



Module Description

Module name	Biomedical Computing
Module level, if applicable	Bachelor of Informatics
Code, if applicable	21D12141503
Subtitle, if applicable	-
Course, if applicable	
Semester(s) in which the module is taught	6 th or 7 th
Person responsible for the module	Dr. Ir. Ingrid Nurtanio., MT
Lecturer	1. Dr. Ir. Ingrid Nurtanio., MT 2. Dr.Eng. Intan Sari Areni, ST. MT
Language	Indonesian Language [Bahasa Indonesia]
Relation to Curriculum	This course is an elective course and offered in the 6 th or 7 th semester.
Type of teaching, contact hours	Teaching methods: [group discussion], [collaborative learning], [project-based learning]. Teaching forms: [lecture], [tutoria], [practicum]. CH : 08.00 - 16.00
Workload	For this course, students are required to meet a minimum of 136.00 hours in one semester, which consist of: - 40.00 hours for lecture, - 48.00 hours for structured assignments, - 48.00 hours for private study
Credit points	3 credit points (equivalent with 5.1 ECTS)
Requirements according to the	Students have participated in at least 80% of the learning activities (Academic Regulations, Chapter VII)



<p>examination regulations</p>	
<p>Recommended prerequisites</p>	<p>Artificial Intelligence</p>
<p>Module objectives/intended learning outcomes</p>	<p>After completing the course, students are able to:</p> <p>Intended Learning Outcomes (ILO):</p> <p>ILO 1 : Have the knowledge of fundamentals in Computing Science that includes basic theory and concepts of computer science, Mathematics and Statistics, Programming Algorithm, Software Engineering, Information Management and Digital Resilience, also the advance topics of either Artificial Intelligence, Data Science, Computer Network, Cloud Computing or Internet of Things.</p> <p>ILO 4 : Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements by applying computer science theory and software development fundamentals.</p> <p>ILO 6 : Perform effectively in a team, either as a member or leader, in activities related to the program's discipline</p> <p>Course Learning Objective (CLO): After attending the Biomedic Computing course for one semester, students are able to identify, analyze, design, and implement statistical methods and machine learning to model solutions in the biomedical field by taking into account ethics in the medical world</p> <p>Sub CLO : ILO 1 - CLO 1: students are able to understand the theoretical concepts of basic knowledge of informatics and ethics in the biomedical field independently, of good quality and measurable and able to analyze and design quality computing systems and architectures in the biomedical field</p> <p>ILO 4 - CLO 2: Students are able to design, implement and evaluate computer-based biomedical solutions.</p> <p>ILO 6 - CLO 3: Students are able to work in teams in activities related</p>



	to Biomedical Computing
Content	<p>Students will learn about :</p> <ol style="list-style-type: none"> 1. Informatics Biomedical 2. Biomedical Data 3. System Biomedical Decision Support 4. Architecture Biomedical Computer 5. Software Engineering in Biomedic 6. Natural Language Processing in Biomedic 7. Medical Image 8. Biomedical Ethics
Forms of Assessment	<p>Assessment techniques: [observation], [participation], [written test].</p> <p>Assessment forms: [midterm exam], [final term exam], [assignment], [presentation].</p> <p>Assignment = , Presentation = , Midterm Exam = , Finalterm Exam =</p> <p>ILO 1-->CLO1: 30% (Midterm exam and Finalterm exam: written test) ILO 4--> CLO2: 50% (Assignment: Observation) ILO 6--> CLO3: 20% (Presentation: Participation)</p>
Study and examination requirements and forms of examination	<p>Study and examination requirements:</p> <ul style="list-style-type: none"> - Students must attend 15 minutes before the class starts. - Students must switch off all electronic devices. - Students must inform the lecturer if they will not attend the class due to sickness, etc. - Students must submit all class assignments before the deadline. - Students must attend the exam to get the final grade. <p>Form of examination: Written exam:</p>
Media employed	Video conference, slide presentation, Learning Management System (LMS)
Reading list	<p>Main :</p> <ol style="list-style-type: none"> 1. Edward C Shortlife & James J. Cimino, Biomedical Informatics, 4e Springer <p>Support :</p> <ol style="list-style-type: none"> 1. J. G. Webster, Medical Instrumentation, Application and Design, Houghton Mifflin Co, 1978



	2. P. Insap Santosa, “Interaksi Manusia dan Komputer; Teori dan Praktek”, Andi Yogyakarta, 1997
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