



UNIVERSITAS NEGERI JAKARTA
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
CHEMISTRY STUDY PROGRAM

Jl. Rawamangun Muka, RT 11/RW 14, Rawamangun, Pulo Gadung,
 East Jakarta City, Special Capital Region of Jakarta 13220
 Phone/Fax: (021) 4894909, E-mail: kimia@unj.ac.id, <http://fmipa.unj.ac.id/kimia/>

Bachelor in Chemistry

MODULE HANDBOOK

Module name:	Practicum of Separation Chemistry and Instrumental				
Module level, if applicable:	Undergraduate				
Code:	33250292				
Sub-heading, if applicable:	-				
Classes, if applicable:	-				
Semester:	5 th				
Module coordinator:	Dr. Fera Kurniadewi, M.Si.				
Lecturer(s):	1. Prof. Dr. Erdawati, M.Sc. 2. Dra. Tritiyatma H., M.Si. 3. Yussi Pratiwi, M.Sc.				
Language:	Bahasa Indonesia (Indonesian Language)				
Classification within the curriculum:	Compulsory Courses in the third year (5 th semester) Bachelor Degree				
Class Size	40				
Type of Teaching	In class activity : Team Based Project and Project based Learning Structured activity : Group Discussion using WorkSheet Independent activity : Individual task				
Teaching format / class hours per week	Learning activity can be carried out in the form of Laboratory activity: 340 minutes per week - Safety induction: 1 time (MSDS, safety equipment, waste disposal) - Preparation: 1 time (chemical preparation and experiment equipment) - Laboratory work: 10 times (10 project topics, i.e pretest, practicum activity, and writing report) Discussion: 340 minutes for 2 time (presentation and discussion of practical results) Examination: 340 minutes for 2 times (mid and final examination)				
Workload:	Type	CU	Laboratory Activity	Discussion	Examination
	P	2	73,66 h 2,44 ECTS	5,66 h 0,188 ECTS	11,33 h 0,372 ECTS

Credit points:	2 CU (3 ECTS)																							
Prerequisite course(s):	Basic Chemistry Practicum, Qualitative and Quantitative Analysis Chemistry Practicum																							
Course Outcomes:	<p>After taking this course the students have ability to:</p> <p>CLO 1. Apply the concept of boiling point difference to separate a compound from a sample</p> <p>CLO 2. Apply the concept of difference in solubility to separate a compound from a sample</p> <p>CLO 3. Applying separation methods based on the concept of differences in solubility and spectrometry on complex compounds</p> <p>CLO 4. Apply electrochemical concepts to separate an ion</p> <p>CLO 5. Classifying planar chromatographic methods</p> <p>CLO 6. Applying the concept of metal extraction method</p> <p>CLO 7. Spectrophotometric analysis of two-component mixtures</p> <p>CLO 8. Applying the UV-Vis spectrophotometer method for the analysis of substance content</p> <p>CLO 9. Applying pH meter in potentiometric titration</p> <p>CLO 10. Applying the conductometric method</p> <p>CLO 11. Perform acid-base titration in non-aqua media</p>																							
Content:	<ol style="list-style-type: none"> 1. Distillation 2. Extraction 3. Electrolysis 4. Planar Chromatography 5. Determination of distribution coefficient and metal extraction 6. Analysis of two-component mixtures with UV-Vis Spectrophotometer 7. Determination concentration of benzoic acid with UV-Vis Spectrophotometer 8. pHmetric method 9. Conductometric method 10. Acid-base titration method in non-aqua media 																							
Study/exam achievements:	<p>Examinations are conducted as Unit Tests. There are two-unit tests, each covers 4-5 chapters. The final marks are derived from unit tests (70%) and structured tasks (30%).</p> <table border="1"> <thead> <tr> <th>No</th> <th>CLO</th> <th>Assesment Object</th> <th>Assessment Techniques</th> <th>Weight</th> </tr> </thead> <tbody> <tr> <td rowspan="4">1.</td> <td rowspan="4">CLO 1-11</td> <td>a. Pretest</td> <td rowspan="4">Written test</td> <td>20%</td> </tr> <tr> <td>b. Report</td> <td>30%</td> </tr> <tr> <td>c. Final Assessment Practicum</td> <td>40%</td> </tr> <tr> <td>d. Participation</td> <td>10%</td> </tr> <tr> <td colspan="3">Total</td> <td>100%</td> </tr> </tbody> </table>				No	CLO	Assesment Object	Assessment Techniques	Weight	1.	CLO 1-11	a. Pretest	Written test	20%	b. Report	30%	c. Final Assessment Practicum	40%	d. Participation	10%	Total			100%
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		d. Participation		10%																				
Total			100%																					
Media	Power point presentation, Laptop, Whiteboard, Zoom, Google Classroom, Ms. Teams, Report Result.																							

Literatures	<ol style="list-style-type: none"> 1. Gallen W, Ewing. 1985. Instrumental Method For Chemical Analysis. McGraw Hill Higher Education 2. Lane, Alam. 2019. Separation Process Essentials. New York. CRC Press 3. Robinson W, James. 2021. Instrumental Analytical Chemistry. New York. CRC Press
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PLO and CO mapping

	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11	PLO 12	PLO 13	PLO 14
CO1			v					v		v				
CO2			v					v		v				
CO3			v					v		v				
CO4			v					v		v				
CO5			v					v		v				
CO6			v					v		v				
CO7			v					v		v				
CO8			v					v		v				
CO9			v					v		v				
CO 10			v					v		v				
CO 11			v					v		v				