

## 21B33C501 – Research Methodology

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| Module designation  | Research Methodology (Undergraduate)  |
| Semester(s) in which the module is taught                     | 5 <sup>th</sup>   |
| Person responsible for the module                             | Dr. Ir. Ridwan Daud Mahande, M.Pd., IPM<br>Wirawan Setyalaksana, S.Si., MSc.  |
| Language  | Indonesia – English   |
| Relation to curriculum  | This course is a compulsory course  |
| Teaching methods  | Lecture, Presentation   |
| Workload (incl. contact hours, self-study hours)              | CH: 09.00-17.00<br>Face to face: 2x50 minutes / week<br>Independent Study: 2x50 minutes / week<br>Structured assignment: 2x50 minutes / week  |
| Credit points   | 2 SKS (equivalent 3.4 ECTS)   |
| Required and recommended prerequisites for joining the module | -   |
| Module objectives/intended learning outcomes                  | <p><b>Program Learning Outcomes (PLO)</b></p> <p>PLO 1:<br/>Have faith in God Almighty and be able to show a religious attitude;</p> <p>PLO 1:<br/>Upholding human values in carrying out duties based on religion, morals and ethics;</p> <p>PLO 3:<br/>Demonstrate a responsible attitude towards work in their field of expertise independently;</p> <p>PLO 3:<br/>Internalize academic values, norms and ethics;</p> <p>PLO 6:<br/>Mastering research methodology in the field of informatics and computers;</p> <p>PLO 7:<br/>Able to implement and develop technological knowledge and carry out research in accordance with their expertise based on scientific principles, procedures and ethics in order to produce solutions, ideas and criticism</p> <p>PLO 8:</p> |

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|         | <p>Able to compile scientific descriptions of study results at PLO 1 in the form of a thesis or final assignment report, and publish them in the form of scientific articles;</p> <p>PLO 12:</p> <p>Able to carry out research that includes identification, formulation and analysis of engineering problems in the field informatics and computer engineering education;</p> <p><b>Course Learning Objectives (CLO)</b></p> <p>The course provides knowledge and insight to students including the concept and meaning of research, types of research, literature reviews, theoretical studies, frameworks of thinking and development of research hypotheses. Selecting research designs and procedures, sampling techniques, instrument development, validity and reliability and research data analysis techniques. Use of reference management applications and preparation of research proposals.</p> <p><b>Sub CLO:</b></p> <p>Sub-CLO 1: Students are able to explain the concept and meaning of research</p> <p>Sub-CLO 2: Students are able to determine the form and types of research</p> <p>Sub-CLO 3: Students are able to sequence the Research Proposal framework</p> <p>Sub-CLO 4: Students are able to study literature and use applications to identify research problems and novelties</p> <p>Sub-CLO 5: Students are able to explain the concept of research variables</p> <p>Sub-CLO 6 Students are able to prepare theoretical studies, frameworks for thinking &amp; develop hypotheses</p> <p>Sub-CLO 7 Students are able to choose Research Design and Procedures</p> <p>Sub-CLO 8 Students are able to determine Population and Sampling Techniques</p> <p>Sub-CLO 9 Students are able to explain the measurement scale and instrument development steps</p> <p>Sub-CLO 10 Students are able to test the validity and reliability of the instrument</p> <p>SUB-CLO 11 Students are able to choose data collection methods and instruments as well as research data analysis techniques</p> <p>Sub-CLO 12 Students are able to use the Reference Management Application</p> <p>Sub-CLO 13 Students are able to prepare research proposals</p> |
| Content | <p>Students will learn about:</p> <ul style="list-style-type: none"> <li>● Concept and Meaning of Research</li> <li>● Forms and Types of research</li> <li>● Anatomy of a Research Proposal</li> <li>● Review of Literature and Applications to select research problems and novelties</li> <li>● Concept of Research Variables</li> <li>● Theory Study, Thinking Framework &amp; Hypothesis Development</li> <li>● Research Design and Procedures</li> <li>● Population and Sampling Techniques</li> </ul>  |

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|                                    | <ul style="list-style-type: none"> <li>• Measurement scales and instrument development</li> <li>• Test the validity and reliability of the instrument</li> <li>• Methods, Instruments and Analysis of research data</li> <li>• Reference Management Application</li> <li>• Preparation of Research Proposals</li> </ul>  |
| Examination forms                  | <p>Assessment Techniques: Exam, Presentation, Case Based Learning</p> <p>Assessment Forms: Assignment, Presentation Assessment</p>   |
| Study and examination requirements | <ul style="list-style-type: none"> <li>• Students have to inform the lecturer when they are not able to attend the class due to sickness etc</li> <li>• Active in making projects by showing participation in making projects in class</li> <li>• Able to present and answer questions that exist during project presentations</li> </ul>  |
| Reading List                       | <ul style="list-style-type: none"> <li>• Creswell, J.W. (2012). Research Design : Qualitative, Quantitative and Mixed Methods Approaches. London : Sage Publication</li> <li>• Sugiyono (2008). Metode Penelitian Pendidikan: Pendekatan Kuantitatif, Kualitatif, R &amp; D. Bandung: Alfabeta</li> <li>• Pressman, R.S. 2002. Rekayasa Perangkat Lunak: Pendekatan Praktisi (Buku 1) Rogers S. Pressman; Diterjemahkan oleh: LN Harmaningrum, Ed.II. Yogyakarta: Andi</li> <li>• Azwar, Saifuddin. (2014). Reliabilitas dan Validitas Ed. 4. Yogyakarta: Pustaka Pelajar</li> <li>• Sukmadinata, N.,S. (2012). Metode Penelitian Pendidikan. Bandung: Remaja Rosdakarya</li> <li>• Riduwan (2012). Belajar Mudah Penelitian untuk Guru-Karyawan dan Peneliti Pemula. Bandung: Alfabeta</li> <li>• Sukardi (2013). Metodologi Penelitian Pendidikan Kompetensi dan Praktiknya. Jakarta: Bumi Aksara</li> </ul> |