

Module Handbook

Module Name	Analytical Chemistry Lab Work				
Module Level	Higher Diploma				
Code, if applicable	VKD 214				
Subtitle, if applicable	-				
Courses, if applicable	-				
Semester(s) in which the module is taught	2 nd semester				
Person responsible for the module	Thorikul Huda, S.Si., M.Sc. Yuli Rohyami, S.Si., M.Sc.				
Lecturer	Thorikul Huda, S.Si., M.Sc. Yuli Rohyami, S.Si., M.Sc.				
Language	Bahasa Indonesia				
Relation to curriculum	Compulsory				
Type of teaching, contact hours	Laboratory Practice (teaching, preparation, lab work, data analysis and report) and Exams: 11.3 hours x 16 week				
Workload	Total Workload	181 hours; 4 CU			
		Face to face teaching	Laboratory preparation	Laboratory work	Data analysis and report
	Hours	22	22	99	22
Credit Points	4 SCU				
Requirements according to the examination regulations	100% of requirements attendance in laboratory activities				
Recommended prerequisites	Laboratory work of lab technique				
Module objectives/intended learning outcomes	<p>PLO 7: Students can select and carry out chemical analysis methods and operate instruments by applying the principles of chemical occupational health and safety</p> <p>Subject LO:</p> <p>Students are able to determine and carry out sample preparation procedure of qualitative and quantitative in chemical analysis</p> <p>Students are able to build teamwork in carrying out laboratory procedures</p> <p>Students are able to apply principles and build a culture of chemical safety and health</p> <p>Students are able to apply errors in qualitative and quantitative analysis</p> <p>Students are able to determine types of anions and cations in the samples</p> <p>Students are able to apply the rule of significant number in test data analysis</p> <p>Students are able to gravimetric analysis</p> <p>Students are able to volumetric analysis</p> <p>Students are able to analyze data and report test results in writing and orally</p>				
Content	1. Preparation of test samples				

	<ol style="list-style-type: none"> 2. Principles and techniques of qualitative analysis of anions and cations 3. Principles and techniques of gravimetric and volumetric 4. Interpretation of test results data qualitatively and quantitatively
Study and examination requirements and forms of examination	Assessment lab work (60%), team work (10%), report (20%), safety lab (10%)
Media employed	Google classroom, youtube, zoom meeting, google form, google doc
Reading list	<ol style="list-style-type: none"> 1. Day, Jr., R.A. and Underwood A.L., 2002. <i>Quantitative Analysis</i>. Translated by: Aloysius Pudjaatmaka. Erlangga: Jakarta 2. Harvey, D., 2000. <i>Modern Analytical Chemistry</i>. 1st Edition, Mc Graw Hill : Boston 3. Fifield, F.W. and Kealey, D., 2000. <i>Principles and Practice of Analytical Chemistry</i>. Wiley-Blackwell, United Kingdom 4. Kennedy, J.H., 1990. <i>Analytical Chemistry: Principle</i>. Saunders College Publishing, New York 5. Khopkar, S., M., 2004. <i>Basic Concepts Of Analytical Chemistry 2nd Edition</i>, New Age International (P) Ltd., New Delhi, India 6. Mendham, J., Denney R.C., Barnes J. D., Thomas M.J.K., 2009. <i>Vogel's Quantitative Chemical Analysis (6th Edition)</i>. Pearson education 7. Skoog D.A., West D.M., Holler F.J., 1996. <i>Fundamentals of Analytical Chemistry</i>. Saunders College Pub 8. Vogel, 1990. <i>Qualitatif Inorganic Analysis</i>. Translated by: L Setiono and A. Hadyana Pudjaatmaka, 5th PT Kalman Media Pustaka: Jakarta 9. Rohyami, Y., 2020, Guidebook of Analytical Chemistry Practices, Chemical Analysis Study Program, Yogyakarta