



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

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Bachelor in Chemistry

MODULE HANDBOOK

Module name:	Practicum of Qualitative and Quantitative Analytical Chemistry
Module level, if applicable:	Undergraduate
Code:	33250222
Sub-heading, if applicable:	-
Classes, if applicable:	-
Semester:	3 rd
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 second year (3 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 <ul style="list-style-type: none">- Safety induction: 1 time (MSDS, safety equipment, waste disposal)- Preparation: 2 time (chemical preparation and experiment equipment)- Laboratory work: 9 times (9 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																										
	CU	Laboratory Activity	Discussion	Type	Examination																					
	2	73,66 h 2,44 ECTS	5,66 h 0,188 ECTS	P	11,33 h 0,372 ECTS																					
Prerequisite course(s):	2 CU (3 ECTS)																									
Course Outcomes:	<p>After taking this course the students have ability to:</p> <p>CLO 1. Able to identify Group I Cations CLO 2. Able to identify Group II Cations CLO 3. Able to identify Group III Cations CLO 4. Able to identify Group IV Cations CLO 5. Able to identify Group Vs Cations and Anions CLO 6. Able to determine concentration of a substance with a standardized standard solution (acidimetry) CLO 7. Able to determine concentration of Cu^{2+}, Cl^- and OCl^- (Iodometry) CLO 8. Able to perform Permanganometric titration CLO 9. Able to perform Complexometric titration CLO 10. Able to determine concentration Fe (II) with Gravimetric Method</p>																									
Content:	<ol style="list-style-type: none"> 1. Preliminary analysis 2. Reaction identification and analysis of cations 3. Reaction identification and analysis of anions 4. Acidimetry 5. Acid Alkalimetry 6. Iodometric 7. Pemanganometric 8. Complexometric 9. Gravimetric 																									
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>CO</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 1-10</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</td> <td>40%</td> </tr> <tr> <td>d. Participation</td> <td>10%</td> </tr> <tr> <td colspan="4">Total</td> <td>100%</td> </tr> </tbody> </table>					No	CO	Assesment Object	Assessment Techniques	Weight	1	CLO 1-10	a. Pretest	Written test	20%	b. Report	30%	c. Final assessment	40%	d. Participation	10%	Total				100%
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		c. Final assessment		40%																						
		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. Beran, J.A (2010), Laboratory manual for Principles of General Chemistry, 10th ed, John Wiley&ons, New York 2. Hill, R.H. & Finster, D.C., 2010, Laboratory Safety for Chemistry Students, New Jersey: John Wiley & Sons 3. Skoog, D.A., West, D.M., and Holler, F.J., 2004. Fundamentals of Analytical Chemistry. 8th edition. New York: Saunders College Publishing 4. Harvey, D. 2000, Modern Analytical Chemistry, International ed.,Mc.Graw Hill,Boston.
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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
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		
CO10			V			V				V		