



UNIVERSITAS INDONESIA
Faculty of Mathematics and Natural Sciences
Department of Mathematics
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MODULE HANDBOOK

Module designation	<i>Research Methods</i>
Semester(s) in which the module is taught	5
Person responsible for the module	<i>Undergraduate thesis supervisors</i>
Language	<i>Indonesian</i>
Relation to curriculum	<i>Special compulsory course</i>
Teaching methods	<i>lecture, discussion</i>
Workload (incl. contact hours, self-study hours)	<i>(Estimated) Total workload: 6 hours x 14 weeks + 2 hours x 2 weeks = 88 hours. Contact hours: 2 hours (100 minutes of lectures or discussion) per week. Private study including examination preparation, specified in hours¹: 2 hours of structured activities and 2 hours of individual study per week.</i>
Credit points	<i>2 SKS (3,18 ECTS)</i>
Required and recommended prerequisites for joining the module	-

¹ When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

<p>Module objectives/intended learning outcomes</p>	<p><i>After completing the course, students have the ability</i></p> <ol style="list-style-type: none"> 1. <i>to explain the basic understanding of research methods, include understanding of scientific research, types of approaches in research, and research steps.</i> 2. <i>to identify the scope of research, in particular research in mathematics, including problem definition, and literature search that supports problem solving.</i> 3. <i>to do mathematical reasoning in reading topics, theorems, and their proofs, and rewrite them according to the rules of scientific writing.</i> 4. <i>to characterize the types of scientific publications.</i> 5. <i>to write a research proposal according to the rules of scientific writing.</i> 6. <i>to give an oral presentation a research proposal.</i> 																				
<p>Content</p>	<ol style="list-style-type: none"> 1. <i>Introduction to scientific research.</i> 2. <i>Mathematical reasoning.</i> 3. <i>Introduction to scientific publication.</i> 4. <i>Writing research proposal.</i> 																				
<p>Examination forms</p>	<ol style="list-style-type: none"> 1. <i>Class activities : Assignment</i> 2. <i>Research proposal.</i> 3. <i>Oral presentation of research proposal.</i> 																				
<p>Study and examination requirements</p>	<p><i>The final mark will be weighted as follows:</i></p> <ol style="list-style-type: none"> 1. <i>Assignment (30%)</i> 2. <i>Research proposal (50%)</i> 3. <i>Presentation of research proposal (20%)</i> <p><i>To succesfully pass the module it requires minimum 55% of the total mark.</i></p> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;"><i>Mark</i></th> <th style="text-align: center;"><i>Grade</i></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;"><i>85 – 100</i></td> <td style="text-align: center;"><i>A</i></td> </tr> <tr> <td style="text-align: center;"><i>80 – < 85</i></td> <td style="text-align: center;"><i>A-</i></td> </tr> <tr> <td style="text-align: center;"><i>75 – < 80</i></td> <td style="text-align: center;"><i>B+</i></td> </tr> <tr> <td style="text-align: center;"><i>70 – < 75</i></td> <td style="text-align: center;"><i>B</i></td> </tr> <tr> <td style="text-align: center;"><i>65 – < 70</i></td> <td style="text-align: center;"><i>B-</i></td> </tr> <tr> <td style="text-align: center;"><i>60 – < 65</i></td> <td style="text-align: center;"><i>C+</i></td> </tr> <tr> <td style="text-align: center;"><i>55 – < 60</i></td> <td style="text-align: center;"><i>C</i></td> </tr> <tr> <td style="text-align: center;"><i>40 – < 55</i></td> <td style="text-align: center;"><i>D</i></td> </tr> <tr> <td style="text-align: center;"><i>0 – < 40</i></td> <td style="text-align: center;"><i>E</i></td> </tr> </tbody> </table>	<i>Mark</i>	<i>Grade</i>	<i>85 – 100</i>	<i>A</i>	<i>80 – < 85</i>	<i>A-</i>	<i>75 – < 80</i>	<i>B+</i>	<i>70 – < 75</i>	<i>B</i>	<i>65 – < 70</i>	<i>B-</i>	<i>60 – < 65</i>	<i>C+</i>	<i>55 – < 60</i>	<i>C</i>	<i>40 – < 55</i>	<i>D</i>	<i>0 – < 40</i>	<i>E</i>
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Reading list

1. *Pandey, Prabat; Meenu Mishra Pandey. 2015. Research Methodology: Tools And Techniques. Bridge Center Publ.; Kumar, Ranjit. 2011.*
2. *Research Methodology. - a step-by-step guide for beginners; 3rd ed.; SAGE Publ. Inc.*
3. *Gustavi, Bjo'rn, 2008. How to Write and Illustrate Scientific Papers; 2nd ed.; Cambridge University Press.*
4. *Lecturer's Handout.*