

Module Handbook

Modul Name	Analytical Chemistry I
Module Level	Bachelor
Abbreviation, if applicable	KIA103
Sub-heading, if applicable	-
Course included in the module, if applicable	-
Semester/term	3 rd /second year
Modul coordinator(s)	Dra. Usreg Sri Handajani, M.Si.
Lecturer(s)	Dr. MujiHarsini, M.Si., Dra. AningPurwaningsih, M.Si., YanuardiRaharjo, S.Si., M.Sc.
Language	Bahasa Indonesia
Classification within the curriculum	Compulsary Course
Teaching format/class hours per week during the semester	3 hours lectures (50 min / hour)
Workload	3hours lecturers, 3hours individual study, 3 hours structured activities, 13 weeks per semester, and total 117 hours a semester ~ 3.9 ECTS *
Credit point	3
Requirement	General Chemistry II (KID103)
Learning Outcomes	<p>General Competence (Knowledge): Can decipher how the separation of inorganic substances based on acid-base theory Bronsted - Lowry, pH, precipitation reaction that includes solubility and solubility product, reaction formation of complex compounds, redox reactions and chromatography paper.</p> <p>Specific Competence:</p> <ol style="list-style-type: none"> 1. Declare the composition of substances and the changes that occur from chemical reactions. 2. Indicates the number of valence and oxidation of inorganic compounds, properties of solution, precipitation reaction by experimental results, a systematic qualitative inorganic analysis 3. Distinguishing the electrolyte and non-electrolyte solution 4. Calculate the pH of a solution, solubility and solubility product 5. Indicate the sediment that settles in advance as sulfide and hydroxide 6. Describe the reaction which occurs between the cation / anion with reagents complex, oxidation-reduction reaction techniques qualitative inorganic analysis wet method, deposition, gas formation, discoloration, the order of dissolving the sample, how the separation of cations by way of H₂S, how to remove anion bullies, the division of anion groups, how to manufacture soda extract for anion analysis

	<p>7. Make way separation scheme cation group I, IIA, IIB, IIIA, IIIB, IV and V</p> <p>8. Identify cations group I, IIA, IIB, IIIA, IIIB, IV, and V, anions are oxidizing agents, reducing agents, group BaCl₂ and AgNO₃</p>																																
Atribut softskill	Discipline/on time, confidence																																
Content	This course discuss the basic theory of qualitative analysis which includes chemical formula and equation, inorganic solution, and the application of Bronsted – Lowry acid-base theory, pH solution, precipitation reactions, solubility and solubility product constant, formation reaction of complex compounds, redox reaction and thin-layer chromatography.																																
Learning Methods	Lecture, quiz, assignment, discussion																																
Study/exam achievements	<p>In determining the final value will be used as follows.</p> <p>Assignment twice @ 10% = 20 % Softskills = 10 % Middle exam (UTS) = 35 % Final exam (UAS)= 35% + Total = 100 %</p> <p>Skor, nilai huruf dan bobot penilaian hasil belajar</p> <table border="1"> <thead> <tr> <th>No.</th> <th>Score</th> <th>Alphabetic Score</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>75,00-100,00</td> <td>A</td> <td>4</td> </tr> <tr> <td>2.</td> <td>70,00-74,99</td> <td>AB</td> <td>3,5</td> </tr> <tr> <td>3.</td> <td>65,00-69,99</td> <td>B</td> <td>3</td> </tr> <tr> <td>4.</td> <td>60,00-64,99</td> <td>BC</td> <td>2,5</td> </tr> <tr> <td>5.</td> <td>55,00-59,99</td> <td>C</td> <td>2</td> </tr> <tr> <td>6.</td> <td>40,00-54,99</td> <td>D</td> <td>1</td> </tr> <tr> <td>7.</td> <td>0-39,99</td> <td>E</td> <td>0</td> </tr> </tbody> </table> <p>Considered pass if get ≥ 55</p>	No.	Score	Alphabetic Score	Value	1.	75,00-100,00	A	4	2.	70,00-74,99	AB	3,5	3.	65,00-69,99	B	3	4.	60,00-64,99	BC	2,5	5.	55,00-59,99	C	2	6.	40,00-54,99	D	1	7.	0-39,99	E	0
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Forms of media	LCD, laptop/computer, White board																																
Literature	<p>1. Vogel, A.I., 1979, <i>Textbook of Macro and Semimicro Qualitative Inorganic Analysis</i>, 5th Ed, Longman Group, Ltd., London</p> <p>2. Whitten, K.D., and Dari, R.E., 1992, <i>General Chemistry and Qualitative Analysis</i>, 4th Ed, Saunders, Publ., Orlando</p>																																
Note	<p>*Total ECTS = {(total hours workload x 50 min) / 60 min } / 25 hours</p> <p>Each ECTS is equals with 25 hours</p>																																