Anatomy and Physiology for Biomedical Engineering

Module designation	Provides basic medical knowledge regarding human anatomy and physiology as a basis for subsequent courses in the field of Biomedical Engineering.
Module level, if applicable	Master
Code	SPSTB212103
Subtitles, if applicable	-
Courses, if applicable	-
Semester(s) in which the module is taught	Odd semester
Person responsible for the module	dr. Rina Susilowati, Ph.D.
Lecturers	dr. Rina Susilowati, Ph.D. dr. Nur Arfian, Ph.D. dr. R. Jajar Setiawan, M.Sc., Ph.D
Language	Indonesian
Relation to curriculum	Compulsory course
Type of teaching, contact hours	This course is planned to have 14 teaching weeks and 2 weeks of examination. several types of teaching conducted: - Classic tutorial, - Case-study learning, - Discussion - Laboratory visit

Workload	This course is planned to have 13 teaching weeks, 1 week lab visit, and 2 weeks of examination. Lectures = 3 SKS x 50 minutes x 15 meetings = 2250 minutes = 37.5 hours = 37.5 hours/25 hours =1.5 ECTS Experiment = 3 SKS x 60 minutes x 1 meeting = 180 minutes = 3 hours = 3/25 hours = 0.12 ECTS Assigment = 3 SKS x 60 minutes x 16 meetings = 2880 minutes = 48 hours = 48 hours/ 25 hours =1.92 ECTS Self Study = 3 SKS x 60 minutes x 16 meetings = 2880 minutes = 48 hours = 48 hours/ 25 hours =1.92 ECTS Total workload = 5.46 ECTS
Credit points	3 SKS (5.46 ECTS)
Requirements according to the examination regulations	-
Recommended prerequisites	-
Module objectives/intended learning outcomes	PLO 1: Able to use knowledge in the fields of engineering, health, and biology to analyze problems in the field of biomedical engineering globally that are relevant to public needs. PLO 2: Able to design research related to artificial organs and medical instrumentation. PLO 4: Able to communicate and work effectively in a multi-disciplinary team.

Content	1. Introduction: medical terminology 2. The cellular level of organization. 3. Organ systems of the body: endocrine 4. Organ systems of the body:musculo skeletal 5. Organ systems of the body: nervous system 6. Organ systems of the body: special senses 7. Organ systems of the body: cardiovascular system 8. Organ systems of the body: respiratory system 9. Organ systems of the body: digestive system 10. Organ systems of the body: reproductive system 11. Laboratory visit → Anatomy Lab of the Medical Faculty: fundamentals of human anatomy and 3D printing in the field of anatomy & custom cranioplasty, etc.
Study and examination requirements and forms of examination	Classes are conducted with 80% classic tutorial and 20% case study/project based presentation per meeting. Exams are done by written exam and/or task-based exam.
Media employed	PowerPoint, LMS (eLok, Google Classroom, etc.), and online meeting platform (Zoom, Gmeet, etc.)
Reading list	Tortora G, Derrickson B, (2014) Principles of Anatomy and Physiology 14th ed. Wiley. ISBN: 9781118808436
Last modified	November 2025.