

Module Descriptions

A **module** is a self-contained **learning unit** within a higher education program that includes thematically related courses and is assigned a **fixed number of credits**. It follows specific **learning objectives**, includes an **assessment component**, and contributes to achieving the qualifications of a degree program. In some countries, “modules” are also named “courses”.

Please provide a module description for each module. In addition to the compulsory and elective modules, this also includes credited internships and the final thesis.

Please summarize all module descriptions in one document (Module Handbook) and create a table of contents so that the modules can be found easily.

Module designation	Innovation in Chemistry Learning
Semester(s) in which the module is taught	1st Semester
Person responsible for the module	Prof. Drs. Jaslin Ikhsan, M.App.Sc., Ph.D
Language	<i>Indonesian</i>
Relation to curriculum	<i>Compulsory / elective / specialisation</i>
Teaching methods	Lecture, Discussion, Demonstration, Experimentation, Independent Study, Project Work, Fieldwork
Workload (incl. contact hours, self-study hours)	Contact hours: 2 x 50 minutes per week Independent study and assignments: Estimated 3–4 hours/week Total ECTS equivalent: 2 credits (approx. 85–90 hours total workload)
Credit points	2 credits (SKS)
Required and recommended prerequisites for joining the module	None
Module objectives/intended learning outcomes	Upon completion of this course, students are expected to be able to: 1. Analyze the fundamental concepts of innovation in education and chemistry learning. 2. Identify current trends and challenges in chemistry education innovation. 3. Conduct a SWOT analysis on chemistry learning in schools and propose appropriate innovations. 4. Design, implement, and evaluate innovative learning strategies based on identified educational issues. 5. Communicate the implementation outcomes through academic presentations and publishable articles

Content	- Concepts of Innovation in Education and Chemistry Learning - Analysis of Student Learning Outcomes and Curriculum Relevance - Application of Computational Thinking in Educational Problem Solving - Development of Learning Object Materials (LOM) - Integration of ICT in Innovative Delivery Systems - Models of Non-Conventional Chemistry Learning - Field Implementation of Innovative Learning in Schools - Writing and Presenting Implementation Results in Scientific Articles																
Examination forms	Midterm Test, Final Exam, Assignments, Project-Based Learning and Presentations, Case Studies																
Study and examination requirements	Minimum attendance: 75% of lectures and full participation in fieldwork Evaluation Components: <table> <thead> <tr> <th>Assessment Type</th><th>Weight (%)</th></tr> </thead> <tbody> <tr> <td>Attendance</td><td>5</td></tr> <tr> <td>Assignments</td><td>10</td></tr> <tr> <td>Midterm Exam</td><td>15</td></tr> <tr> <td>Final Exam</td><td>20</td></tr> <tr> <td>Case Studies</td><td>15</td></tr> <tr> <td>Team-based Projects</td><td>35</td></tr> <tr> <td>Total</td><td>100</td></tr> </tbody> </table>	Assessment Type	Weight (%)	Attendance	5	Assignments	10	Midterm Exam	15	Final Exam	20	Case Studies	15	Team-based Projects	35	Total	100
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Reading list	1. Jagodzinski, P. & Wolski, R. (2015). Assessment of application technology of natural user interfaces... 2. Amin, D. I., & Ikhsan, J. (2021). Improving higher order thinking skills via semi second life. 3. Fitriyana, N., Wiyarsi, A., Ikhsan, J., Sugiyarto, K.H. (2021). Android-based-game and blended learning in chemistry... 4. Hawkins, I. & Phelps, A. J. (2013). Virtual laboratory vs. traditional laboratory... 5. Mel Silberman. (2002). Active Learning: 101 Strategi pembelajaran aktif. 6. Swasti Maharani et al. (2020). Computational Thinking: Pemecahan Masalah di Abad ke-21.																

Prepared by	Verified by:	Authorized by:
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