

**UNDERGRADUATE PROGRAM IN COMPUTER SCIENCE
DEPARTMENT OF COMPUTER SCIENCE AND ELECTRONICS
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
UNIVERSITAS GADJAH MADA**

Module name	Research Methodology on Computer Science	
Module level	Undergraduate and Master	
Code	MII-3003	
Courses (if applicable)	Research Methodology on Computer Science	
Semester	Fall	
Contact person	Dr. Azhari SN, MT	
Lecturer	Dr. Azhari SN, MT	
Language	English	
Relation to curriculum	<ol style="list-style-type: none"> 1. Undergraduate degree program, compulsory, 5th or 7th semester. 2. International undergraduate program, compulsory, 5th or 7th semester. 3. Master degree program, compulsory 1nd semester. 	
Type of teaching, contact hours	<ol style="list-style-type: none"> 1. Undergraduate degree program: lectures, < 60 students. 2. International undergraduate program: lectures, < 30 student. 3. Master degree program: lectures, < 25 students 	
Workload	<ol style="list-style-type: none"> 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 (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	Has taken 60 credit points	
Learning outcomes and their corresponding PLOs	After completing this module, a student is expected to:	
	CO1. understanding on the types of scientific research methodology concepts, processes, and steps in Computer Science	PLO5
	CO2. be able to formulate a research problem, read a related literature reviews, use a bibliography tool for scientific writing in an academic reference style	PLO8
	CO3. able to create a research plan, design and conduct experimental studies, thesis preparation for computer science	PLO5
	CO4. be able to analyze and evaluate research works, by collecting a sample data, present and publish them as a thesis or a technical paper	PLO5
CO5. be aware and understand of the research ethics, prevent for plagiarisms	PLO6	

	CO6. be able to convey and communicate the research by good practice of students presentation skills	PLO7
	CO7. 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.	PLO4
Content	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.	
Study and examination requirements and forms of examination	Mid-terms examination and Final examination.	
Media employed	LCD, Whiteboard, websites, books & paper (as references), etc.	
Assessments and Evaluation	CO1 problem 1 in midterm (5%) CO1 problem 2 in midterm (5%) CO2 problem 3 in midterm (10%) CO3 problem 4 in midterm (10%) CO3 problem 1 in final term (2.5%) CO4 problem 2 in final term (5%) CO7 problem 3 in final term (7.5%) CO6 problem 4 in final term (10%) CO5 problem 5 in final term (10%) CO2 assignment 1 in assignment (7.5%) CO7 assignment 2 in assignment (7.5%) CO4 manuscrip paper in project (5%) CO6 proposal thesis (seminar & presentation) in presentation (10%) CO6 quiz & class discussion in group discussion (5%)	
Reading List	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	