HUMAN ANATOMY AND CELL SCIENCE, PH.D.

Degree Requirements

Students are required to take Biomedical Trainee Skills (IMED 7410) plus a minimum of 9 credit hours of approved coursework at the 7000 level. Students must then complete a thesis.

Mandatory attendance at seminars that are part of the Departmental Seminar Program is required.

Expected Time to Graduate: 4-5 years

Progression Chart

Course	Title	Hours
Year 1		
GRAD 7300	Research Integrity Tutorial	0
GRAD 7500	Academic Integrity Tutorial	0
IMED 7410	Biomedical Trainee Skills	3
ANAT/IMED 7XXX	Approved coursework designated 7000 level including at least one 3 CH course from the Core ANAT list below [1]	9
	Hours	**12**
Years 2-3		
GRAD 8010	Doctoral Candidacy Examination	0
Thesis Proposal [2]		
	Hours	**0**
Years 3-4		
GRAD 8000	Doctoral Thesis [3]	0
	Hours	**0**
	Total Hours	**12**

1. The coursework required for an individual student will be specified in consultation with the student's faculty advisor, and will depend upon the student's background.
2. The thesis proposal should be completed within two years of entering the program.
3. Prior to submission of their thesis for examination, the student normally will be expected to have presented their research at scientific meetings; and, contributed to a manuscript that is submitted, in press, or published.

Approved Coursework

Course	Title	Hours
Core ANAT Courses		
ANAT 7380	Human Developmental Anatomy (Embryology)	3
ANAT 7392	Human Neuroanatomy	3
ANAT 7468	Human Histology: Basic Tissues and Organ Systems	3
ANAT 7478	Human Gross Anatomy: Musculoskeletal	3
ANAT 7480	Human Gross Anatomy: Trunk (Thorax, Abdomen, Pelvis)	3
ANAT 7482	Human Gross Anatomy: Head and Neck	3
ANAT 7400	Morphological Techniques	3
ANAT 7460		1.5

ANAT / IMED Electives [1]		
ANAT 7012	Advanced Brain Imaging Methods	1.5
ANAT 7014	Functional Human Anatomy	2
ANAT 7320	Introduction to Scanning and Transmission Electron Microscopy	3
IMED 7004	Human Brain Imaging Methods	1.5
IMED 7112	Fundamental Cellular Neurobiology	1.5
IMED 7114	Fundamental Neural Development and Plasticity	1.5
IMED 7302	Advanced Molecular Imaging	3
ANAT 7330	Readings in Anatomy	3

1. Additional elective coursework at the 7000 level may be completed through other U of M departments/faculties, or include any of the listed ANAT / IMED elective courses taught by HACS faculty.