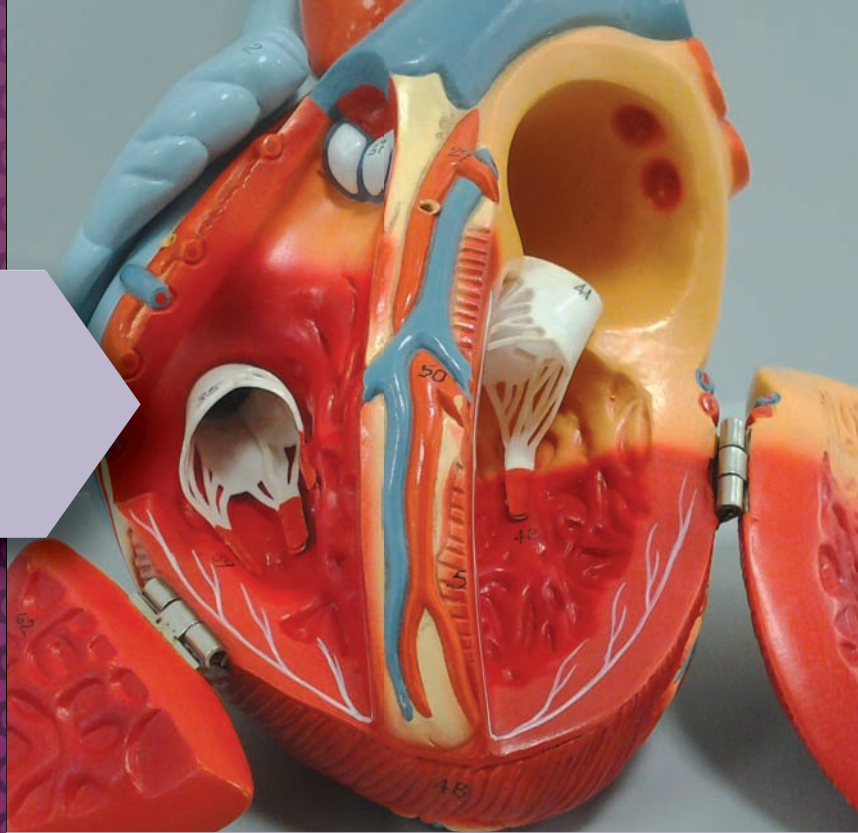




Anatomy - Gross



Why study this module?

This module provides a solid background of theoretical gross anatomy in the musculoskeletal, cardiovascular, and nervous system which is fundamental to a broad understanding of the major body functions. The practical elements which complement the theory provide students with a genuine and concrete appreciation of real anatomical relations and this is invaluable for a true and deep understanding of the anatomical knowledge in its functional context.

Module content

This module is an introduction to the macroscopic structure of the human body. The course begins with an introduction to the formal terminology and language used by anatomists to describe the relationships between and among organs and tissues. Then body systems are considered in more detail with focus on the musculoskeletal, cardiovascular, and nervous system. In each case the key anatomical and functional features are emphasised. In addition to didactic material, students will also attend at least one session in the gross anatomy laboratory.

Learning outcomes

On completion of this module you will be able to:

- Describe the overall organisation of the human body, the organ systems, their locations and relationships to one another using formal anatomical terminology
- Describe the systems which are object of major focus in some detail, including aspects of the function of each of these organ systems
- Appreciate how individual organ systems relate to one another, both in terms of their physical relationships and their functional interactions

- Apply this anatomical knowledge to the consideration of human health and diseases and conditions having an adverse effect on human health

Who is the target audience?

R&D Engineers, Technologists, Scientists, working within the Medical Device and/or Pharmaceutical sectors and Educational sector i.e. secondary school teachers, should take this module. The content will also be of interest to the curious graduate, who wishes to further their general knowledge of the human body, its structure and how it functions.

Module facts

Course level: Level 9

Module credit: 5 ECTS. Gain transcript or use towards PG Cert/PG Dip/MSc qualification in Biomedical Science

Duration: Over one semester

Entry Requirements: Please refer to the application section of the programme brochure

Fees: €1,000

Applying: www.nuigalway.ie/apply

Closing date: 2 – 8 weeks prior to module start date

Module topics

Basic Anatomical Terminology

- Anatomical position
- Anatomical planes
- Anatomical terms for movement
- Terms for parts of limbs
- Terms for main systems of the human body

The Musculoskeletal System I

- Structure and types of bone
- Bone growth and development
- Bone mechanics in the context of pathology

The Vascular System

- Position and function of the heart and heart valves
- Coronary arteries and blood flow
- The venous system
- The lymphatic system

Organisation of the Nervous System

- Central and peripheral nervous systems
- Cellular organisation of the nervous systems
- Subdivisions of the peripheral nervous system

The Musculoskeletal System II

- Osteology of the vertebral column
- Vertebral levels
- Intervertebral joint anatomy
- Relationship between vertebrae, nerve roots and the spinal cord
- Spinal column position and movement
- Normal posture
- Back pain, disc lesions, spinal cord and nerve injury

Anatomy of the Upper Limb

- Bones of the upper limb
- Anatomy of the main joints
- Muscle groups of the upper limb
- Functions and innervation of upper limb muscles

Student testimonials



Martin Fawdry

Current position:

Senior Quality Engineer, Process Development Group, Boston Scientific, Galway.

“While lectures and reference texts are an essential part of any course, the hands-on experience provided by the practical sessions of the gross anatomy module were invaluable. I don’t

believe that the opportunity to learn human anatomy through direct, practical laboratory experience is available to many students outside of medicine. It provides insights which simply cannot be gained by any other means and which augment and re-enforce the knowledge acquired in the lecture theatre and the library.

Taking this module has given me a different perspective on human anatomy and a much clearer understanding of the tissues, organs and systems which make up the human body. This has been a distinct advantage in my work, not only in discussions with colleagues but also when interacting with healthcare professionals.”



Mike Mulhall

Current position:

Engineering Manager, ASC (Advanced Surgical Concepts).

Position held while completing module:

Development Engineer, ASC.

“The Gross Anatomy module of the MSc in Biomedical Science was the most relevant to my work as a designer and manufacturer of medical/surgical devices. Understanding not just the body systems studied in the course but being given the skills and materials to study and learn about any other body systems and their interactions was extremely helpful. Medical device design often involves interactions with surgeons and other healthcare professionals who have a distinctive scientific language when discussing anatomy, surgery and patient care. This module gave me the knowledge-base required to develop new ideas and projects with surgeons. The anatomy/cadaver laboratory that formed part of this module was one of the most profoundly interesting laboratory experiences in which I’ve been involved. The hands-on and professional nature of the laboratory and the practicality of the research being done was remarkable. Since then I have attended and assisted in many cadaver laboratories through my work. I would recommend this module to anyone with an interest or career in healthcare, medical science, surgical science or anatomy or as a course to help in a career designing, manufacturing or project-managing medical devices.”



Module Director

Dr. Fabio Quondamatteo, FAS

Fabio Quondamatteo received a medical degree from the University of Bari, Italy in 1992. In the same year he successfully completed the Italian state examination for the licence to

practice Medicine. Following a brief spell working as a researcher at the Department of Neurobiology of the German Primate Centre in Göttingen, Germany, Fabio started his career as an Anatomist at the Department of Histology in the University of Göttingen, where he worked from 1993 to 2006 at different academic levels. During his period of employment in the University of Göttingen, he obtained the German licence to practice Medicine (1995), he received an M.D. degree in 1997, a “Facharzt für Anatomie” (Specialist in Anatomy) degree in 1998, and in 2001 he successfully completed the Habilitation in Anatomy (postdoctoral

qualification to formally and independently represent the Discipline of Anatomy at University level in Research and Teaching). In 2001 he also participated in a teaching course of the Anatomische Gesellschaft (German speaking Anatomical Society). He was awarded “Best Lecturer of the year 2006 in Anatomy” by the medical student association of the University of Göttingen. In January 2007, he was appointed Senior Lecturer in Anatomy at NUI Galway. He served as Vice Dean for Human Biology, Vice Head of School, and preclinical Coordinator at the School of Medicine at NUI Galway. In 2012 he co-founded Matrix Biology Ireland and in 2013 he has been elected Councillor of the Anatomical Society (British/Irish Anatomical Society). Since May 2014 he is a Fellow of the Anatomical Society (FAS) and the Representative of the Anatomical Society at the European Federation of Experimental Morphologists.

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www.nuigalway.ie/anatomy/fabiobio.html