



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, Laman : <http://kimia.fmipa.unesa.ac.id>

MODULE HANDBOOK

Module Name:	Qualitative Analytical Chemistry
Module level:	Bachelor
Course Code:	8420402094
Abbreviation, if applicable:	-
Course included in the module, if applicable:	-
Semester/term:	2 nd /First Year
Module coordinator(s):	Prof. Dr. Sri Poedjiastoeti, M.Si.
Lecturer(s):	1. Prof. Dr. Sri Poedjiastoeti, M.Si. 2. Dr. Maria Monica Sianita, M.Si. 3. Rusmini S.Pd., M.Si.
Language:	Bahasa Indonesia
Classification within the Curriculum:	Compulsory Course
Teaching format/class hours per week during the semester:	2 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:	2 CU = 2 x 1.59 = 3.18 ECTS
Prerequisite course(s):	Basic chemistry 1
Targeted learning outcomes:	CLO 1 : Students are able to collect information from various sources, both ICT and non-ICT, so that they have knowledge of supporting theories, experimental techniques and how to carry out qualitative analysis. CLO 2 : Skilled students use tools and materials in conducting qualitative analysis through the stages of preliminary analysis, analysis of cations and anions in a compound and the reactions that occur. CLO 3 : Students have the ability to work together and be responsible for conducting a quality analysis. CLO 4 : Students have the ability to communicate their knowledge and skills in the form of the results of qualitative analysis of chemical compounds in single or multiple samples
Content:	1. supporting theory in qualitative analysis 2. qualitative analysis experimental techniques 3. preliminary analysis 4. cation analysis in general



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	5. cation analysis group I 6. analysis of group II cations 7. cation analysis group III 8. cation analysis for group IV 9. analysis of group V cations 10. Anion analysis																																								
Study / exam achievements:	The final grade (NA) is calculated based on the following ratio: <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th>Assessment Components</th> <th>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> Grade conversion of 0-100 scale into 0-4 scale is set as below: <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th>Letter</th> <th>Number</th> <th>Grade Interval</th> </tr> </thead> <tbody> <tr> <td>A</td> <td style="text-align: center;">4,00</td> <td style="text-align: center;">$85 \leq A \leq 100$</td> </tr> <tr> <td>A-</td> <td style="text-align: center;">3,75</td> <td style="text-align: center;">$80 \leq A- < 85$</td> </tr> <tr> <td>B+</td> <td style="text-align: center;">3,50</td> <td style="text-align: center;">$75 \leq B+ < 80$</td> </tr> <tr> <td>B</td> <td style="text-align: center;">3,00</td> <td style="text-align: center;">$70 \leq B < 75$</td> </tr> <tr> <td>B-</td> <td style="text-align: center;">2,75</td> <td style="text-align: center;">$65 \leq B- < 70$</td> </tr> <tr> <td>C+</td> <td style="text-align: center;">2,50</td> <td style="text-align: center;">$60 \leq C+ < 65$</td> </tr> <tr> <td>C</td> <td style="text-align: center;">2,00</td> <td style="text-align: center;">$55 \leq C < 60$</td> </tr> <tr> <td>D</td> <td style="text-align: center;">1,00</td> <td style="text-align: center;">$40 \leq D < 55$</td> </tr> <tr> <td>E</td> <td style="text-align: center;">0,00</td> <td style="text-align: center;">$0 \leq E < 40$</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, laboratory																																								
Learning Methods:	Individuals assignment, group assignment, discussion, presentation, and practicum																																								
Literature:	1. Sawyer, Heineman, and Beebe.1984. <i>Chemistry Experiments for Instrumental Methods</i> . New York: John Wiley & Sons 2. Svehla, G, 1979. <i>Vogel's Text Book of Macro and Semimicro Qualitative Inorganic Analysis. Fifth ed.</i> London: Longman Group Limited 3. Sorum, Clarence Harvey, and Lagowski, J. J. 1977. <i>Introduction to Semimicro Qualitative Analysis</i> . United State of America: Prentice-Hall Inc 4. Briggs, J. G. R. 2000. <i>Chemistry for GCE 'O' Level Practical Workbook</i> . Singapore: Pearson Education Asia Pte Ltd 5. Poedjiastoeti, S., Monica, M., Sukarmin, dan Rusmini. 2016. <i>Kimia Analisis Kualitatif</i> . Surabaya: Unesapress																																								



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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>
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