

Module Handbook

Modul Name	Analytical Chemistry II
Module Level	Bachelor
Abbreviation, if applicable	KIA202
Sub-heading, if applicable	-
Course included in the module, if applicable	-
Semester/term	4 th /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	Compulsory Course
Teaching format/class hours per week during the semester	3 hours lectures (50 min/ hour)
Workload	3 hours 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	Analytical Chemistry I
Learning Outcomes	<p>General Competence (Knowledge): Student can understand the basics of quantitative analysis for inorganic substances</p> <p>Spesific Competence:</p> <ol style="list-style-type: none"> 1. Explains operational errors, instruments and reagents, as well as comparable additive method, the reaction for the titration permanganometry, the principle of determining the levels of substances in bromatometry, bichromatometry 2. Determining the concentration of substances in solution in the titration 3. Calculate the concentration of metal ions with complexing with EDTA titration method, levels of substance with a non-aqueous titration method, the levels of halide ions by titration argentometry 4. Connect the pH of the solution to the volume of titrant in the titration curve, the electrode potential solution to the volume of titrant in the titration curve in redox titration 5. Comparing the principle of the assay substances by iodometry, iodimetry and iodatometry 6. Calculating levels of substance with a redox method, gravimetricand electrogravimetri
Attribute softskills	Discipline/on time, confidence
Content	Mistake theory; basic theory and stoichiometry in quantitative analysis; gravimetry; volumetry based on neutralization, redoxs, precipitation, complex formation reactions; non aqueous titration, potentiometry: electrogravimetry. Analysis of mixture compounds.

Learning Methods	Lecture, Quiz, Discussion, Assignment																																
Study/exam achievements	<p>Final score is calculated as follows</p> <p style="text-align: center;"> Structured activities (twice) @ 10% = 20% Middle exam (UTS) = 40% Final exam (UAS) = 40% + Total = 100 % </p> <p>Score, Alphabetic score and value</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <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 ≥ 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																																
Learning Methods	Lectures, discussion, assignment																																
Literatur	<ol style="list-style-type: none"> 1. Mendham, J., Denney, R.C., Barnes, J.D., Thomas, M.J.K., 2000, <i>Vogel's Textbook of Quantitative Chemical Analysis</i>, 6th ed., Pearson Education Limited, England. 2. Christian, G.D., 1980, <i>Analysis Chemistry</i>, John Wiley & Sons, Inc., New York. 3. Pecsok, R.L., Shields, L.D., Cairns, T., Mc William, I.G., 1985, <i>Modern Methods of Chemical Analysis</i>, John Wiley & Sons, Inc., New York. 4. Underwood, A.L., Day, R.A., 2001, <i>Quantitative Analysis</i>, Prentice Hall, New Delhi. 5. Harijadi, W., 1986, <i>Ilmu Kimia Analitik Dasar</i>, Penerbit PT Gramedia, Jakarta. 6. Hadjiioanou, T.P., Christian, G.D., Efstathiou, C.E., Nikolelis, D.P., 1988, <i>Problem Solving in Analytical Chemistry</i>, pergamon Press, Oxford. 																																
Note	<p>*Total ECTS = {(total hours workload x 50 min) / 60 min} / 25 hours</p> <p>Each ECTS is equals with 25 hours</p>																																