



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 Software and Data Engineering																										
Module level	Undergraduate																										
Code	MII21-3510																										
Courses (if applicable)	Research Trends in Software and Data Engineering																										
Semester	Fall (Ganjil)																										
Contact person	Edi Winarko, Drs., M.Sc. Ph.D.																										
Lecturer	Practitioner (from industrial partnership, organization) Edi Winarko, Drs., M.Sc. Ph.D. Arif Nurwidyantoro, S.Kom., M.Cs. Ph.D. Azhari, Dr., MT. I Gede Mujiyatna, S.Kom., M.Kom. Khabib Mustofa, S.Si., M.Kom., Dr.tech. Lukman Heryawan, S.T., M.T., Ph.D.																										
Language	Bahasa Indonesia English																										
Relation to curriculum	Undergraduate degree program, elective, 7th 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	<p>After completing this module, a student is expected to:</p> <p>CO1 Able to analyze research publications in the field of software engineering and data.</p> <p>CO2 Able to demonstrate the use of auxiliary equipment and software and data engineering research models.</p> <p>CO3 Able to compare research publications in the field of software engineering and data.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <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>V</td> </tr> <tr> <td>PLO3</td> <td></td> <td>v</td> <td></td> </tr> <tr> <td>PLO4</td> <td></td> <td>v</td> <td></td> </tr> <tr> <td>PLO5</td> <td>V</td> <td></td> <td>v</td> </tr> </tbody> </table>	PLO		CO1	CO3	CO3	Program Learning Outcome (PLO)	PLO1				PLO2	v		V	PLO3		v		PLO4		v		PLO5	V		v
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	PLO5	V		v																							

Content	<p>This course discusses trends and developments in research in the field of software and data engineering. In this course, participants will be introduced to emerging topics in the field of software and data engineering, including research support equipment (such as software or libraries).</p> <ol style="list-style-type: none"> 1. Introduction to research trends in the field of data analysis 2. Research trends in the field of data analysis 3. Research trends in software engineering 4. Comparison of research trends in the field of software engineering 																																			
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, 4</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>v</td> <td>v</td> </tr> <tr> <td>Final Exam</td> <td>20</td> <td>v</td> <td>v</td> <td>v</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, 4	30	v	v		Final Project & Presentation	20			v	Midterm Exam	20	v	v	v	Final Exam	20	v	v	v	Total	100	30	40	20
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Reading List	<ol style="list-style-type: none"> 1. Lubna Mahmoud Abu Zohair, 2018, The Future of Software Engineering by 2050s: Will AI Replace Software Engineers? Int. J. of Information Technology and Language Studies, 2(3), pp 1-13. 2. Atif Mashkooor, Tim Menzies,, Alexander Egyed, dan Rudolf Ramler, 2022, Artificial Intelligence and Software Engineering: Are We Ready?, Computer, 55(03), pp. 24-28. 3. nxtide, 2022, Artificial Intelligence, Machine Learning, and the Future of Software Development, 4. https://nxtide.com/software-development/artificial-intelligence-machine-learning-and-the-future-of-softwaredevelopment/ 5. Shyamal Prajapati, Bhagirath Prajapati, Sudhir Vegad, and Gunvantsinh Gohil, 2022, Artificial Intelligence and Software Engineering: Status, Future Trend, and Its Interaction, Int. J. for Research in Applied Science, Engineering Technology (IJRASET), 10(3). pp 1411-1417. <p>Noted: The most related references will also be used based on the latest given topics</p>																																			