



UNIVERSITAS GADJAH MADA

Faculty of Mathematics and Natural Sciences

Department of Computer Science and Electronics

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Bachelor in Electronics and Instrumentation

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MODULE HANDBOOK

Module name	Artificial Intelligence
Module level	Undergraduate
Code	MIE21-2401
Courses (if applicable)	Artificial Intelligence
Semester	Fall (Odd)
Contact person	Prof. Dra. Sri Hartati, M.Sc., Ph.D.
Lecturer	1. Prof. Dra. Sri Hartati, M.Sc., Ph.D 2. Retantyo Wardoyo, Drs., M.Sc., Ph.D. 3. Aina Musdholifah, S.Kom., M.Kom., Ph.D. 4. Diyah Utami Kusumaning, S.Kom., M.Sc., M.Cs. 5. Dzikri Rahadian Fudholi, S.Kom., M.Comp.
Language	Bahasa Indonesia & English
Relation to curriculum	1. Undergraduate degree program, compulsory, 3rd semester. 2. International undergraduate program, compulsory, 3rd semester.
Type of teaching, contact hours	1. Undergraduate degree program: lectures, < 60 students, 2. International undergraduate program: lectures, < 30 students.
Workload	1. Lectures: 3 x 50 = 150 minutes per week. 2. Exercises and Assignments: 2 x 50 = 100 minutes per week. 3. Private study: 1 x 50 = 50 minutes per week.
Credit points	3 credit points (sks).
Requirements according to the Examination regulations	A student must have attended at least 75% of the lectures to sit in the exams.
Recommended prerequisites	Logic for Computer Science

Learning outcomes (course outcomes) and their corresponding PLOs	After completing this module, a student is expected to: CO1. Be able to explain research trend of artificial intelligence and intelligent agent CO2. Be able to formulate problems using solution searching approach and be apple to use the searching methods to solve the problems CO3. Be able to identify knowledge and represent that knowledge correctly, and also able to do unification process when inferring the knowledge. CO4. Be able to explain the architecture of expert system CO5 Be able to explain the architecture of natural language processing system CO6 Be able to explain the architecture of pattern recognition system and machine learning methods <table><tr><th colspan="2">PLO</th><th>CO1</th><th>CO2</th><th>CO3</th><th>CO4</th><th>CO5</th><th>CO6</th></tr><tr><td rowspan="5">Program Learning Outcome (PLO)</td><td>PLO1</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>PLO2</td><td>√</td><td>√</td><td>√</td><td>√</td><td>√</td><td>√</td></tr><tr><td>PLO3</td><td></td><td></td><td>√</td><td>√</td><td>√</td><td></td></tr><tr><td>PLO4</td><td></td><td>√</td><td></td><td></td><td></td><td>√</td></tr><tr><td>PLO5</td><td></td><td></td><td></td><td></td><td></td><td>√</td></tr></table>	PLO		CO1	CO2	CO3	CO4	CO5	CO6	Program Learning Outcome (PLO)	PLO1							PLO2	√	√	√	√	√	√	PLO3			√	√	√		PLO4		√				√	PLO5						√
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Contents	1. Introduction to Artificial Intelligence 2. Intelligent Agent 3. Concept and Application of Problem Solving by Searching: Informed Search 4. Concepts and Applications of Problem Solving by Searching: Uninformed Search 5. Knowledge Representation 6. Introduction, Architecture and Agenda of Expert System 7. Introduction of Natural Language Processing Systems 8. Introduction of Pattern Recognition Systems and Machine Learning																																												
Study and examination requirements and forms of examination	The evaluation is done in 3 forms, namely: 1. Exam, including midterm or final exam, 2. Four individual tasks, 3. Two group assignments to be completed within a certain timeframe, and Assessment is done using benchmark assessment, with the aim of measuring the level of student understanding related to the target and class rank.																																												
Media employed	e-learning Platform (ELOK), LCD, blackboard, and websites.																																												

Assessments and Evaluation		Type	Percentage	CO1	CO2	CO3	CO4	CO5	CO6
	Individual Task 1	5	√						
	Individual Task 2	5		√					
	Group Task 1	10			√				
	Midterm Exam	30	√	√	√				
	Individual Task 3	5				√			
	Individual Task 4	5					√		
	Group Task 2	10							√
	Final Exam	30				√	√		√
	Total	100	15	20	15	15	15		20
Reading List	• WA: Russell, S. and Norvig, P., 2020, Artificial Intelligence: A Modern Approach, 4th Edition, Pearson, US. • WB: George F. Luger, 2008, Artificial Intelligence: Structures and Strategies for Complex Problem Solving, 6th Edition, Addison-Willy • AA: Michael Negnivitsky, 2004, Artificial Intelligence: A Guide to Expert Systems, 2nd Edition, Addison Willy • AB: W. Firebaugh, 2000, Artificial Intelligence: A Knowledge-Based Approach, Boyd & Fraser, Boston								

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