

Module Description

MPK 2207 Inorganic Compound Synthesis Laboratory

Module Name	Inorganic Compound Synthesis Laboratory
Module level, if applicable	Undergraduate Programme
Code, if applicable	MPK 2207
Subtitle, if applicable	-
Course, if applicable	-
Semester(s) in which the module is taught	4 th Semester
Module coordinator(s):	Adhitiyawarman, S.Si., M.Si., Ph.D.
Lecturer	Imelda H. Silalahi, S.Si, M.Si, Ph.D Adhitiyawarman, S.Si., M.Si., Ph.D. Dr. Anis Shofiyani, S.Si., M.Si. Dr. Nelly Wahyuni, S.Si., M.Si.
Language	Bahasa Indonesia
Relation to curriculum	<i>Compulsory</i> Courses for the undergraduate programme in Chemistry
Type of teaching, contact hours	• Laboratory work: 6 meetings • Self-study: 6 meetings • Tutorial/assistance: 3 meetings • Examination: 1 meeting
Workload	<i>(Estimated)</i> <i>Contact hours (laboratory work): 6 x 5,66 hours = 33,96 hours</i> <i>Self-study, including examination preparation, specified in hours: 6 x 5,66 hours = 33,96 hours</i> <i>Tutorial/assistance: 3 x 5,66 hours = 16,98 hours</i> <i>Examination: 1 x 5,66 hours = 5,66 hours</i> <i>Total workload: 90,56 hours per semester</i>
Credit points	2 (3.34 ECTS)
Requirements according to the examination regulations	Registered in this course Required 100 % attendance in this course
Learning goals/competencies:	Intended Learning Outcomes (ILO) After taking this course, students will be able to:

	- LO-1 - LO-3 - LO-5														
Module objectives	1. Students are able to apply the procedure synthesis of inorganic compounds in the Laboratory.														
Content:	- Synthesis and Purification of Potassium Iodate - Synthesis of <i>cis</i>- and <i>trans</i>- Potassium Dioxalatodiaquochromat(III) - Synthesis of Activated Carbon from Biomass - Synthesis of Potassium trioxalatoferat(III) - Synthesis of Zeolite - Synthesis and Purification of Alum from $\text{Al}(\text{OH})_3$ and Water Purification's Residue														
Attribute Soft skill:	Discipline, collaboration, responsibility, laboratory skills, and scientific report writing.														
Recommended prerequisites	-														
Study and examination requirements and forms of examination	Students are considered to be competent and pass if they get at least 50% of the maximum final grade. The final grade (NA) is calculated based on the following : <table border="1"> <thead> <tr> <th>Assessment Components</th><th>Percentage Contribution</th></tr> </thead> <tbody> <tr> <td>Pre-test</td><td>10%</td></tr> <tr> <td>Journal</td><td>15%</td></tr> <tr> <td>Activity</td><td>30 %</td></tr> <tr> <td>Report</td><td>25%</td></tr> <tr> <td>Exam</td><td>20%</td></tr> <tr> <td>Total</td><td>100%</td></tr> </tbody> </table>	Assessment Components	Percentage Contribution	Pre-test	10%	Journal	15%	Activity	30 %	Report	25%	Exam	20%	Total	100%
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Activity	30 %														
Report	25%														
Exam	20%														
Total	100%														
Learning Methods	Practicum, Assistance														
Media employed	Laboratory and laboratory equipment, LCD projector														
Reading list	Muniandy G, Thiruchelvi P, Lee, KT, Sudesh, K, 2022, Activated Carbon from Biomass Waste Precursors: Factors Affecting Production and Adsorption Mechanism, Chemosphere, 294, 133764.														

	2. Malini K, Selvakumar, Kumar NS, 2023, Activated Carbon from Biomass: Preparation, Factors Improving Basicity and Surface Properties for Enhanced CO₂ Capture Capacity – A Review, Journal of CO₂ Utilisation, 67, 102318, 2023. 3. Wong S, Ngadi N, Inuwa IM, Hassan O, 2018, Recent Advances in Applications of Activated Carbon from Biowaste for Wastewater Treatment: a Short Review. J. Clean. Prod. 175, 361–375. 4. Mohamed AR, Lee KT, Noor NM, Zainudin NF, 2005, Oil Palm Ash/Ca(OH)₂/CaSO₄ Absorbent for Flue Gas Desulfurization. Chem. Eng. Technol. Ind. Chem. Equipment-Process Eng. 28, 939–945. 5. Gurrath M, Kuretzky T, Boehm HP, Okhlopkova LB, Lisitsyn AS, Likholobov VA, 2000, Palladium Catalysts on Activated Carbon Supports: Influence of Reduction Temperature, Origin of The Support and Pretreatments of the Carbon Surface, Carbon, 38, 1241–1255. 6. Sun W, et al, 2016, Hemp-Derived Activated Carbons for Supercapacitors, Carbon, 103, 181. 7. Zaarour, M et al, 2014, Progress in Zeolit Synthesis Promotes Advanced Applications, Microporous and Mesoporous Materials, 189, pp. 11–21. 8. Svehla G, 1985, Vogel : Buku Teks Analisis Anorganik Kualitatif Makro dan Semikro (Bagian 1). edisi ke 5. Jakarta: PT. Kalman Media Pusaka.
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