

ANATOMICAL SCIENCES AND NEUROBIOLOGY (MS)

Master of Science in Anatomical Science and Neurobiology

Unit: School of Medicine (<http://louisville.edu/medicine>) (GM)

Department: Anatomical Science and Neurobiology (<http://louisville.edu/medicine/departments/anatomy>)

Program Webpage (<https://louisville.edu/medicine/departments/anatomy/graduateprograms>)

Academic Plan Code(s): ASNBMS

Program Information

Thesis Option

The thesis MS program is available to qualified individuals possessing a bachelor's degree from an accredited college or university. No specific undergraduate major is required, although some science background is required.

The thesis MS degree is offered to students who want to continue their education in Anatomy and Neurobiology and offers the student the opportunity to improve his/her background for career development, such as for higher education programs such as a PhD program, Dental or Medical School.

Non-thesis Option

A terminal non-thesis Master of Science Degree in the Department of Anatomical Sciences and Neurobiology provides students with comprehensive training and teaching experience in Anatomy and Neurobiology. This program is designed to prepare students for a variety of career options. For example, students may complete this program to prepare for further professional training, or to qualify for teaching positions. Students in the Human Anatomy and Neurobiology Degree (H.A.N.D.) option will complete part of the first year medical and/or dental school curriculum offered at the University of Louisville. They will also participate as a teaching assistant (TA) in two of these classes. The program can be completed in three or four semesters. Acceptance into the ASNB master's thesis program does not guarantee a spot in the non-thesis H.A.N.D. program track.

To be eligible to participate in the H.A.N.D. program and become a TA, students must earn a grade of B or better when taking the class the previous year. Entry into the H.A.N.D. program is competitive due to limited availability of open TA positions. While in the H.A.N.D. program, students must maintain a B average. At the end of the final semester in the H.A.N.D. program, each student must give a seminar presentation to the department regarding some aspect of their teaching experience (topic to be determined in consultation with the H.A.N.D. program student advisor). Following completion of the program, if students are admitted to the University of Louisville Medical or Dental School, they may be eligible to substitute electives for the first-year classes in which they served as a teaching assistant while in the H.A.N.D. program.

All degree programs require full-time study and it is expected that while participating in these programs, students will devote full-time effort toward completion of the degree requirements.

Admission Requirements

All students who wish to apply must submit an application to the Graduate School, Graduate Admissions with the following documents:

1. A formal application (<http://louisville.edu/graduate/apply>) submitted to the Graduate School.
2. Application fee.
3. A minimum of two letters of recommendation.
4. Official transcripts of all college work.
5. Official scores on the Graduate Record Examination (GRE) General Test and/or MCAT.
6. A brief statement of purpose describing your interests and career goals.
7. All international applicants whose native language is not English must submit Test of English as a Foreign Language (TOEFL) scores. Students holding a bachelor's or advanced degree from an accredited institution in the United States are exempt from this requirement.

Program candidates are only admitted in the fall semester (orientation begins the first Monday in August). Review of applications begins mid-January and continues until all positions are filled. Admission into the program is competitive, and applicants are encouraged to submit their applications early.

Program Requirements

Requirements for the Thesis MS Degree

Students should familiarize themselves with the general requirements for the master's degree as stated in the current University of Louisville Graduate Catalog. Briefly, a minimum of 30 credit hours is required for the master's degree, of which 15 credit hours must be in courses of the major subject area.

At least one-half of the credits counted toward the degree must be 600-level courses or above. This does not include research credit hours. The department imposes the following additional requirements:

| Code | Title | Hours |
|--|--|--------------------------------------|
| Coursework | | |
| Students will successfully complete at least two of the following courses within the department: | | varies depending on courses selected |
| ASNB 601 | Gross Anatomy | |
| ASNB 602 | Fundamentals of Neuroscience | |
| ASNB 605 | Human Embryology | |
| ASNB 617 | Seminar on Developmental Neurobiology ¹ | |
| ASNB 614 | Molecular Neuroscience ¹ | |
| ASNB 666 | Synaptic Organization of the Central Nervous System ¹ | |
| ASNB 672 | Survey of Dental Gross and Neuroanatomy | |
| ASNB 671 | General and Oral Histology | |
| ASNB 606 | Anatomy Seminar (taken each semester prior to candidacy) | 1/ semester |
| Electives (see notes below) | | varies |
| Minimum Total Hours | | 30 |

¹ Offered on a rotational basis

Seminar

Anatomy Seminar (ASNB 606, 1 credit hr) must be taken for credit each semester prior to candidacy.

Electives

Additional courses (electives) within ASNB or graduate level courses in other departments may be taken to achieve the minimum requirement of 30 credit hours. The student should consult with his/her advisor on the selection of the appropriate electives.

Research Hours

Research credit hours may be taken as Laboratory Rotation (ASNB 618), which is graded on a pass/fail basis, prior to choosing a mentor. Once a mentor is chosen, research hours are taken as Original Investigation (ASNB 619), in which students earn a letter grade.

Candidacy

After completion of all requirements (as outlined above), students enter Master's Candidacy and must register for and maintain candidacy (MAST 600) until the successful defense of his/her thesis. This registration must be maintained year round (fall, spring and summer semesters) until the degree is awarded. Once a student registers for MAST 600, he/she may not register for additional courses. The statute of limitation for obtaining a Master's degree is six years from the beginning of the program of study.

Original Research

Students will conduct this required research under the direction of a member or joint/associate member of the departmental faculty (hereafter known as the thesis advisor). Faculty reserve the right to decline accepting a student.

During the first year of enrollment, students are required to visit the laboratories of potential advisors to become acquainted with the faculty and the research opportunities available. Selection of an advisor and the initiation of a research project should be concluded prior to the end of the first year, at which time a written agreement, signed by both the student and thesis advisor, will be filed with the Graduate Program Director.

Thesis

A thesis master of science degree requires more than the completion of a prescribed curriculum of course work, a written thesis based on original research, and a successful oral defense. By its nature, original research does not always achieve positive results within a specific period of time. Therefore, no specific time can be given for the successful completion of this degree. Note that students are advised to complete the majority of their course work in the first year so that adequate time is allotted in the second year to complete their research and thesis. Specifically, students will be required to engage full-time in research for the equivalent of two academic semesters and maintain steady and satisfactory progress. Faculty advisors submit Graduate Student Progress Reports biannually to the ASNB Graduate Program Committee for review.

Reading Committee

The composition requirements of, and specific deadlines related to, the Reading Committee appear in the Graduate Catalog. Briefly, the Reading Committee is composed of the student's advisor and two other faculty, one of which is from a different department. All three must be members of the graduate faculty. This committee should be established shortly

after the student and her/his advisor agree on a specific research project. To avoid unnecessary delays the student should regularly consult with her/his thesis advisor and committee members concerning the direction and progress of the research project. Once in Master's candidacy, the student should meet with their committee at least once per semester.

Thesis Defense

The MS candidate will focus exclusively on completing their research projects and writing a thesis describing the results of their experiments. It is expected that the thesis should contain data sufficient for approximately one publishable manuscript. Upon completion of the thesis, the student will distribute a copy to each committee member. The committee will have two weeks to read the thesis and give approval to schedule a defense date or recommend changes that must be completed prior to scheduling a defense date. Once the thesis is approved by the committee, the student will schedule a thesis defense. The Graduate School requires that an announcement of the defense be posted at least two weeks prior to the scheduled date. The defense will consist of an oral presentation (approximately 30 minutes in length) of the research completed during the student's graduate training. Non-committee members in the audience will then ask questions. The general audience will then be dismissed and the student will defend his/her thesis before the committee. Completion of the MS degree will be determined by majority vote of the committee.