Module Description

Module name	Simulation and Modelling
Module level, if applicable	Bachelor of Informatics
Code, if applicable	435D4233
Subtitle, if applicable	-
Course, if applicable	-
Semester(s) in which the module is taught	7th
Person responsible for the module	**Dr.Ir.Rhiza S Sadjad, MS.EE**
Lecturer	Dr.Ir.Rhiza S Sadjad, MS.EE Elly Warni, ST., MT
Language	Indonesian Language [Bahasa Indonesia]
Relation to Curriculum	This course is a compulsory course and offered in the 7th semester.
Type of teaching, contact hours	Teaching methods: [group discussion], [project-based learning]. Teaching forms: [lecture], [tutorial]. 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	Students must have attended all minimum 80% of classes and submitted

according to the examination regulations	all class assignments that are scheduled before the final tests.
Recommended prerequisites	-
Module objectives/intended learning outcomes	After completing the course, Students are able: **Intended Learning Outcome (ILO):** **ILO 2 :** Have the knowledge of advanced topics in Informatics specific fields of either Artificial Intelligence, Data Science, Computer Network, Cloud Computing, or Internet of Things. **ILO 3 :** Apply the knowledge of computing and other related disciplines to analyze and identify solutions for any computing-based problem. **ILO 5 :** Accomplish the tasks within their professional responsibilities based on legal and ethical principles. **Course Learning Objectives (CLO):** After following this course for 1 semester, students have knowledge related to the basic concepts of modeling and simulation, system modeling, the urgency of modeling, modeling in engineering education and apply the knowledge of various models and examples and use modeling and simulation tools and are able to complete related projects modeling and simulation **CLO 1 :** Students have knowledge of basic concepts in simulation and modelling, system modelling, urgency modelling and modeling in engineering education **CLO 2 :** Students can apply the knowledge of various models and examples and also use modeling and simulation tools

	CLO 3 : Students can accomplish the tasks related to modeling and simulation projects
Content	Students will learn about : 1. Konsep dasar pemodelan dan simulasi 2. Pemodelan sistem 3. Urgensi pemodelan 4. Pemodelan dalam pendidikan teknik 5. Macam-macam model dan contoh 6. Tools pemodelan dan simulasi 7. Project pemodelan dan simulasi
Forms of Assessment	Assessment techniques: [observation], [written test]. Assessment forms: [midterm exam], [final term exam], [assignment], [report]. Midterm exam = 20%, Final term exam = 20%, Assignment= 30%, Report = 30%, CLO 1 => ILO 2: 40% (Midterm exam, Final term exam : written test) CLO 2 => ILO 3: 30% (Assignment: participation) CLO 3 => ILO 5: 30% (Report: observation)
Study and examination requirements and forms of examination	**Study and examination requirements:** - 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 a final grade. **Form of examination:** Written test
Media employed	Video Conference, Video and Slide Presentation.
Reading list	**Main :** 1. Gordon, Goeffrey, *System Simulation*, Prentice-Hall of India Private Limited,1989. 2. Law, Averill M., Simulation Modeling and analysis, McGrow-Hill international edition, 2007