

ANATOMY, M.S.

Saint Louis University offers two options for a master's degree in anatomy: thesis and project. Students receive instruction from a diverse team of award-winning clinical anatomists dedicated to teaching and training.

Teaching faculty and mentors are drawn from a select group of scientists and clinicians at the Saint Louis University School of Medicine. The faculty are united by their extensive experience teaching and training young scientists, medical students, and physicians-in-training.

Students also can pursue research projects with dedicated scientific support staff to assist them. Many students present their research at local and national scientific conferences.

Curriculum Overview

Thesis Option: The thesis option provides advanced training in anatomy for individuals interested in teaching fundamental courses in anatomy and serves as an introduction to biomedical research. It is also appropriate for those whose primary interests are in related fields such as medicine or the allied health professions. A total of 30 credits, including six credits of thesis research, are required for graduation.

Project Option: The project option provides training in anatomy with a capstone project and is appropriate for students who want to fulfill a professional aspiration to teach human anatomy structure and function. It is also suitable for students who are undecided about a career in the health professions and want to improve their academic background before applying to professional schools such as medicine, dentistry or allied health professions. A total of 30 credits is necessary to complete the degree.

Fieldwork and Research Opportunities

Graduate students perform research projects by working with a faculty mentor whose research interests match their own. Doctoral students are expected to publish and present a minimum of two research projects.

The SLU's Center for Anatomical Science and Education (<https://www.slu.edu/medicine/medical-education/case/>) faculty are engaged in multidisciplinary research of biological structure and function ranging from ultrastructural to gross anatomical levels, with a significant interest in clinically relevant anatomy and neurobiology. Other research interests include cell biology and pathobiology.

Careers

Possible careers for graduates with a degree in anatomy include medical doctors, allied health professionals, and university professors.

Admission Requirements

Applicants are admitted on a competitive basis and must have a B.S. or B.A. degree from an accredited U.S. college or university with a minimum overall GPA of 3.0 and/or science GPA of 2.8. In addition, applicants must have either a minimum combined MCAT score of 495 or a GRE general test score at the 40th percentile.

Application Requirements

- Application form and fee
- Transcript(s)
- Two letters of recommendation

- GRE G scores (GRE S optional)
- Résumé
- Interview
- Professional goal statement

Requirements for International Students

All admission policies and requirements for domestic students apply to international students. International students must also meet the following additional requirements:

- Demonstrate English Language Proficiency (<https://catalog.slu.edu/previous-catalogs/2022-2023/academic-policies/office-admission/undergraduate/english-language-proficiency/>)
- Financial documents are required to complete an application for admission and be reviewed for admission and merit scholarships.
- Proof of financial support that must include:
 - A letter of financial support from the person(s) or sponsoring agency funding the student's time at Saint Louis University
 - A letter from the sponsor's bank verifying that the funds are available and will be so for the duration of the student's study at the University
- Academic records, in English translation, of students who have undertaken postsecondary studies outside the United States must include:
 - Courses taken and/or lectures attended
 - Practical laboratory work
 - The maximum and minimum grades attainable
 - The grades earned or the results of all end-of-term examinations
 - Any honors or degrees received.

WES and ECE transcripts are accepted.

Application Deadlines

Students should apply by July 1 for fall admission.

Scholarships and Financial Aid

For priority consideration for graduate assistantship, apply by Feb. 1.

For more information, visit the student financial services office online at <https://www.slu.edu/financial-aid/index.php> (<https://www.slu.edu/financial-aid/>).

Learning Outcomes

1. Graduates will be able to demonstrate competency in general knowledge of the core anatomical subjects (human gross anatomy, microscopic anatomy, neuroanatomy, embryology and physiology).
2. Graduates will be able to demonstrate competency:
 - a. in written communication skills with respect to clarity, use of appropriate grammar, syntax and vocabulary to effectively present information including the use of figures, tables and citations.
 - b. in oral communication skills with respect to content, organization, presentation and delivery, use of visual aids, and ability to answer audience questions.
3. Thesis Track
 - a. Graduates will be able to demonstrate competency in the ability to apply common laboratory techniques, analytical approaches, experimental design, data collection, analysis and interpretation, problem-solving skills, and critical evaluation of scientific

literature used to test hypothesis-driven experiments in the anatomical sciences.

- b. Graduates will be able to demonstrate competency in the ability, with oversight, to utilize technical skills and analytical approaches to gather pertinent data identifying a gap in knowledge, devise an experimental approach to research the problem, conduct studies and analyze the resultant data and describe findings in a hypothesis-driven research project.

4. Project Track

- a. Graduates will be able to demonstrate competency in the ability to apply analytical approaches, problem-solving skills, critical evaluation of scientific literature and teaching techniques used in the anatomical sciences.
- b. Graduates will be able to demonstrate competency in the ability, with oversight, to identify gaps of knowledge and formulate, implement and present a scholarly and/or research-based project that results in a tangible product that contributes to and enhances the anatomical sciences.

Requirements

Code	Title	Credits
Required Courses		
ANAT 5000	Human Gross Anatomy	8
ANAT 5100	Human Histology and Ultrastructure	5
ANAT 5200	Human Embryology	2
ANAT 5300	Human Systems Neurobiology	5
ANAT 5400	Human Systems Physiology	4
Project or Thesis Research		
Select one of the following options:		6
<i>Project Option</i>		
ANAT 5960	Master's Project	
ANAT 5500	Advanced Dissections in Human Anatomy	
<i>Thesis Option</i>		
ANAT 5990	Thesis Research (taken over multiple semesters)	
Total Credits		30

Thesis Option

The thesis option provides advanced training in anatomy and is a good option if students are interested in teaching fundamental courses in anatomy or if students are interested in related fields such as medicine or the allied health professions. It also serves as an introduction to biomedical research. A total of 30 credits, including six credits of thesis research, are required for graduation.

The thesis research project generally takes 2-3 academic semesters after the research proposal has been approved. Initially, the student must identify a research project under the guidance of a CASE faculty member.

Qualifying Examination and Defense

An M.S. (thesis) committee will then be formed as the student prepares their research proposal. A three member M.S. (thesis) committee, chaired by the student's primary adviser, will be appointed by the director of the anatomy graduate program. The committee must include at least two members of the CASE anatomy graduate faculty. A third member of the committee can be appointed by the graduate program director if they are graduate faculty in other departments or at another university. It is the decision of the anatomy graduate program director to accept

the adviser's recommendation and to identify the final member of the committee.

Once the proposal has been approved by the M.S. (thesis) committee, it is then submitted to the Office of Graduate Education.

A thesis must be completed and approved by the faculty adviser and M.S. (thesis) committee. The thesis should follow the formatting guidelines issued by the Office of Graduate Education.

Completion of the thesis research project follows: writing of the thesis, application for advancement to candidacy and the thesis defense. It shall be the responsibility of the student to initiate candidacy by filling out a candidacy form through Office of Graduate Education. The completed form must be returned by the deadline stated in the graduate education calendar of deadlines. Once the completed candidacy form has been processed by the Office of Graduate Education, the thesis committee chair will receive a ballot for the oral defense of the thesis. The ballot is distributed to the other committee members by the thesis committee chair when they vote on the oral defense. Once the ballots are completed, signed and sealed, it is the committee chairperson's responsibility to deliver the ballots to the Office of Graduate Education immediately following the defense.

The defense of the thesis provides an opportunity for the student to formally present their findings to their committee, the faculty and students in CASE, and to any family member or anyone from the general public wishing to attend.

Two weeks before the thesis defense, an electronic and print announcement of the date, time, location and title of the defense will be publicized to all members of CASE. A final draft of the student's thesis must be made available in the anatomy conference room for faculty and students to review at least seven working days prior to the defense.

The thesis defense is two parts. First, the student will make an oral, PowerPoint presentation of no longer than 45 minutes duration where they present their research. Following the presentation, questions from the collective audience will be encouraged. Once all questions have been satisfactorily answered by the student, the audience is excused and the closed, or executive, part of the defense takes place with only the student and their committee present. The thesis committee can ask detailed questions and expect the student to demonstrate thorough knowledge of their project and related research. Questions on general topics in anatomy, unrelated to their research, may also be asked. Following all questioning, the student is excused from the room and the committee members, without discussion, complete the defense ballot.

Project Option

The project option is appropriate if students want to teach human anatomy structure and function, or if students are undecided about a career in the health professions and want to improve their academic background before applying to professional schools. It provides training in anatomy with a capstone project. A total of 30 credits is necessary to complete the degree.

Qualifying Examination and Defense

Upon completion of the core curriculum, the student must identify an independent study project under the guidance of a CASE faculty adviser for the required Master's Project (ANAT-5960, 2-4 credits) course.

The Master's Project course is intended to foster students' intellectual development by working independently with a faculty adviser and an M.S. (project) committee. It is hoped that a student will develop the capacity

to plan and execute a project and will acquire competence and critical writing skills.

The M.S. (project) committee will be formed as the student prepares the project proposal. A three member M.S. (project) committee, chaired by the student's primary adviser, will be recommended to the director of the anatomy graduate program for approval. The committee must include at least two members of the CASE anatomy graduate faculty.

The initial responsibility of the M.S. (project) committee is to determine the feasibility of the project and its proposal, and to permit the student to proceed only after such determination has been made. The committee and director of the anatomy graduate program shall sign off on the student's proposal and a copy should be kept in the student's file in the CASE office. The signing of this document signifies that the student has permission to proceed with the study as outlined in the proposal.

The M.S. (project) committee will meet regularly with the student and adviser and is responsible for reviewing the ongoing project and manuscript drafts, and to provide feedback in a timely manner.

A manuscript of the project, in the form of a treatise, must be completed and approved by the faculty adviser and M.S. (project) committee.

The treatise is a critical analysis of the project and is expected to demonstrate mastery of the material using critical thinking skills. The manuscript should follow the formatting guidelines issued by the Office of Graduate Education.

As the project and manuscript near their completion, a tentative date to complete the oral examination will be scheduled, no less than two weeks in advance, by the faculty adviser and approved by the M.S. (project) committee. The last day to complete the final oral examination will be identified by the graduate education calendar of deadlines and will be strictly enforced.

Before the oral examination is officially scheduled to take place, the student's Master's Project course project must be completed and approved by the student's faculty advisor and M.S. (project) committee.

Two weeks before the thesis defense, an electronic and print announcement of the date, time, location and title of the defense will be publicized to all members of CASE. A final draft of the student's thesis must be made available in the anatomy conference room for faculty and students to review at least seven working days prior to the defense.

The oral examination will consist of a formal presentation of the student project to the M.S. (project) committee, the faculty and students in CASE, and to any family member or anyone from the general public wishing to attend. After the presentation, the committee will meet with the student privately to ask any questions relating to the project and manuscript, and of the student's knowledge of anatomy. After the private meeting, the student will be asked to leave the room as the committee votes on the oral examination performance by filling out the ballot issued by the Office of Graduate Education. Once the ballot is completed, signed and sealed it is the committee chairperson's responsibility to deliver the ballot to the Office of Graduate Education immediately following the oral examination.

Continuation Standards

Students must maintain a cumulative grade point average (GPA) of 3.00 in all graduate/professional courses.