

Module Handbook

Module Name	Analytical Chemistry Lab Work
Module Level	Higher Diploma
Code, if applicable	AKD 216
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 work: 340 min/week
Workload	70 minutes doing worksheet and pretest preparation, 150 minutes of laboratory work, 120 minutes group discussion, searching the literature and writing report, 14 weeks per semester, and a total of 4760 minutes (79.3 hours per semester) \approx 2.8 ECTS *
Credit Points	2 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	<ol style="list-style-type: none"> 1. Preparation of test samples 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	<p>Table Value Graduation</p> <table> <tr><td>A</td><td>80</td></tr> <tr><td>A-</td><td>77.5</td></tr> <tr><td>A/B</td><td>75</td></tr> <tr><td>B+</td><td>72.5</td></tr> <tr><td>B</td><td>70</td></tr> <tr><td>B-</td><td>67.5</td></tr> <tr><td>B/C</td><td>65</td></tr> <tr><td>C+</td><td>62.5</td></tr> <tr><td>C</td><td>60</td></tr> <tr><td>C-</td><td>55</td></tr> <tr><td>C/D</td><td>50</td></tr> <tr><td>D+</td><td>45</td></tr> <tr><td>D</td><td>40</td></tr> <tr><td>E</td><td>0</td></tr> </table>	A	80	A-	77.5	A/B	75	B+	72.5	B	70	B-	67.5	B/C	65	C+	62.5	C	60	C-	55	C/D	50	D+	45	D	40	E	0
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E	0																												
Media employed	Google classroom, youtube, zoom meeting, google form, google doc																												
Reading list	<ol style="list-style-type: none"> Day, Jr., R.A. and Underwood A.L., 2002. <i>Quantitative Analysis</i>. Translated by: Aloysius Pudjaatmaka. Erlangga: Jakarta Harvey, D., 2000. <i>Modern Analytical Chemistry</i>. 1st Edition, Mc Graw Hill : Boston Fifield, F.W. and Kealey, D., 2000. <i>Principles and Practice of Analytical Chemistry</i>. Wiley-Blackwell, United Kingdom Kennedy, J.H., 1990. <i>Analytical Chemistry: Principle</i>. Saunders College Publishing, New York Khopkar, S., M., 2004. <i>Basic Concepts Of Analytical Chemistry 2nd Edition</i>, New Age International (P) Ltd., New Delhi, India Mendham, J., Denney R.C., Barnes J. D., Thomas M.J.K., 2009. <i>Vogel's Quantitative Chemical Analysis (6th Edition)</i>. Pearson education Skoog D.A., West D.M., Holler F.J., 1996. <i>Fundamentals of Analytical Chemistry</i>. Saunders College Pub Vogel, 1990. <i>Qualitatif Inorganic Analysis</i>. Translated by: L Setiono and A. Hadyana Pudjaatmaka, 5th PT Kalman Media Pustaka: Jakarta Rohyami, Y., 2020, Guidebook of Analytical Chemistry Practices, Chemical Analysis Study Program, Yogyakarta 																												