



UNIVERSITAS GADJAH MADA

Faculty of Mathematics and Natural Sciences

Department of Computer Science and Electronics

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Bachelor in Computer Science

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Module Handbook

Module name	Research Trends in Algorithm and Computation																										
Module level	Undergraduate																										
Code	MII21-3204																										
Courses (if applicable)	Research Trends in Algorithm and Computation																										
Semester	Winter (Genap)																										
Contact person	Prof. Retantyo Wardoyo, PhD																										
Lecturer	Practitioner /experties Prof. Retantyo Wardoyo, PhD Anny Kartika Sari, S.Si., M.Sc., Ph.D Faizal Makhrus,S.Kom., M.Sc., Ph.D Muhammad Alfian Amrizal, B.Eng., M.I.S., Ph.D. Wahyono, S.Kom, Ph.D.																										
Language	Bahasa Indonesia English																										
Relation to curriculum	Undergraduate degree program, elective, 5th, 6th semester.																										
Type of teaching, contact hours	Undergraduate degree program: lectures, project based																										
Workload	1. Lectures: 3 x 50 = 100 minutes (2.5 hours) per week. 2. Exercises and Assignments: 3 x 60 = 180 minutes (2 hours) per week. 3. Private study: 3 x 60 = 180 minutes (3 hours) 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	Have taken minimal 60 credits																										
Learning outcomes and their corresponding PLOs	After completing this module, a student is expected to: CO1 Students are able to understand and explain the latest topics of development algorithms and application which are used in real world. CO3 Students are able to use/apply the trend algorithm based on computational approaches. CO4 Students are able to represent and explain the results of their works. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2">PLO</th> <th>CO1</th> <th>CO3</th> <th>CO3</th> </tr> </thead> <tbody> <tr> <td rowspan="5">Program Learning Outcome (PLO)</td> <td>PLO1</td> <td></td> <td></td> <td></td> </tr> <tr> <td>PLO2</td> <td>v</td> <td></td> <td></td> </tr> <tr> <td>PLO3</td> <td>v</td> <td>v</td> <td></td> </tr> <tr> <td>PLO4</td> <td></td> <td>v</td> <td></td> </tr> <tr> <td>PLO5</td> <td></td> <td></td> <td>v</td> </tr> </tbody> </table>	PLO		CO1	CO3	CO3	Program Learning Outcome (PLO)	PLO1				PLO2	v			PLO3	v	v		PLO4		v		PLO5			v
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	PLO3	v	v																								
	PLO4		v																								
	PLO5			v																							
Content	This subject provides an overview of the latest research related to the fields of Algorithms and Computing. This subject is given by several lecturers, especially lecturers in the Algorithm and Computation Research Laboratory.																										

	<p>but it does not rule out the possibility of inviting experts in the field of Algorithms and Computing from universities at home and abroad.</p> <p>After attending this lecture, students are expected to be able to: (a) get to know various research advances in the field of algorithms and computing; (b) identify research of interest; (c) have an idea of the research to be carried out.</p>																																			
Study and examination requirements and forms of examination	Assignments, midterms examination, and final examination.																																			
Media employed	LCD, blackboard, websites, and programming tools																																			
Assessments and Evaluation	<table border="1"> <thead> <tr> <th>Type</th> <th>Percentage</th> <th>CO1</th> <th>CO2</th> <th>CO3</th> </tr> </thead> <tbody> <tr> <td>Individual task & Quiz</td> <td>10</td> <td></td> <td>v</td> <td>v</td> </tr> <tr> <td>Project/task topics 1, 2, 3</td> <td>30</td> <td>v</td> <td>v</td> <td></td> </tr> <tr> <td>Final Project & Presentation</td> <td>20</td> <td></td> <td></td> <td>v</td> </tr> <tr> <td>Midterm Exam</td> <td>20</td> <td>v</td> <td></td> <td></td> </tr> <tr> <td>Final Exam</td> <td>20</td> <td></td> <td>v</td> <td></td> </tr> <tr> <td>Total</td> <td>100</td> <td>30</td> <td>40</td> <td>20</td> </tr> </tbody> </table>	Type	Percentage	CO1	CO2	CO3	Individual task & Quiz	10		v	v	Project/task topics 1, 2, 3	30	v	v		Final Project & Presentation	20			v	Midterm Exam	20	v			Final Exam	20		v		Total	100	30	40	20
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Reading List	<ol style="list-style-type: none"> 1. Boris Avraamovich and Trakhtenbrot, 2021, Algorithms and Automatic Computing Machines , Hassell Street Press, ISBN-13978-1013681745. 2. Brian Christian, Tom Griffiths, Brilliance, 2016, Algorithms to Live By: The Computer Science of Human Decisions, Brilliance Audio. 3. Tibor Bosse, Joost Broekens , et al, 2014, Emotion Modeling: Towards Pragmatic Computational Models of Affective Processes (Lecture Notes in Computer Science Book 8750), Springer, ISBN-13978-3319129723 4. Ryan A Bush, 2021, Designing the Mind: The Principles of Psychitecture , Independently published, ISBN-13978-1737846208 5. Shoshana Zuboff, 2019, The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power, PublicAffairs. 6. Andrew Greasley,2023, Simulation Modelling Concepts, Tools and Practical Business Applications, Routledge, ISBN 9780367643539 <p>Noted: The most related references will also be used based on the latest given topics</p>																																			