

# OPHTHALMOLOGY, VISUAL AND ANATOMICAL SCIENCES (M.S.)

## Admission Requirements

Admission is contingent upon admission to the Graduate School (<https://bulletins.wayne.edu/graduate/general-information/admission/>) and the graduate programs of the School of Medicine (<https://bulletins.wayne.edu/graduate/school-medicine/programs/>), respectively. Applicants must have an undergraduate degree. A minimum grade point average of 3.0 is required for admission to the M.S. program. An interview with the Graduate Committee Chairperson or designated representative is desirable. The Graduate Record Examination is required for admission. Foreign students must be proficient in English as determined by satisfactory performance on the standardized TOEFL English proficiency examination.

## M.S. Program

The Master of Science in Anatomy and Cell Biology requires a minimum of 32 credits. The program is designed to be a rigorous two-year program, with a comprehensive scholarly emphasis. After completion, the overall experience, knowledge, and skills gained during the program will allow students to apply their newly acquired abilities across a broad range of research and educational settings, as well as support those interested in continuing in a Ph.D. program or health professional school. For those interested in continuing in an M.D. program, the M.S. program has a linkage agreement with WSU School of Medicine that guarantees a medical school interview for those that complete the program with high performance levels (M.S. linkage agreement information)

Students select one of two available tracks of study: either the Research Track or the Education Track. The first year is focused on coursework and the second year emphasizes hands-on development in research or teaching. A written thesis is required for both tracks. All course work must be completed in accordance with the regulations of the Graduate School (<https://bulletins.wayne.edu/graduate/general-information/academic-regulations/>) and the School of Medicine (<https://bulletins.wayne.edu/graduate/school-medicine/programs/>) governing graduate scholarship and degrees.

All M.S. students are required to participate in the seminar series each semester. M.S. students in the research track are required to take Essential Research Practices regardless of program focus (Visual Sciences or Neuroscience). All students are required to submit a Plan of Work (POW) that is provided by the Office of Graduate Programs at the School of Medicine, within six months of entering the program.

## Research

The Research Track offers specialization in either Neuroscience or the Visual Sciences. Students are provided the opportunity to learn state-of-the-art techniques related to preclinical and clinical research.

Code	Title	Credits
<b>Fall Semester - Year 1</b>		
MGG 7010	Molecular Biology and Genetics	4
ANA 7270	Special Projects in Anatomy	2-3
ANA 7890	Seminar	1
Select one of the following:		
ANA 7055	Biology of the Eye	
ANA 7030	Human Microscopic Anatomy	

ANA 7130	Neuroanatomy	
<b>Winter Semester - Year 1</b>		
ANA 7890	Seminar	1
ANA 7996	Research	1-15
Select one of the following:		
ANA 7065	Mechanisms of Ocular Disease I (required for Vision subdiscipline)	
ANA 7130	Neuroanatomy (required for Neuroscience subdiscipline)	

<b>Fall Semester - Year 2</b>		
GS 0900	Essential Research Practices: Responsible Conduct of Research	0
ANA 8999	Master's Thesis Research and Direction	1-8
ANA 7890	Seminar	1
Optional:		
FPH 7015	Biostatistics I	
ANA 7075	Mechanisms of Ocular Disease II (required for Vision subdiscipline)	

<b>Winter Semester - Year 2</b>		
ANA 8999	Master's Thesis Research and Direction	1-8
ANA 7890	Seminar	1
Optional:		
PYC 7150	Fundamentals of Neuropsychiatric Disorders	

\* Students interested in the Neuroscience subdiscipline should take at least 2 of the 3 following core courses: ANA 7010, ANA 7030, ANA 7130.

+ Students interested in the Vision Sciences subdiscipline should take the following core courses to enhance their training experience: ANA 7055, ANA 7065, ANA 7075.

## Education

The Education Track provides the opportunity to learn and teach Gross Anatomy, Microanatomy (Histology), Embryology, and Neuroanatomy. Students will participate in both virtual microscopy and human cadaveric dissection, ultimately acquiring expertise and marketable skills in teaching related courses.

Code	Title	Credits
<b>Fall Semester - Year 1</b>		
ANA 7010	Human Gross Anatomy	8
ANA 7030	Human Microscopic Anatomy	4
ANA 7890	Seminar	1
<b>Winter Semester - Year 1</b>		
ANA 7130	Neuroanatomy	4
ANA 7260	Special Dissection	4
ANA 7890	Seminar	1
<b>Spring/Summer Semester - Year 1</b>		
ANA 7260	Special Dissection	2
<b>Fall Semester - Year 2</b>		
GS 0900	Essential Research Practices: Responsible Conduct of Research	0
ANA 7270	Special Projects in Anatomy	4
ANA 7890	Seminar	1
ANA 8999	Master's Thesis Research and Direction	2-4
<b>Winter Semester - Year 2</b>		
ANA 7270	Special Projects in Anatomy	2

ANA 7890	Seminar	1
ANA 8999	Master's Thesis Research and Direction	2-4