



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

Module designation	<i>Research Methodology</i>
Semester(s) in which the module is taught	5
Person responsible for the module	<i>Module Coordinator</i>
Language	<i>Indonesian</i>
Relation to curriculum	<i>Compulsory</i>
Teaching methods	<i>lecture, lab works</i>
Workload (incl. contact hours, self-study hours)	<i>(Estimated) Total workload: 8.5 hours x 14 weeks + 3 hours x 2 weeks Contact hours: 150 minutes lectures, 180 minutes structured activities, and 180 minutes individual study per week Private study including examination preparation, specified in hours<sup>1</sup>:</i>
Credit points	<i>2 sks (3,18 ECTS)</i>
Required and recommended prerequisites for joining the module	-

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<sup>1</sup> 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"> <li>1. <i>to explain the basic understanding of research methods, include understanding of scientific research, research methods, types of approaches in research, and research steps.</i></li> <li>2. <i>to identify the scope of research, in particular research in mathematics, including problem definition, and literature search that supports problem solving.</i></li> <li>3. <i>to do mathematical reasoning in reading topics, theorems, and their proofs, and rewrite them according to the rules scientific writing</i></li> <li>4. <i>to characterize the types of scientific publications</i></li> <li>5. <i>to prepare research proposals according to the rules by following the rules of scientific writing</i></li> <li>6. <i>to compile scientific papers according to the rules by following the rules of scientific writing.</i></li> </ol>																				
<p>Content</p>	<ol style="list-style-type: none"> <li>1. <i>Introduction to scientific research</i></li> <li>2. <i>Mathematical Analysis</i></li> <li>3. <i>Introduction about scientific publication</i></li> <li>4. <i>How to write research proposal</i></li> <li>5. <i>How to write scientific article</i></li> <li>6. <i>Thesis and Dissertation</i></li> </ol>																				
<p>Examination forms</p>	<ol style="list-style-type: none"> <li>1. <i>Class activities : Assignment</i></li> <li>2. <i>Project Presentation</i></li> </ol>																				
<p>Study and examination requirements</p>	<p><i>The final mark will be weighted as follows:</i></p> <ol style="list-style-type: none"> <li>1. <i>Assignment: 80%</i></li> <li>2. <i>Project Présentation (20%)</i></li> </ol> <p><i>To succesfully pass the module it requires minimum 55% of the total mark.</i></p> <table data-bbox="608 1413 879 1861"> <thead> <tr> <th><i>Mark</i></th> <th><i>Grade</i></th> </tr> </thead> <tbody> <tr> <td>85—100</td> <td>A</td> </tr> <tr> <td>80—&lt;85</td> <td>A-</td> </tr> <tr> <td>75—&lt;80</td> <td>B+</td> </tr> <tr> <td>70—&lt;75</td> <td>B</td> </tr> <tr> <td>65—&lt;70</td> <td>B-</td> </tr> <tr> <td>60—&lt;65</td> <td>C+</td> </tr> <tr> <td>55—&lt;60</td> <td>C</td> </tr> <tr> <td>40—&lt;55</td> <td>D</td> </tr> <tr> <td>&lt;40</td> <td>E</td> </tr> </tbody> </table>	<i>Mark</i>	<i>Grade</i>	85—100	A	80—<85	A-	75—<80	B+	70—<75	B	65—<70	B-	60—<65	C+	55—<60	C	40—<55	D	<40	E
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<40	E																				

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 Univ Press.*
4. *Lecturer's Handout (powerpoint)*