

Module Descriptions

Module designation	Research Methodology
Semester(s) in which the module is taught	4 th /Second Year
Person responsible for the module	Dr. Dian Novita, S.T., M.Pd.,
Language	Bahasa Indonesia (Regular Class) Bahasa Inggris (Internasional Class)
Relation to curriculum	Compulsory course
Teaching methods	Project-Based Learning, 2 workhours per week (2 x 170 minutes per week)
Workload (incl. contact hours, self-study hours)	1 CU for a bachelor's degree equals 170 minutes (50 minutes face-to-face, 60 minutes structured, 60 minutes independent learning) per week × 14 weeks, excluding mid and end-term exams. = 39.67 work hours per semester = 1.587 ECTS.
Credit points	2 Credit Units (CU) = 3,18 ECTS
Required and recommended prerequisites for joining the module	-
Module objectives/intended learning outcomes	<ol style="list-style-type: none"> 1. Explain the basic concepts and characteristics of research. 2. Identify research designs and their variables. 3. Describe types of research and their characteristics. 4. Describe types of research and their characteristics. 5. Describe types of research and their characteristics. 6. Select a research approach and design appropriate to the problem being solved. 7. Select a research approach and design appropriate to the problem being solved. 8. Selecting a research approach and design appropriate to the problem being solved. 9. Developing a conceptual research framework and systematic research proposal. 10. Developing an introductory chapter (background, problem statement, objectives, benefits, assumptions, limitations, and operational definitions). 11. Developing a theoretical framework (literature review chapter) that supports the problem. 12. Developing a research design, research procedures, and creating a matrix of relationships between research data and data analysis. 13. Developing a list of references used to conduct the research. <p>Drafting a proposal and providing mentoring/guidance</p>

Content	A study of the nature, objectives, and types of research methods relevant to research in chemistry education and providing students with skills in decision-making and applying research methods to find alternative solutions to educational problems, including research paradigms, conceptual frameworks, hypotheses, and variables, populations and samples, research instruments, research designs, data collection techniques, and data analysis, packaged in a science education research proposal as a course output.
Examination forms	Essay and Oral Presentation
Study and examination requirements	Assessment Recap (Project-Based Learning): - Participatory Activities: 20% - Project/Product Assessment: 60% - Test Assessment: 20% - Total: 100%
Reading list	<ol style="list-style-type: none"> 1. Widoyoko, S. E. P. 2025. <i>Research Instrument Preparation Techniques</i>. Yogyakarta: Pustaka Pelajar. 2. Tim Unesa. 2024. <i>Bedoman Penulisan Tugas Akhir</i>. Surabaya: Universitas Negeri Surabaya. 3. Lutfi, A. 2021. <i>Research and Development (R & D): Implikasi dalam pendidikan kimia</i>. Surabaya: Jurusan Kimia Unesa. 4. Plom, T., & Nieveen, N. 2013. <i>Educational Design Research</i>. Netherlands Institute for Curriculum Developmet (SLO). 5. Faisal, Sanapiah. 1982. <i>Metodologi Penelitian Pendidikan</i>. Surabaya: Penerbit Usaha Nasional. 6. Moleong, Lexy J. 2004. <i>Metodologi Penelitian Kualitatif</i>. Bandung: Remaja Rosdakarya 7. Muhadjir, Noeng. 2000. <i>Metodologi Penelitian Kualitatif</i>. Edisi IV. Yogyakarta : Rake Sarasin