



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 Methodology of Computer Science
Module level, if applicable	Bachelor
Code, if applicable	MII-3002
Courses, if applicable	Research Methodology of Computer Science
Semester(s) in which the module is taught	Fall (Gasal)
Person responsible for the module	Dr. Azhari, M.T.
Lecturer(s)	Dr. Azhari, M.T.
Language	Bahasa Indonesia and English
Relation to curriculum	Bachelor degree, compulsory, 5 th or 7 th semester.
Teaching methods	100 minutes of lectures and 120 minutes of structured activities per week.
Workload (incl. contact hours, self-study hours)	1. Lectures: 2 x 50 = 100 minutes (1.3 hours) per week. 2. Exercises and Assignments: 2 x 60 = 120 minutes (2 hours) per week. 3. Private study: 2 x 60 = 120 minutes (2 hours) per week.
Credit points	2 credit points
Requirements according to the examination regulations	A student must have attended at least 75% of the lectures to sit in the exams.
Required and recommended prerequisites for joining the module	Has taken 70 credit points.

<p>Learning outcomes and their corresponding PLOs</p>	<p>After completing this module, a student is expected to:</p> <p>LO1 understanding on the types of scientific research methodology concepts, processes, and steps in Computer Science.</p> <p>LO2 be able to formulate a research problem, read a related literature reviews, use a bibliography tool for scientific writing in an academic reference style.</p> <p>LO3 able to create a research plan, design and conduct experimental studies, thesis preparation for computer science.</p> <p>LO4 be able to analyze and evaluate research works, by collecting a sample data, present and publish them as a thesis or a technical paper.</p> <p>LO5. be aware and understand of the research ethics, prevent for plagiarism.</p> <p>LO6. be able to convey and communicate the research by good practice of students presentation skills.</p> <p>LO7. be able to apply a research method followed in computer science research for formulation, and design of own research problems, and to utilize them in their own research project.</p> <table border="1" data-bbox="630 926 1409 1182"> <thead> <tr> <th colspan="2">PLO</th> <th>LO 1</th> <th>LO 2</th> <th>LO 3</th> <th>LO 4</th> <th>LO 5</th> <th>LO 6</th> <th>LO 7</th> </tr> </thead> <tbody> <tr> <td rowspan="5">Program Learning Outcome (PLO)</td> <td>PLO1</td> <td></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> <td></td> </tr> <tr> <td>PLO3</td> <td></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> <td></td> </tr> <tr> <td>PLO5</td> <td></td> <td>√</td> <td></td> <td></td> <td></td> <td>√</td> <td></td> </tr> </tbody> </table>	PLO		LO 1	LO 2	LO 3	LO 4	LO 5	LO 6	LO 7	Program Learning Outcome (PLO)	PLO1								PLO2								PLO3							√	PLO4	√		√	√	√			PLO5		√				√	
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<p>Content</p>	<p>This Research methodology of computer science course will be discussed on how the students can find problem of research, write the literature review, prepare proposal, final reports and presenting the results of a study in the field of computer science. In overall, the main scopes that will be conveyed in this course are the survey and observation, the formulation of the problem, research hypothesis, research plan, develop and formulate conclusions, presentation of scientific papers, literature review.</p>																																																		
<p>Study and examination requirements and examination forms</p>	<p>Mid-terms examination and Final examination</p>																																																		
<p>Media employed</p>	<p>LCD, Whiteboard, websites, books & paper (as references), etc.</p>																																																		

Assessments and evaluation	<p>LO1 problem 1 in midterm (5%) and problem 2 in midterm (5%)</p> <p>LO2 problem 3 in midterm (10%) and assignment 1 in assignment (7.5%)</p> <p>LO3 problem 4 in midterm (10%) and problem 1 in final term (2.5%)</p> <p>LO4 problem 2 in final term (5%) and manuscript paper in project (5%)</p> <p>LO5 problem 5 in final term (10%)</p> <p>LO6 problem 4 in final term (10%), proposal thesis (seminar & presentation) in presentation (10%), quiz & class discussion in group discussion (5%)</p> <p>LO7 problem 3 in final term (7.5%) and assignment 2 in assignment (7.5%)</p>
Reading list	<ol style="list-style-type: none"> 1. Creswell, J. W. 2002, Research Design: Qualitative, Quantitative, and Mixed Methods Approaches. Second Edition. Sage. 2. Wohlin, C., Runeson, P., Höst, M., Ohlsson, M.C., Regnell, B., Wesslén, A. 2012, Experimentation in Software Engineering, ISBN 978-3-642-29044-2, Springer-Verlag Berlin Heidelberg. 3. Michael P., 2011, Research Methods for Science, Cambridge University Press The Edinburgh Building, Cambridge CB2 8RU, UK. 4. FMIPA UGM, 2010, Buku Panduan Tugas Akhir FMIPA UGM, FMIPA UGM, Yogya

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