

MASTER OF SCIENCE DEGREE PROGRAMS IN ANATOMY

Department of Anatomy Case Western Reserve University

M.S. in Anatomy (with thesis/ plan A)
M.S. in Applied Anatomy (without thesis/ plan B)
M.D./M.S. in Applied Anatomy

[Effective August 23, 2006]

Minimum Requirements of the School of Graduate Studies

General: Cumulative grade point average of 2.75; program of study to be completed within five years.

Plan A Master's Degree

27 credit hours of study

18 semester hours of course-work, plus thesis (thesis work equivalent to no fewer than 9 semester hours of registration), or 21 semester hours of course-work, 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

27 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 Master of Science degree in Anatomy **exceed** the requirements of the School of Graduate Studies. **The Department of Anatomy requires 30 credit hours of study and a minimum 3.0 grade point average.** The required courses of the Anatomical Sciences Core Curriculum represent 21 credit hours. A minimum of one Surgical Anatomy course (4 credits) elective is required of medical students seeking the joint M.D./M.S. degree. A thesis-based Master of Science degree (Plan A) requires a minimum of 6 credit hours 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) offered by the Department of Anatomy represent 21 credit hours. The student must earn a grade of **“B or better”** in the gross anatomy, histology, neuroanatomy, and embryology courses. Should a minimum grade of “B” not be achieved, the student may repeat the course once for the option of earning a better grade. (An ASCC course may not be taken more than twice; credits of a repeated course do not contribute to the 30 credit hour minimum although they are included in the GPA calculation.)

Required courses in Anatomy are the following:

Anatomical Sciences Core Curriculum:

ANAT 411	Human Gross Anatomy (6 credits)
ANAT 412, 413	Histology and Ultrastructure/Lab (6 credits)
ANAT 414, 415	Neurological Anatomy/Lab (4 credits)
ANAT 491	Embryology (3 credits)
ANAT 497	Scientific Presentations (1 credit)
ANAT 498	Departmental Seminar (1 credit)

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

TOTAL required hours of coursework in Anatomy = 21

Surgical Anatomy course requirement (4 credits, fourth year) for the **joint M.D./M.S.** degree may be fulfilled by any one of the Surgical Anatomy courses:

ANAT 513	Surgical Anatomy: Thorax & Abdomen
ANAT 515:	Surgical Anatomy: Musculoskeletal & Orthopedics
ANAT 516	Surgical Anatomy: Head & Neck

TOTAL required hours of coursework in Anatomy = 25

Elective courses:

A minimum of 9 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 M.D./M.S. degrees must complete elective graduate coursework contributing 5 credit hours in addition to the minimum 4 credits of Surgical Anatomy course requirement; additional Surgical Anatomy courses count toward these elective credits.

Thesis-based Master of Science degrees (Plan A) requires a minimum of 6 credit hours 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.

Master of Science Degree Programs in Anatomy

Planned 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 Planned Program of Study form must be approved by the Graduate Executive Committee and signed by the student, by the student's advisor, and by the Chairman of the Department of Anatomy, then submitted to the School of Graduate Studies. The Planned Program of Study may be amended at anytime until graduation by submitting a written notification to the Graduate Executive Committee and, upon approval, submitted to the School of Graduate Studies.

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 credit from another university toward the master's degree requirements is limited to six semester hours of graduate-level 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 can not 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 M.D. or D.D.S., do not qualify for credit toward a university degree, such as M.S. or Ph.D. 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.

Master of Science Degree Programs in Anatomy

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-CompExam) required for a Master of Science degree from the department of Anatomy 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-CompExam 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-CompExam. The 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-CompExam 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 the graded ASCC courses in order to be eligible to take the MS-CompExam.
2. A student must achieve a score of 60% or better on each of the written exams on the individual ASCC subjects in order to be eligible to take the oral exam. A student will be allowed one retake of any written exam that he/she does not meet the 60% threshold.
3. After achieving 60% or better on all of the written exams, a student must achieve a 'satisfactory' evaluation on the subsequent oral exam to have successfully completed the MS-CompExam. 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-CompExam.

The oral exam is administered by a committee consisting of 4 primary anatomy 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-CompExam - passing is required for the Master of Science in Applied Anatomy degree.

Thesis-based (Plan A) M.S. 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 Departmental 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.]

Master of Science Degree Programs in Anatomy

Application and Admission

Acceptance into the Master of Science in Applied Anatomy program is based on undergraduate and/or graduate transcripts and GPAs, results of comprehensive examinations (GREs, MCATs, or DAT), and letters of recommendation. Acceptance requires a Bachelor degree from an accredited institution. The Master of Science in Applied Anatomy degree can be obtained as a joint degree by qualified individuals participating in other programs at CWRU, such as the Integrated Graduate Studies (IGS) for undergraduates or medical students seeking the M.D. and M.S. degrees jointly. All applications must be made through the Department of Anatomy and the School of Graduate Studies. Students can begin their coursework either in the fall or spring semester.

Medical students can apply to the Department of Anatomy graduate program during their first semester of medical school. For acceptance into the program, the applicant 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. Students accepted into the program can begin their graduate studies in the first or second semester of medical school and complete the M.S. degree requirements (Surgical Anatomy) during their fourth year.

Advisor

A member of the Graduate Executive Committee of the Department of Anatomy will be assigned as an 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 Master of Science in Applied Anatomy student.

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GRADUATE EXECUTIVE COMMITTEE DEPARTMENT OF ANATOMY SCHOOL OF MEDICINE

It is the responsibility of the Graduate Executive Committee of the Department of Anatomy 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 School of Graduate Studies of C.W.R.U.
- (2) acts as the Curriculum Committee for the Department.
- (3) has developed the requirements for earning the Master of Science degree in Applied Anatomy and has developed the pertinent documents.
- (4) serves as, or appoints, faculty serving on M.S. 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 and is responsible for maintaining departmental records pertaining to each student/candidate.

Graduate Executive Committee Member: 2006-2007

Joseph C. Miller, Ph.D., Chairperson	EG 11	368-1905	jcm18@cwru.edu
Barbara K. Freeman, Ph.D.	EG 04	368-4412	bkf@cwru.edu
John R. Fredieu, Ph.D.	DOB250	368-6012	jrf6@cwru.edu
Charles E. Maier, Ph.D.	EG 13	368-8629	cem17@cwru.edu

Applied Anatomy Program Director: 2006-2007

Joseph C. Miller, Ph.D., Chairperson	EG 11	368-1905	jcm18@cwru.edu
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