

Bachelor of Science Education
MODULE HANDBOOK

 Email : kimia@unima.ac.id

 Website : <https://kimia.ac.id>

Module designation	Laboratory Management Techniques (Chemistry Education)
Module level, if applicable	Bachelor/Undergraduate
Code, if applicable	30133542
Semester(s) in which the module is taught	3 rd Semester
Person responsible for the module	<i>Chaleb Paul Maanari, M.Si.</i>
Lecturer	<i>Prof. Dr. Feti Fatimah, M.Si.; Chaleb Paul Maanari, M.Si.</i>
Language	Indonesian
Relation to curriculum	<i>Compulsory Course (Program Core Course)</i>
Teaching methods	<i>Lecture, Group Discussion, Case-Based Learning, Problem-Solving Exercise, Simulation, Document Development Practice, Internal Audit Practice</i>
Workload	Total workload: 150–170 hours Contact hours: 48–50 hours (lectures, discussions, practices) Self-study: 100–120 hours (assignments, case studies, project work, exam preparation)
Credit points	2 Credits
Required and recommended prerequisites for joining the module	None
Module objectives/intended learning outcomes	<p>After completing this module, students are expected to:</p> <p>Knowledge: Understand the fundamental principles of laboratory management, including laboratory functions, quality standards (ISO/IEC 17025), safety management (K3L), chemical and equipment management, documentation systems, accreditation, and risk-based quality assurance.</p> <p>Skills: Apply laboratory management procedures such as developing SOPs, managing chemicals and instruments, conducting calibration and validation processes, performing internal audits, and preparing laboratory quality documents in accordance with ISO standards.</p> <p>Competences: Demonstrate responsibility, accuracy, and professionalism in laboratory administration; communicate effectively within laboratory management contexts; and apply quality management principles to support safe, efficient, and accredited laboratory operations.</p>

Content	<ol style="list-style-type: none"> 1. Introduction to laboratory management 2. History & development of ISO/IEC 17025 3. Quality management principles (7 quality principles) 4. Laboratory safety (K3L), MSDS, PPE 5. Equipment management: calibration, validation, maintenance 6. Chemical management: storage, labeling, waste handling 7. Laboratory documentation: SOPs, work instructions, reports 8. Risk management (ISO 31000) 9. Internal audit, accreditation (KAN, MRA) 10. Continual improvement 11. Personnel management: competence, training, task division 12. Customer handling & stakeholder relations 13. SOP and quality form development 14. Audit simulation & corrective action
Examination forms	<p>Quizzes, Assignments, Case Studies, Midterm Exam, Final Exam, Project/Document Development, Internal Audit Simulation</p>
Study and examination requirements	<ul style="list-style-type: none"> • Attendance \geq 75% • Completion of quizzes, assignments, and case studies • Mid-Semester Exam (CPMK 1–7) • Final Exam (CPMK 8–14) • Practice on document creation and internal audit • Active participation in LMS and class discussions
Reading list	<p>Main References:</p> <ul style="list-style-type: none"> • SNI ISO/IEC 17025:2017 – General requirements for the competence of testing and calibration laboratories. <p>Supporting References:</p> <ul style="list-style-type: none"> • Harmita (2014). Laboratory Management. UI Press. • Additional updated references related to ISO, K3L, risk management, and laboratory accreditation.