



UNIVERSITAS NEGERI YOGYAKARTA
 FACULTY OF MATHEMATICS AND NATURAL SCIENCES
 DEPARTMENT OF CHEMISTRY EDUCATION
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Bachelor of Education in Chemistry

MODULE HANDBOOK

Module name:	Instrument Analysis Chemistry
Module level, if applicable:	Undergraduate
Code:	KIP 6303
Sub-heading, if applicable:	-
Classes, if applicable:	2
Semester:	4 th
Module coordinator:	Sunarto, M.Si.
Lecturer(s):	Dra. Susila Kristianingrum, M.Si.; Annisa Fillaeli, S.Si.,M.Si.; Prof. Dr. Suyanta, M.Si.; Sulistyani, S.Si.,M.Si.
Language:	Bahasa Indonesia and English
Classification within the curriculum:	Compulsory Subject
Teaching format / class hours per week during the semester:	<ul style="list-style-type: none"> • Lectures: 100 minutes lectures, 120 minutes structured activities and 120 minutes individual study per week • Laboratory Work: 170 minutes includes the laboratory work and it's report per week.
Workload:	Total workload of the activity is 136 hours per semester which consist of 100 minutes lectures, 120 minutes structured activities, 120 minutes individual study per week, and 170 minutes include laboratory work and it's report.
Credit points:	2SKS (3.28 ECTS) lectures, and 1SKS (1,64 ECTS) laboratory Work
Prerequisites course(s):	- Chemical Separation Method
Course outcomes:	<p>After taking this course, the students are expected to be able to:</p> <p>CO1. explain the basic concepts and instrumentation of colorimetric analysis, spectroscopy (UV-VIS, FTIR, MS, NMR and SSA),</p> <p>CO2. make a calibration curve in the analysis with a UV-VIS spectrophotometer,</p> <p>CO3. conduct quantitative analysis with UV-VIS and SSA spectrophotometers,</p> <p>CO4. calculate m / e ion molecules, and explain the interference that occurs in SSA</p> <p>CO5. collaborate effectively in conducting colorimetric and spectroscopic analysis (UV-Vis, FTIR, Mass, NMR, and SSA)</p>
Content:	This course covers theory and practice in the laboratory which includes the scope of instrument chemistry, colorimetry, and various modern analytical methods such as UV-VIS spectrophotometry, FTIR, Mass, NMR, and SSA
Study / exam achievements:	Attitude assessment is carried out at each meeting by observation and/or self-assessment techniques using the assumption that basically every student has a good attitude. The student is marked very good or not good attitude if they

	<p>show it significantly compared to other students in general. The result of attitude assessment is not taken into account in the final grades, but as one of the requirements to pass the course. Students will pass from this course if at least have a good attitude.</p> <p>The final mark will be weight as follow:</p> <table border="1"> <thead> <tr> <th>No</th> <th>CO</th> <th>Assessment Object</th> <th>Assessment Technique</th> <th>Weight</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>CO1, CO2, CO3, CO4, CO5.</td> <td>Participation Assignment Lab Work Mid-term exam Final Exam</td> <td>Presentation / written test</td> <td>20% 5% 30% 20% 25%</td> </tr> <tr> <td colspan="4">Total</td> <td>100%</td> </tr> </tbody> </table>	No	CO	Assessment Object	Assessment Technique	Weight	1	CO1, CO2, CO3, CO4, CO5.	Participation Assignment Lab Work Mid-term exam Final Exam	Presentation / written test	20% 5% 30% 20% 25%	Total				100%
No	CO	Assessment Object	Assessment Technique	Weight												
1	CO1, CO2, CO3, CO4, CO5.	Participation Assignment Lab Work Mid-term exam Final Exam	Presentation / written test	20% 5% 30% 20% 25%												
Total				100%												
Forms of media:	LCD Projector, Laptop/Computer, Mobile Phone															
References:	<ul style="list-style-type: none"> Susila Kristianingrum, Suyanta, dan Siti Sulastrri. 2009. <i>Diktat Kuliah Kimia Analisis Instrumental Bagian Spektroskopi</i>. Yogyakarta: FMIPA UNY. Regina Tutik, dkk. 2010. <i>Petunjuk Praktikum Kimia Analisis Instrumen</i>. Yogyakarta: FMIPA UNY. Douglas, A., Skoog, F., Holler, J. & Crouch, S. R. 2017. <i>Principles of Instrumental Analysis</i>. Cengage Learning. Srivastava, A. K. & Jain, P.C. 2009. <i>Instrumental Approach to Chemical Analysis</i>: S. Chand & Company Ltd. Kealey, D. and Haine, P.J. 2002. <i>Analytical Chemistry</i>. Oxford: BIOS Scientific Publishers Ltd. Cantle, J.E. 1982. <i>Atomic Absorption Spectrometry</i>. New York : Elsevier Sc. Khopkar, S.M. 1990. <i>Konsep Dasar Kimia Analitik</i>. Jakarta: UI Press. Pecksock, R.I. & Shield. 1976. <i>Modern Methods of Chemical Analysis</i>. New York: John Wiley & Sons. Skoog, Holler & Nieman. 1998. <i>Principles of Instrumental Analysis 5^{ed}</i>. Philadelphia: Saunders College Pub. Skoog & West. 1985. <i>Instrumental Methods of Chemical Analysis</i>. Philadelphia: Saunders College Pub. Sumber Informasi dari internet dan Jurnal terkait dengan pokok bahasan. 															

PLO and CO mapping

	PLO					
	Attitude		Knowledge	Specific Skill	General Skill	
	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6
CO1			√			
CO2			√			
CO3				√		

CO4				√		
CO5						√