MASTER OF SCIENCE IN ANATOMY: THESIS TRACK

The Master of Science in Anatomy (MSA) program offers two distinct tracks: the the Non-Thesis Track and the Thesis Track. Both tracks provide advanced training in anatomy and are designed to prepare students for future graduate/medical school studies or a professional career in academic teaching or in basic science research. Both tracks leading to the MSA degree are designed to be completed in 24 months on a full time basis, but can take longer to be completed on a part-time basis. The distinctiveness of these tracks is detailed below. Details for the Thesis-track are presented here. Please choose the Non-Thesis Track tab (left menu) to learn more about that program.

The Master of Science in Anatomy (MSA) Thesis Track is designed to prepare students for a research-based career in comparative and evolutionary anatomy. Coursework for the thesis track is focused on training in anatomical sciences, scientific writing, researching scientific topics, and becoming proficient scholars in their respective fields. This track is specifically geared toward individuals wanting to matriculate into PhD programs, such as those related to paleontology, biological anthropology, or evolutionary biology. This track is not offered as a dual degree program for current DO/DPM students. It is recommended that individuals wanting to pursue clinical or anatomical education degrees consider the Non-Thesis Track and individuals interested in pursuing other doctoral degrees or a career in basic science research consider the Thesis Track.

MISSION

To educate highly competent students for professional careers in teaching the anatomic sciences, in conducting interdisciplinary research in anatomy and in advancing knowledge of human health, evolution and global diversity.

VISION

The Anatomy Graduate Program aims to mentor future educators and researchers in advancing and disseminating knowledge that enhances our understanding of the anatomical sciences as they pertain to the global community.

PROGRAM REQUIREMENTS

To be considered for admission, applicants to either track must have a Bachelor's degree from a regionally accredited college or university from within the United States prior to the start of orientation. Previous research and teaching experience is desirable, but not required for either track. Required courses must be completed before registration. The minimum grades recommended for application are a 2.8 cumulative GPA and a 2.8 science GPA on a 4.0 scale, and at least a "C" in each of the following prerequisite areas.

PREREQUISITES

Students applying to the Thesis Track program must have a strong background in science, with experience in evolution, biology, paleontology, and/or biological anthropology. Specific preferred courses largely depend on the faculty mentor the applicant wants to work with and the mentor's research program, but courses could include evolutionary biology, genetics, human osteology, comparative anatomy, chemistry, physics, sedimentary geology, statistics, etc. Contact the specific faculty member you are interested in working with for specific details.

Other admission requirements:

- Bachelor's degree from a regionally accredited college or university
- *Optional:* Official GRE, MCAT or DAT scores
- Three letters of recommendation
- Transcripts of all universities and colleges attended

PROGRAM APPLICATION PROCESS

Detailed information regarding the process for applying to either track can be found on the MSA Program Admissions website. An overview is provided here. For either track, competitive candidates for admission will be invited for a formal interview. A student may request transfer credit for previous graduate work completed at other regionally accredited educational institutions from within the United States. The request should be submitted in writing to the Program Director who will forward it to the faculty. Approved transfer credits will be entered on the student's permanent record by the Office of the Registrar. No more than 10.0 hours of approved graduate work will be applied toward the total credits hours required for the degree.

Applicants are highly encouraged to contact the specific faculty member they are interested in working with prior to applying. Applications to the Master of Science in Anatomy Thesis Track program are only accepted through the DMU website. Applicants are expected to demonstrate a superior ability in fields related to anatomy, including paleontology, biological anthropology, and/or other biological sciences, depending on their research trajectory. In addition, three letters of recommendation are required to complete the file prior to review by the Admission Committee.

CURRICULUM OVERVIEW AND OUTLINE

Each track in the Master of Science in Anatomy is a 42.5 credit hour program of study. However, the specific courses will differ between tracks. The curriculum is designed to immerse students in the discipline of anatomy while honing their teaching and presentation skills. Through the courses, teaching hours, individual journaling, laboratory work, and research, students will develop a deep knowledge of anatomy and an exceptional ability to share that knowledge.

In the Thesis Track, the student must successfully complete 23 credit hours of required coursework, 12-13 credit hours of Anatomy Research, and 7.5 credit hours of Anatomy Thesis Work. This curriculum is designed to immerse students in independent study of evolutionary and comparative anatomy, while honing their research and presentation skills.

PROGRAM OBJECTIVES

Five program objectives guide teaching, learning and assessment within the MSA educational program. These objectives emanate from (and link back to) the DMU Learning Goals. Graduates of the program are expected:

1. To demonstrate mastery of the anatomic sciences including anatomic imaging

2. To effectively teach and communicate in the field of anatomy

3. To demonstrate professional attributes

4. To demonstrate critical thinking skills

5. To demonstrate knowledge in their chosen research field of expertise. (Thesis Track specific)

CONTINUOUS QUALITY IMPROVEMENT

The MSA program is committed to delivering high-quality academic programming to ensure the academic and professional success of its students. Assessment and evaluation are crucial steps in the educational process that are carefully aligned with student learning objectives and instructional activities. Formative and summative assessment methods vary in format. Student assessment results are incorporated into the COM planning process on a regular basis to support continual improvement in programs and services to students.

TECHNICAL STANDARDS FOR ADMISSION, ACADEMIC PROMOTION AND GRADUATION

The purpose of this document is to specify the technical standards the University deems necessary for a student to matriculate, remain in good standing and ultimately achieve all the competencies necessary for graduation within their program. The University, therefore, requires candidates to confirm their ability to comply with these standards, with or without accommodation, as a condition of admission and on an annual basis thereafter.

Fulfilment of the technical standards for graduation does not guarantee that a graduate will be able to fulfill the technical requirements of any specific residency program or employment setting.

A candidate seeking a MSA or MSBS degree at Des Moines University must be capable of completing core educational requirements and achieving the competencies in the basic and applied sciences. DMU seeks to develop candidates who have a deep and robust medical knowledge base, with the ability to appropriately apply it, effectively interpret information, and contribute to decisions across a broad spectrum of laboratory situations in all settings. The critical skills required to be successful are outlined below, and include the ability to observe, communicate, perform motor functions, as well as to understand, integrate core knowledge and skills, and to behave appropriately in varied educational and professional situations.

Reasonable accommodations may be required by otherwise qualified individual candidates to meet the technical standards specified below. Requests for University-provided accommodations will be granted if the requests are reasonable, do not cause a fundamental alteration of the medical education program, do not cause an undue hardship, are consistent with the standards of the profession, and are recommended by the Accommodations and Educational Support Specialist.

1. Observation: Candidates and students must be able to acquire required information and timely interpret demonstrations, experiments, and laboratory exercises in the basic sciences.
2. Communication: Candidates and students must be able to demonstrate proficiency in the English language such that they can communicate effectively in oral and written form with all members of the classroom and laboratory team. Candidates and students must be able to communicate with peers and advisors in order to elicit and share information. They must have the capacity for comfortable verbal and non-verbal communication and interpersonal skills to enable effective collaboration within a multidisciplinary team. In any case where a candidate's ability to communicate is compromised, the candidate must demonstrate alternative means and/or abilities to communicate with teams.
3. Motor and Sensory: Candidates and students must have sufficient motor and tactile function to execute movements reasonably required to perform basic laboratory tests. Such actions may require coordination of both gross and fine muscular movements, equilibrium, and functional use of the senses of touch. In any case where a candidate's ability to complete and interpret laboratory findings using motor skills is compromised, the candidate must demonstrate alternative means and/or abilities to retrieve these physical findings.
4. Strength and Mobility: Candidates and students must demonstrate strength, including lower extremity and body strength, and mobility to complete laboratory dissections or experiments.
5. Intellectual, Conceptual, Integrative, and Quantitative Abilities: Candidates and students must have the ability to accurately measure, calculate, reason, analyze, synthesize, problem solve, and think critically. They must also have the ability to participate and learn through a variety of modalities including, but not limited to, classroom instruction, small groups, team and collaborative activities. In addition, candidates and students should be able to comprehend three-dimensional relationships and understand the spatial relationships of structures. Candidates and students must be able to concentrate, timely analyze and interpret data and make decisions within areas in which there is a reasonable amount of visual and auditory distraction.
6. Behavioral Attributes, Social Skills, and Professional Expectation: Candidates and students must be able to effectively utilize their intellectual abilities, exercise good judgment, timely complete all responsibilities attendant to the diagnosis and care of patients, and develop mature, sensitive, and effective relationships with patients and colleagues. Candidates and students must be able to professionally manage heavy workloads, prioritize conflicting demands, and function effectively under stress. They must be able to adapt to changing environments; to display flexibility, to learn to function in the face of their own possible biases and uncertainties inherent in the process of research, and to not engage in substance abuse. Candidates and students must be able to understand and determine the impact of the social determinants of health and other systemic issues which impact the care for all individuals in a respectful and effective manner regardless of known or perceived race, color, national origin, ethnicity, creed, religion, age, disability, sex, gender, gender identity, sexual orientation, or any other protected status. Professionalism, compassion, integrity, concern for others, interpersonal skills, interest and motivation are all qualities that are required throughout the educational process.

REASONABLE ACCOMMODATIONS

Des Moines University welcomes qualified candidates and students with disabilities who meet the technical standards of the program, with or without reasonable accommodations. Students with a disability who may need accommodations during their educational career at DMU will be asked to reaffirm their need for accommodations when acknowledging the ability to meet technical standards annually. The student is responsible for requesting accommodations through the Accommodations and Educational Support Specialist in Academic Support within the Center for Educational Enhancement. Please reach out in person, by email (accommodations@dmu.edu), or by calling Academic Support at 515-271-1516. The Accommodations and Educational

Support Specialist reviews all requests for accommodations through an individualized, interactive process.

The use of an intermediary may be a reasonable accommodation while performing some non-essential physical maneuvers or non-technical data gathering. However, an intermediary cannot substitute for the candidates' or student's interpretation and judgement. Intermediaries may not perform essential skills on behalf of the candidate or student, nor can they replace technical skills related to selection and observation.

PROCESS FOR ASSESSING COMPLIANCE WITH THE TECHNICAL STANDARDS

Candidates are required to attest at the time they accept an offer to matriculate that they meet the applicable technical standards, with or without reasonable accommodation, and annually confirm they continue to meet these standards. These standards are not intended to deter any candidate or student who might be able to complete the requirements of the curriculum with reasonable accommodations.

The University will provide reasonable accommodations as may be required by the Americans with Disabilities Act or the Iowa Civil Rights Act

A student whose behavior or performance raises questions concerning his or her ability to fulfill these technical standards may be required to obtain evaluation or testing by a health care provider designated by the University, and to provide the results to the Center for Educational Enhancement to be considered as part of the interactive process to determine possible reasonable accommodations.

Technological compensation can be made with respect to certain technical standards, but candidates and students should be able to perform these standards in a reasonably independent manner.

PHYSICAL HEALTH

In addition to the technical standards set forth, candidates and students must possess the general physical health necessary for performing the duties of a student in the health sciences and a health professional in training without endangering the lives of patients and/or colleagues with whom they might have contact.

REQUIRED COURSEs

Code	Title	Credit Hours
MSA 1A01	Anatomy I	6
MSA 1B02	Anatomy II	4.5
MSA 1A08	Introduction to Anatomy Research	2
MBS 1B03	Responsible Conduct Biomedical Research	1
MBS 1B14	Research Compliance & Laboratory Safety	0.5
MSA 2A16	Musculoskeletal Cell & Tissue Biology	2
MSA 2A17	Special Topics in Evolutionary Anatomy	1
MPH 650	Basic Statistics	3
MSA 2A01	Sem I: Professional Development	1
MSA 2A02	Sem II: Anat & Educational Research	1
MSA 1A10	Anatomy Thesis	7.5
MSA 1A11	Anatomy Research *Students who complete 12.0 credits of Anatomy Research must complete an approved 1.0 credit hour elective; e.g. Forensic Osteology	12-13

Total Credits Required: 42.5

The University awards the degree of Master of Science in Anatomy (MS) upon recommendation of the faculty. The Academic Progress Committee reports annually to the college faculty the names of students that have met requirements for the master's degree.

To graduate, a student must:

- Exhibit high standards of professional behavior and receive the graduate faculty's recommendation for graduation.
- Pass all required and elective courses and attain a final cumulative GPA of 3.0 or greater.
- Satisfactorily discharge all financial obligations to the University.
- **Thesis Track:** Attain a cumulative GPA of 3.00 or greater in the program and satisfactorily pass the oral-defense and written thesis.

Complete all graduation requirements, including the graduation clearance process and a petition to graduate form. The petition to graduate form can be found on the website.