied Anatomy

[Effective February 6, 2018]

Minimum Requirements of the School of Graduate Studies

General: Grade point average of 2.5 after two semesters or 12 hours, 2.75 after four semesters or 21 hours, and 2.75 cumulative to graduate; program of study to be completed within five years.

Plan A Master's Degree

30 credit hours of study

18 semester hours of coursework, plus thesis (thesis work equivalent to no fewer than 9 semester hours of registration), or 21 semester hours of coursework, plus thesis (thesis work equivalent to no fewer than 6 semester hours of registration) A minimum of 18 semester hours of course work, including thesis, must be at the 400-level or above.

Plan B Master's Degree

30 credit hours of study

No fewer than 18 semester hours of course work at the 400 level; comprehensive exam administered by the department or program; examination may be written, oral or both; the student must be registered in the Graduate School at the time of the examination, either for a course or for EXAM 600.

Specific Requirements of the Department of Anatomy for Master of Science Degree (Plan A and Plan B)

The requirements for the MS degree in Applied Anatomy **exceed** the requirements of the School of Graduate Studies. **The Department of Anatomy requires 30 credit hours of study and a 3.0 cumulative GPA to graduate.** Students are expected to maintain a 3.0 GPA throughout the program; failure to maintain a 3.0 GPA for two semesters may result in separation from the program. Required courses of the Anatomical Sciences Core Curriculum (ASCC) represent 19 credit hours. A minimum of one Surgical Anatomy course (4 credits) is required of medical students seeking the joint MD/MS degree. A thesis-based Master of Science degree (Plan A) requires a minimum of 6 credit hours of ANAT 651 (Thesis: Master of Science) as part of the elective coursework.

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Coursework

The required courses comprising the Anatomical Sciences Core Curriculum (ASCC) represent 19 credit hours (see below). The student must earn a grade of “**B or better**” in each of these courses. Should a minimum grade of “B” not be achieved, the student may repeat the course **once** to earn a “**B or better**” grade. An ASCC course may not repeat the course more than once; a second unsatisfactory performance makes the student ineligible for the MS in Applied Anatomy degree. [Credits of a repeated course do not contribute to the 30-credit-hour minimum, although they are included in total credit count and in the GPA calculation.]

Required courses are the following:

Anatomical Sciences Core Curriculum:

ANAT 411	Human Gross Anatomy/lab (6 credits)
ANAT 412, 413	Histology and Ultrastructure/lab (6 credits)
ANAT 414	Neurological Anatomy/lab (4 credits)
ANAT 491	Embryology (3 credits)

Plan A (thesis-based) MS students must participate in journal clubs related to their respective laboratories to enhance their research experience.

TOTAL required hours of core coursework in Anatomy: MS = 19

Surgical Anatomy course requirement (4 credits, fourth year) for the **joint MD/MS** degree may be fulfilled by taking one of the two Surgical Anatomy courses:

ANAT 515:	Surgical Anatomy: Musculoskeletal & Orthopedics
ANAT 516	Surgical Anatomy: Head & Neck

TOTAL required hours of core coursework in Anatomy: MD/MS = 23

Elective courses:

A minimum of 11 credit hours in elective coursework at the graduate level must be completed. Elective courses can be graduate courses, including research coursework, selected from such areas as anatomy, biological anthropology, biochemistry, biomedical engineering, molecular biology, neurosciences, and, physiology. Other courses must be approved by the academic advisor or the Graduate Executive Committee.

Medical students pursuing the joint MD/MS degrees must complete elective graduate coursework contributing 7 credit hours in addition to the minimum 4 credits of Surgical Anatomy course requirement; additional Surgical Anatomy courses count toward these elective credits.

The thesis-based MS degree (Plan A) requires a minimum of 6 credit hours of ANAT 651 (Thesis: Master of Science) as part of the elective coursework. Research and independent study experiences earned in ANAT 499 (Independent Study) and ANAT 503 (Readings and Discussions) also contribute to the elective requirements.

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Program of Study

The Office of Graduate Studies requires that a proposed course of study be prepared by the student and faculty advisor upon matriculation. The completed Program of Study plan must be submitted (via SIS) for approval to the student's academic advisor as representative of the Graduate Executive Committee. The Program of Study may be amended at anytime until graduation by submitting an amended plan following the same process.

Leave of Absence

Students are expected to pursue their studies according to a systematic plan coordinated through their academic advisor. Students must maintain continuous registration unless a Leave of Absence (LoA) is requested and granted. Failure to register will trigger separation from the program. A 24-month registration lapse requires reapplication to program.

A Leave of Absence must be requested in writing by submitting the LoA request form to the department, and subsequently to the Dean of Graduate Studies, for approval. A LoA is granted only when circumstances prevent continuation of studies. It is not to exceed two consecutive semesters, has a four-semester maximum, and does not extend implicitly the time (5 year) limitation for completion of the degree requirements. During a LoA the student must not utilize university resources, which includes not seeking aid from faculty, taking exams, or defending theses. A LoA may affect an international student's visa status.

Students must be enrolled in order to graduate. [Note: The student (not department) must have submitted the Application to Graduate form.]

Transfer of Credit

The CWRU School of Graduate Studies has established guidelines for giving credit for previous experience and knowledge obtained from formal education programs. Transfer of graduate credit from another university toward the master's degree requirements is limited to six semester hours of graduate-level, biomedical courses taken in excess of degree requirements at that university. No credit for thesis research may be transferred from another university. Transfer of credit is subject to approval by the Graduate Executive Committee and by the Office of Graduate Studies. Transfer of credit cannot be used for the required ASCC courses.

The Graduate School distinguishes between a professional degree and a university degree. Courses taken for a professional degree, such as the MD or D.D.S., do not qualify for credit toward a university degree, such as MS or Ph.D. Biomedical graduate courses taken by professional students that were beyond the requirements for their professional degree can be considered for transfer of credit. Exceptions to these guidelines exist, provided approval is obtained from the Graduate Executive Committee and the Office of Graduate Studies.

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Master of Science Comprehensive Examination

Passing a departmental Comprehensive Examination is required of all Master of Science degree students by the School of Graduate Studies. The Comprehensive Examination (MS Comp Exam) required for the MS in Applied Anatomy degree is a combination of topical written exams followed by an integrative, comprehensive oral exam evaluating the individual student's understanding and ability to apply their knowledge of the ASCC course content. The Graduate Executive Committee of the Department of Anatomy oversees this examination process.

A student becomes eligible to take the MS Comp Exam following successful completion of all the ASCC courses. Successful completion of the required graded courses is defined as a "B or better." It is not required that a student complete all the elective coursework before taking the MS Comp Exam. The Anatomy departmental Comprehensive Examination is administered during the interim period between spring and summer semesters. Application to the Graduate Executive Committee to sit for the examination must be made by students before April 1. The MS Comp Exam is a sequential, step-wise process. A student must achieve the requirements of each step to become eligible for the next:

1. A student must achieve a "B or better" grade in all of the graded ASCC courses in order to be eligible to take the MS Comp Exam.
2. A student must achieve a score of 60% or better on each of the written exams on the four individual ASCC subjects in order to be eligible to take the oral exam. A student will be allowed one retake of any written exam on which he/she does not meet the 60% threshold. A score of 65% or better is required to pass a 'retake' exam; this second exam will include additional questions. A second unsatisfactory performance represents failure of the MS Comp Exam making the student ineligible for the MS in Applied Anatomy degree.
3. After passing all of the written exams, a student must achieve a 'satisfactory' evaluation on the subsequent oral exam to have successfully completed the MS Comp Exam. If a student does not satisfactorily complete the oral exam, the Examination Committee may offer the student a single opportunity to retake the oral exam. A second unsatisfactory performance represents failure of the MS Comp Exam making the student ineligible for the MS in Applied Anatomy degree.

The oral exam is administered by a committee consisting of 4 Applied Anatomy core faculty. The examiners will be appointed by the Graduate Executive Committee and may vary for each student. This examination committee will determine whether a student has successfully completed the departmental MS Comp Exam - passing is required for the MS in Applied Anatomy degree.

Thesis-based (Plan A) MS degree students must complete a thesis defense and must present a thesis seminar. The thesis committee will consist of 3 to 5 faculty members, at least 2 of whom must be primary Anatomy faculty. A minimum of 3 committee members, including the committee chair, must be present for the thesis defense and evaluation.

Students become eligible to graduate upon successful completion of all coursework and thesis requirements, plus the Applied Anatomy Comprehensive Examination. [The School of Graduate Studies requires that a student be registered for at least one credit hour during the semester of graduation. This requirement may be waived for a student who was enrolled in the immediately preceding semester following submission of the approved waiver form.]

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'Academic Probation and Program Separation'

Student must maintain minimum academic requirements and continuous progress to remain in the Applied Anatomy program. The Graduate Executive Committee reviews the academic performance and progress of students after the fall and spring semesters. In situations of academic probation and/or lack of progress, a student may be separated from the program.

Possible bases for separation include:

- Insufficient grade point average (< 3.0 for two semesters);
- Earning a 'C' grade in two ASCC courses;
- Failure to make continuous academic progress;
- Failure to pass the MS Comp Exam.

Application and Admission

Acceptance into the MS in Applied Anatomy program is based on undergraduate and/or graduate transcripts and GPAs, results of comprehensive examinations (GRE, MCAT, or DAT), the student's personal statement of career goals, and letters of recommendation. Acceptance requires a Bachelor degree from an accredited institution. The MS in Applied Anatomy degree can be obtained as a joint degree by qualified individuals participating in other programs at CWRU, such as medical students seeking the MD and MS degrees jointly. All applications must be made through the Department of Anatomy and the School of Graduate Studies (<http://gradstudies.case.edu/prospect/admissions/apply.html>). Students can begin their coursework either in the fall or spring semester.

Medical students can apply to the Department of Anatomy graduate program after beginning medical school. For acceptance into the joint degree program, the medical student must present a letter from their Associate ('Society') Dean of Student Affairs of the School of Medicine that documents his/her good academic standing in the medical curriculum, in addition to submitting the graduate program application. Students accepted into the program can begin their graduate studies in the first or second semester of medical school and complete the MS degree elective requirements (Surgical Anatomy course) during their fourth year.

Advisor

A member of the Graduate Executive Committee of the Department of Anatomy will be assigned as an academic advisor for each incoming student. These faculty members will assist the student in academic matters for the duration of the student's tenure as a MS in Applied Anatomy student.

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GRADUATE EXECUTIVE COMMITTEE DEPARTMENT OF ANATOMY SCHOOL OF MEDICINE

The Graduate Executive Committee (GEC) of the Department of Anatomy is comprised of the Anatomical Sciences Core Curriculum (ASCC) course directors. It is the responsibility of GEC to oversee all academic matters involving graduate students in the department seeking the Master of Science degree. The committee:

- (1) serves as the Admissions Committee for the department and, as such, makes recommendations to the CWRU School of Graduate Studies
- (2) acts as the Curriculum Committee for the Department.
- (3) defines the requirements for earning the MS in Applied Anatomy degree.
- (4) serves as or appoints faculty serving on MS Comprehensive Examination committees.
- (5) should be consulted whenever a question concerning departmental requirements for graduate students arises.
- (6) tracks the academic progress of each student/candidate; in situations of academic probation and/or lack of progress, determines a student's continuance or separation from the Applied Anatomy program.