

# DOCTOR OF ANATOMICAL SCIENCES (DAS)

## **DAS 6000 Doctoral Research (4 credits, max 12)**

Students will engage in a faculty-mentored research project related to instruction, such as an educational intervention, or a project in the area of anatomical sciences thereby giving additional context to their training and career as an educator in health care professions programs. Typically Offered: Fall, Spring and Summer.

**Prereqs:** Students must be enrolled in the DAS program.

## **DAS 6001 Embryology for Anatomy Teachers (4 credits)**

This class will cover the structural development of the human embryo and fetus, mainly by organ systems. Its goal is to prepare anatomy instructors so they can present this material in gross anatomy in medical schools or in anatomy or anatomy and physiology courses for undergraduate students in health programs such as nursing, physical therapy, and pharmacy. Along with normal human development, the course will cover abnormalities of development, so the students are equipped to teach birth defects. Typically Offered: Summer.

**Prereqs:** Students must be enrolled in the DAS program or have special permission from the course director.

## **DAS 6002 Introduction to Medical Imaging (2 credits)**

Students will be introduced to the fundamental principles of each of the major imaging technologies currently used in the field of medicine and how these technologies complement each other. Students will also hone their skill in interpreting anatomy using different imaging modalities, and the coursework will equip anatomy instructors with the requisite knowledge to utilize medical imaging in the coursework of medical schools or other health sciences training programs. This course will build upon the anatomy and imaging content provided in previous coursework through interactive case studies, lectures, quizzes, and anatomy imaging sessions. Typically Offered: Summer.

**Prereqs:** Students must be enrolled in the DAS program or have special permission from the course director.

## **DAS 6003 Philosophical Underpinnings of Medical Education (4 credits)**

Students will grapple with the philosophical foundations of education, including essential topics such as the nature of knowledge, the purposes and goals of medical education, and the social, political, and ethical considerations inherent in healthcare practice and teaching. Moreover, this course challenges participants to become reflective medical educators capable of developing and articulating their own philosophy of education. Typically Offered: Fall.

**Prereqs:** Students must be enrolled in the DAS program or have permission from the course director.

## **DAS 6004 Advanced Gross Anatomy I for Teachers (8 credits)**

This is the first of two graduate courses that will cover the gross anatomy of the human body in depth, using human cadavers. Its goal is to prepare the students to become professional anatomy instructors who can teach this material in gross anatomy courses in medical, dental, or physical therapy schools. Additionally, they will be able to teach anatomy or anatomy and physiology courses for undergraduate students in health programs such as nursing, pre-med, pre-dentistry, pre-physical therapy, exercise science, and pharmacy programs. Typically Offered: Summer.

**Prereqs:** Students must be enrolled in the DAS program or have permission from the course director. While undergraduate gross anatomy and/or anatomy and physiology are not prerequisites, having some exposure to these subjects will be advantageous.

## **DAS 6005 Histology for Anatomy Teachers (4 credits)**

This is an online class that will cover the microscopic anatomy (histology) of the mammalian and human body. Histology covers the body's cells and subcellular structures, its tissues, and the microscopic structure of its organs. The goal of this course is to prepare anatomy teachers to present this material in histology courses in medical schools or in anatomy or anatomy and physiology courses for undergraduate students in health programs such as nursing, pre-physical therapy, and pre-pharmacy. Typically Offered: Fall.

**Prereqs:** Students must be enrolled in the DAS program or have permission from the course director. While undergraduate anatomy and physiology are not prerequisite, having some exposure to these subjects will be advantageous.

## **DAS 6007 Advanced Gross Anatomy II for Teachers (8 credits)**

This is the second of two graduate courses that will cover the gross anatomy of the human body in depth, using human cadavers. It will directly follow Advanced Anatomy I in each summer session. The goal of these courses is to prepare the students to become professional anatomy instructors who can teach this material in gross anatomy courses in medical, dental, or physical therapy schools. Additionally, they will be able to teach anatomy or anatomy and physiology courses for undergraduate students in health programs such as nursing, pre-med, pre-dentistry, pre-physical therapy, exercise science, and pharmacy programs. Typically Offered: Summer.

**Prereqs:** Students must be enrolled in the DAS program or have permission from the course director.

## **DAS 6009 Practice in the Allied Health Professions (1 credit)**

Through a blend of lectures, discussions, case studies, and collaborative projects, this seminar fosters a interdisciplinary perspectives on contemporary allied health practice for various professions (e. g. , RN, CRNA, MD/DO, PA, NP, etc. ) within the American medical system. Typically Offered: Fall, Spring and Summer.

**Prereqs:** Students must be enrolled in the DAS program.

## **DAS 6010 Curriculum Development in Medical Education (3 credits)**

This course immerses students in the foundational principles of curriculum development tailored specifically for allied health professional training programs. Furthermore, students will be exposed to multiple curriculum development frameworks, equipping them with a versatile toolkit for shaping future curricula that remain responsive to evolving industry standards and educational needs. Typically Offered: Summer.

**Prereqs:** Must be enrolled in the DAS program.

## **DAS 6011 Measurement and Evaluation in Medical Education (2 credits)**

This course is designed to survey principles of measurement and evaluation within the context of medical education. Students will delve into the foundations of assessment theories and methods of designing and implementing assessment tools for students in the allied health professions. Topics will encompass formative and summative student assessments, including written exams, question design, clinical evaluations, and other assessment methods such as simulation and portfolio assessment. Course assessments soliciting feedback from students will also be discussed. Typically Offered: Fall.

**Prereqs:** Students must be enrolled in the DAS program.

## **DAS 6012 Medical Neuroanatomy for Anatomy Teachers (4 credits)**

This is an online course that will cover topics in neuroanatomy. Topics include functional organization of the human nervous system, neurophysiology, supporting structures, and clinical relevance of these topics for health care practitioners. Typically Offered: Fall.

**Prereqs:** Students must be enrolled in the DAS program or have permission from the course director.

**DAS 6013 Research Methods (3 credits)**

Interpretation of research design, data analysis, bias source, and clinical epidemiology, including evaluation and application of diagnostic tests, natural history of disease, and quantitative aids for clinical decision making. A theme of community health and disease is followed throughout the course, including assessment of disease risk and mechanisms of epidemic detection, spread, and control. Typically Offered: Spring.

**Prereqs:** Must be enrolled in the DAS program

**DAS 6018 Principles of Online Course Design in Anatomical Sciences (3 credits)**

This course explores the skills and knowledge necessary to craft engaging, accessible, and effective online learning environments tailored to the needs of allied health professional students. Participants will dive into key concepts, including learner-centered design, accessibility and inclusivity considerations, multimedia integration, and assessment methods for online contexts. This course will integrate concepts from previous courses. Here, we will focus on translating these concepts and optimizing them for remote learning, asynchronous contexts, and medical professions students. Typically Offered: Summer.

**Prereqs:** DAS 6011, DAS 6010, and must be enrolled in the DAS program.

**DAS 6021 Cell Physiology (4 credits)**

This course is a comprehensive study of underlying concepts common to the major cell physiology processes of the body. The course is designed for those seeking a solid grounding in cell biology and physiology. The course focuses on basic physiology of the cell and builds to understanding electrical activity, muscle physiology, and neural physiology. Typically Offered: Spring.

**Prereqs:** Students must be enrolled in the DAS program.

**DAS 6022 Medical Physiology (4 credits)**

This course is designed to provide students with an in-depth understanding of the function, regulation, and integration of human body organ systems at a level required for clinical medicine and basic research in medical physiology. The physiology of all organ systems will be covered, with emphasis placed on a functional understanding of homeostatic maintenance in health as well as in disease processes. Core concepts of cellular chemistry, function, and signaling mechanisms will also be included. Concepts are taught using a combination of recorded lectures, clinical correlations, and online problem sets. This course is designed to provide critical knowledge for individuals who wish to teach anatomy and physiology at the post-secondary level or to equip those who wish to teach anatomy at the graduate or professional degree level with appropriate foundational knowledge related to "function". Typically Offered: Spring.

**Prereqs:** Students must be enrolled in the DAS program

**DAS 6023 Medical Pathophysiology (4 credits)**

This course is a comprehensive study of underlying concepts common to the major pathophysiologic processes of the body. The course is designed for those interested in teaching pathology or pathophysiology or related disciplines or for health and pre-health students. The course adopts a system based approach to pathology and integrates material across systems using diseases such as cancer. Typically Offered: Varies and Spring.

**Prereqs:** Students must be enrolled in the DAS program or have permission from the course director.

**DAS 6024 Radiology Seminar (1 credit)**

This course is designed to strengthen students' understanding of clinical anatomy and of the application of medical imaging techniques in the clinical setting. Students will be required to prepare and present online presentations of clinical radiology cases selected from the primary medical literature. Each presentation will include a set of review questions designed by the student presenter to be answered by fellow students in the course. The use of real clinical cases will help students hone their skills in interpreting normal and abnormal anatomy using various medical imaging techniques and will reinforce topics in histology/histopathology and physiology/pathophysiology covered in previous courses. The course will include a focus on the design and delivery of instructional content for online delivery along with discussions surrounding best practices in developing multiple choice test questions. This course is designed to provide critical knowledge and enhance instructional skills of individuals who wish to teach gross anatomy at the graduate or professional degree level or teach anatomy and physiology at the post-secondary level. Typically Offered: Fall.

**Prereqs:** Students must be enrolled in the DAS program.

**DAS 6025 Point of Care Ultrasound (3 credits)**

This course focuses on imparting students with a strong foundation in ultrasound physics, instrumentation, and image optimization techniques. Through hands-on sessions, learners will acquire essential skills in probe manipulation, setting optimization, and the acquisition of high-quality ultrasound images, relevant to diverse clinical scenarios. Typically Offered: Fall.

**Prereqs:** Students must be enrolled in the DAS program.

**DAS 6026 Paradigms in Med Ed (3 credits)**

Students will delve into various teaching paradigms, including but not limited to traditional didactic instruction, problem-based learning, team-based learning, simulation, and technology-enhanced approaches. Emphasis will be placed on critiquing the putative strengths, limitations, best practices, and real-world challenges associated with implementing each paradigm. Typically Offered: Fall and Spring.

**Prereqs:** Students must be enrolled in the DAS program or have permission from the course director

**DAS 6027 History of Educational Philosophy (3 credits)**

This course extends upon the foundational concepts introduced in DAS 6003 by providing a historical exploration of the philosophy of education both within the realm of medicine and general education. Students will select a topic that resonates with their personal interests and develop a treatise that traces the evolution of teaching within their chosen subject. By immersing themselves in the history of educational practices, students will cultivate a deeper understanding of the ways in which teaching their subject has evolved over time, the driving forces behind these transformations, and the ensuing societal, political, or professional ramifications. Typically Offered: Fall and Spring.

**Prereqs:** DAS 6003 and students must be enrolled in the DAS program.

**DAS 6028 Characteristics of Adult Learners (3 credits)**

Recognizing that medical professionals are destined to engage in lifelong learning, this course equips educators, healthcare practitioners, and administrators with the insights and strategies required to effectively educate and engage adult learners in the ever-evolving field of medicine. Participants will explore the foundational principles of andragogy, emphasizing its application in designing curricula, fostering active learning, and cultivating self-directed, motivated, and reflective medical professionals. Typically Offered: Varies.

**Prereqs:** Students must be enrolled in the DAS program or have permission from the course director.

**DAS 6029 Biological Basis of Sensation and Perception (3 credits)**

This course content explores the biological and psychological processes that underpin human sensation and perception, including the anatomy and physiology of sensory receptors, neural pathways, and the role of the brain in processing sensory input to derive meaning. This is a self-paced course, tailored for asynchronous learners. Typically Offered: Varies.

**Prereqs:** Students must be enrolled in the DAS program or have permission from the course director.

**DAS 6040 Special Topics (1-16 credits, max 99)**

Subject matter or content may vary within specific sections across terms as indicated by the course's title and description. Typically Offered: Fall, Spring and Summer.

**Prereqs:** Students must be enrolled in the DAS program. Credits to be arranged from 1-16, and the course may be repeated for credit without restriction as to maximum.

**DAS 6970 Graduate Practicum (4 credits, max 12)**

Students will engage in a project with an in-depth focus on anatomical education, thereby giving additional context to their training and career as an educator in health care professions programs. Students will choose one track per term from the following options (individual tracks may be repeated): i. Pedagogical Practicum: Under the guidance of a faculty mentor, students will take the lead on developing and delivering classroom sessions, laboratory demonstrations, learning assessments, and grading. During the practicum, students will apply knowledge and skills they have learned throughout their program of study, as well as gain new knowledge and skills to become more marketable for job opportunities. ii. Anatomical Prosection Practicum: Students will complete an extensive and detailed dissection in the cadaver lab with the goal of producing an anatomy demonstration (prosection) that will be used for instruction in medical student anatomy courses. Upon the completion of their prosection, students will present their dissection to fellow students and/or students enrolled in anatomy courses in another health sciences degree. During the practicum, students will apply knowledge they have learned throughout their program of study, as well as gain new knowledge to become more marketable for job opportunities. Typically Offered: Fall, Spring and Summer.

**Prereqs:** Students must be enrolled in the DAS program.