

## Module Handbook

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| Modul Name   | <b>Laboratory Organization</b>   |
| Module Level   | Bachelor   |
| Abbreviation, if applicable                              |  |
| Sub-heading, if applicable                               | -  |
| Course included in the module, if applicable             | -  |
| Semester/term  | 3 <sup>rd</sup> / second year  |
| Modul coordinator(s)                                     | Dr. Nuniek Herdyastuti, M.Si.  |
| Lecturer(s)  | Dr. Nuniek Herdyastuti, M.Si.<br>Dr. Utiya Azizah, M.Pd.<br>Dr. Mitarlis, S.Pd., M.Si.<br>Dr. Muchlis, M.Pd.<br>Dra. Nurul Hidayati, M.Si.   |
| Language   | Bahasa Indonesia   |
| Classification within the curriculum                     | Compulsory   |
| Teaching format/class hours per week during the semester | 3 hours lectures (50 min / hour)   |
| Workload   | 1 CU for bachelor degree equals to 3 workhours per week or 170 minutes (50' face to face learning, 60' structured learning, and 60' independent learning). In one semester, courses are conducted in 14 weeks (excluding mid and end-term exam). Thus, 1 CU equals to 39.67 workhours per semester. One CU equals to 1.587 ECTS.   |
| Credit point   | 3 SCU  |
| Requirement  | -  |
| Learning Outcomes  | <p><b>General Competence (knowledge):</b><br/>Student be able to apply logical, critical, and systematic thinking as well as innovative on the context of science and technology development or implementation related to laboratory organization that pay attention and apply humanities values.</p> <p><b>Spesific Competence :</b><br/>At the end of the lecture, students can master theoretical concepts (knowledge) about the functions and roles of chemical education laboratories, the basics of chemical laboratory development planning, and management of chemistry laboratory equipment and materials procurement as well as the principles of Occupational Health and Safety (K3) and laboratory management.</p> |

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| Content                     | Definition of laboratory organization and management, laboratory functions and roles, types of chemical laboratories. Planning and construction as well as Laboratory management, procurement and management of equipment and materials, management of hazardous and toxic materials (B3), Occupational Health and Safety (K3) in the Laboratory. Work safety management, fire extinguishing, solution making, and laboratory activity assessment.  |
| Study/exam achievements     | Students are considered to be competent and pass if at least gets core 68<br>Final score is calculated as follows: 20% participation, 30 assignment + 20% mid test + 30% final test   |
| Targeted learning outcomes: | <p>CLO 1 Students have ability to apply logical, critical, systematic and innovative thinking in the context of developing or implementing science and technology that pays attention to and applies humanities values.</p> <p>CLO 2 Students have ability to produce correct conclusions based on the results of identification that have been made and be able to apply skills in educating, researching, and managing in the administration of chemistry education.</p> <p>CLO 3 Students be able to master the theoretical concepts (knowledge) about the functions and roles of chemical education laboratories, the basics of chemical laboratory development planning, and management of chemical laboratory equipment and materials procurement as well as the principles of K3 (Occupational Health and Safety) and laboratory management.</p> <p>CLO 4 Students have a responsible attitude by applying an understanding of laboratory organization material in carrying out lectures and daily practicum and assignments on the field in the future.</p> |
| Content:                    | <ol style="list-style-type: none"> <li>1. Introduction: Definition of organization and management, the nature of learning science, laboratory functions and roles, types of laboratories.</li> <li>2. Planning, development and laboratory management.</li> <li>3. Procurement and management of equipment and materials,</li> <li>4. Works safety and its management in the laboratory,</li> <li>5. Handling of hazardous and toxic materials (B3),</li> <li>6. Fire and how to handle it,</li> </ol>  |

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|                            | <p>7. Preparation of solutions,<br/>8. Assessment of activities in the laboratory.</p>   |
| Study / exam achievements: | <p>Students are considered to be competent and pass if at least get 55.<br/>Final score is calculated as follows: 20% participation + 30% assignment + 20% middle exam (UTS) &amp; 30% final exam (UAS)</p> <p>Table index of graduation:</p> <ul style="list-style-type: none"> <li>• A = 4 (85 ≤ - &lt; 100)</li> <li>• A- = 3,75 (80 ≤ - &lt; 85)</li> <li>• B+ = 3,5 (75 ≤ - &lt; 80)</li> <li>• B = 3 (70 ≤ - &lt; 75)</li> <li>• B- = 2,75 (65 ≤ - &lt; 75)</li> <li>• C+ = 2,5 (60 ≤ - &lt; 65)</li> <li>• C = 2 (55 ≤ - &lt; 60)</li> <li>• D = 1 (40 ≤ - &lt; 55)</li> <li>• E = 0 (0 ≤ - &lt; 40)</li> </ul> |
| Media:                     | Computer, LCD, White board, chemicals and equipment in laboratory for doing practicum  |
| Learning Methods           | Individuals assignment, group assignment, discussion, presentation, and practicum  |
| Literature:                | <ol style="list-style-type: none"> <li>1. Mitarlis, Azizah U, Amaria, 2016. <i>Organisasi dan Manajemen Laboratorium Pendidikan Kimia</i>. Surabaya: Unesa University Press.</li> <li>2. Cahyono, A.B. 2004. <i>Keselamatan Kerja Bahan Kimia di Industri</i>. Yogyakarta: Gajahmada University Press.</li> <li>3. Kumpulan Makalah Seminar. 2003. <i>Safety and Waste Analysis in the Laboratory</i>. PT. Merck Tbk. Chemical Division Surabaya</li> </ol>  |
| Note                       | <p>Laboratory Organization subject covers the activity of learning concept in class, practicum in laboratory, assignment and presentation.</p> <p>Total ECTS = (total hours workload x 50 minutes/ 60 minutes).</p>  |