



MINISTRY OF EDUCATION, CULTURE, RESEARCH,  
AND TECHNOLOGY  
UNIVERSITAS NEGERI SURABAYA  
FACULTY OF MATHEMATICS AND NATURAL SCIENCES  
DEPARTMENT OF CHEMISTRY

Ketintang Campus, Jalan Ketintang, Surabaya 60231

Telephone : +6231- 8298761, email: [kimia@unesa.ac.id](mailto:kimia@unesa.ac.id), Laman : <http://kimia.fmipa.unesa.ac.id>

## MODULE HANDBOOK

Module Name:	Quantitative Analytical Chemistry
Module level:	Bachelor
Course Code :	8420403098
Abbreviation, if applicable:	-
Course included in the module, if applicable:	-
Semester/term:	3 <sup>rd</sup> /Second Year
Module coordinator(s):	Prof. Dr. Sri Poedjiastoeti, M.Si.
Lecturer(s):	1. Prof. Dr. Sri Poedjiastoeti, M.Si. 2. Dr. Utiya Azizah M.Pd. 3. Dr. Pirim Setiarso, M.Pd. 4. Dr. Nita Kusumawati, M.Sc. 5. Rusmini S.Pd, M.Si.
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 x 50 minutes lectures, 3 x 60 minutes structured activity, 3 x 60 minutes individual activity, 14 weeks per semester, 119 total hours per semester ~ 4.77 ECTS**
Credit unit:	3 CU = 3 x 1,59 = 4.77 ECTS
Prerequisite course(s):	Basic chemistry 2
Targeted learning outcomes:	<b>General Competence (knowledge):</b> Students have knowledge of the basic principles of quantitative analysis in terms of chemical structure, energetics and chemical analysis which includes the analysis process, evaluation of analysis results, chemical calculations, gravimetric and volumetric analysis (acid-base titration, precipitation titration, complexing titration, redox titration) and its applications.  <b>Spesific Competence:</b> Skilled students use tools in carrying out quantitative analysis in terms of chemical structure, energetics and chemical analysis which includes the analysis process, evaluation of analysis results, chemical calculations, gravimetric and volumetric analysis (acid-base titration, precipitation titration,



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Content:	Study of the basic principles of quantitative analysis in terms of chemical structure, energetics and chemical analysis which includes the analysis process, evaluation of analysis results, chemical calculations, gravimetric and volumetric analysis (acid-base titration, precipitation titration, complexing titration, redox titration), followed by laboratory activities which supports so that students are able to master related concepts, are skilled at using tools, are honest and responsible and can communicate their knowledge and skills scientifically.																																								
Study / exam achievements:	<p>The final grade (NA) is calculated based on the following ratio:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;">Assessment Components</th> <th style="width: 40%;">Percentage of contribution</th> </tr> </thead> <tbody> <tr> <td>Participation</td> <td style="text-align: center;">20%</td> </tr> <tr> <td>Assignment</td> <td style="text-align: center;">30%</td> </tr> <tr> <td>Mid-semester test</td> <td style="text-align: center;">20%</td> </tr> <tr> <td>Final semester test</td> <td style="text-align: center;">30%</td> </tr> </tbody> </table> <p>Grade conversion of 0-100 scale into 0-4 scale is set as below:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;">Letter</th> <th style="width: 20%;">Number</th> <th style="width: 60%;">Grade Interval</th> </tr> </thead> <tbody> <tr> <td>A</td> <td style="text-align: center;">4,00</td> <td style="text-align: center;"><math>85 \leq A \leq 100</math></td> </tr> <tr> <td>A-</td> <td style="text-align: center;">3,75</td> <td style="text-align: center;"><math>80 \leq A- &lt; 85</math></td> </tr> <tr> <td>B+</td> <td style="text-align: center;">3,50</td> <td style="text-align: center;"><math>75 \leq B+ &lt; 80</math></td> </tr> <tr> <td>B</td> <td style="text-align: center;">3,00</td> <td style="text-align: center;"><math>70 \leq B &lt; 75</math></td> </tr> <tr> <td>B-</td> <td style="text-align: center;">2,75</td> <td style="text-align: center;"><math>65 \leq B- &lt; 70</math></td> </tr> <tr> <td>C+</td> <td style="text-align: center;">2,50</td> <td style="text-align: center;"><math>60 \leq C+ &lt; 65</math></td> </tr> <tr> <td>C</td> <td style="text-align: center;">2,00</td> <td style="text-align: center;"><math>55 \leq C &lt; 60</math></td> </tr> <tr> <td>D</td> <td style="text-align: center;">1,00</td> <td style="text-align: center;"><math>40 \leq D &lt; 55</math></td> </tr> <tr> <td>E</td> <td style="text-align: center;">0,00</td> <td style="text-align: center;"><math>0 \leq E &lt; 40</math></td> </tr> </tbody> </table>	Assessment Components	Percentage of contribution	Participation	20%	Assignment	30%	Mid-semester test	20%	Final semester test	30%	Letter	Number	Grade Interval	A	4,00	$85 \leq A \leq 100$	A-	3,75	$80 \leq A- < 85$	B+	3,50	$75 \leq B+ < 80$	B	3,00	$70 \leq B < 75$	B-	2,75	$65 \leq B- < 70$	C+	2,50	$60 \leq C+ < 65$	C	2,00	$55 \leq C < 60$	D	1,00	$40 \leq D < 55$	E	0,00	$0 \leq E < 40$
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Media:	Computer, LCD, White board																																								
Learning Methods	Lectures, discussion, assignment																																								
Literature:	<p>Basset,J.,et.al.1991. Vogel: <i>Texbook of Quantitative Inorganic Analysis Including Elementary Instrumental Analysis</i>. London: Longman Group Limited</p> <p>Day, Jr, R.A., dan Underwood, A.L., 2002. <i>Quantitative</i></p>																																								



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	<p><i>Analysis</i>. Sixth Ed. (Alih bahasa: Sopyan, I.). Jakarta: Penerbit Erlangga.</p> <p>Skoog, Douglas.A. 1982, <i>Fundamental of Analytical Chemistry</i>. Fourth Edition. Tokyo: Holt- Sounders Japan</p>
Notes:	<p>*1 credit unit or <i>sks</i> in learning process = three periods consist of: (a) scheduled instruction in a classroom or laboratory (50 minutes); (b) structured activity (60 minutes); and (c) individual activity (60 minutes) according to the Regulation of Indonesia Ministry of Research, Technology, and Higher Education No. 44 Year 2015 jo. the Regulation of Indonesia Ministry of Research, Technology, and Higher Education No. 50 Year 2018.</p> <p>**1 credit unit or <i>sks</i> = 1.59 ECTS according to Rector Decree Of Universitas Negeri Surabaya No. 598/UN38/HK/AK/2019</p>