

MODULE HANDBOOK

Module Name	Basics of Chemical Separations
Module level	Bachelor
Abbreviation, if applicable	8420403101
Sub-heading, if applicable	-
Course included in the module, if applicable	-
Semester/term	4 th /Second Year
Module coordinator(s)	Dr. Maria Monica S. B. W., M.Si.
Lecturer(s)	1. Dr. Pirim Setiarso, M.Si; 2. Dr. Utiya Azizah, M.Pd. 3. Rusmini, S.Pd., M.Si. 4. Dr. Nita Kusumawati, M.Sc.
Language	Indonesian
Classification within the curriculum	Compulsory Course
Teaching format/class hours per week during the semester:	3 hours lecturers (50 min per hours)
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 points:	3 CU = 3 x 1.59 = 4.77 ECTS
Prerequisites course(s):	-
Targeted learning outcomes:	<p>CLO 1: Students have knowledge of the concepts of chemical separation techniques in terms of chemical structure, energetics and chemical analysis including distillation, extraction, chromatography, and electroanalysis techniques.</p> <p>CLO 2: Skilled students use tools in carrying out chemical separation techniques including distillation, extraction, chromatography, and electroanalysis techniques.</p> <p>CLO 3: Students have the ability to collaborate and are responsible for carrying out chemical separation including distillation, extraction, chromatography, and electroanalysis techniques.</p> <p>CLO 4: Students have the ability to communicate the analysis of the results of chemical separation including distillation, extraction, chromatography, and electroanalysis techniques.</p>
Content:	<p>Introduction to the purpose, benefits, and basics of separation in general</p> <p>Distillation</p> <p>Extraction</p>

	Chromatography Electroanalysis										
Study / exam achievements:	Students are considered to complete the course and pass if they obtain at least 40% of maximum final grade. The final grade (NA) is calculated based on the following ratio:										
	<table border="1"> <thead> <tr> <th>Assessment Components</th> <th>Percentage of contribution</th> </tr> </thead> <tbody> <tr> <td>Participation</td> <td>20%</td> </tr> <tr> <td>Assignment</td> <td>30%</td> </tr> <tr> <td>Mid-semester test</td> <td>20%</td> </tr> <tr> <td>Final semester test</td> <td>30%</td> </tr> </tbody> </table>	Assessment Components	Percentage of contribution	Participation	20%	Assignment	30%	Mid-semester test	20%	Final semester test	30%
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Mid-semester test	20%										
Final semester test	30%										
Media:	Computer, LCD, White board										
Learning Methods	Individuals assignment, group assignment, discussion, presentation, and practicum										
Literature:	<ol style="list-style-type: none"> Day, Underwood, Ray 2002. <i>Kimia Analisis Kuantitatif (terjemahan)</i>, Jakarta: Erlangga Harvey, D.2000. <i>Modern Analytical Chemistry</i>. Int.Ed. Singapore: Mc Graw Hill Pecksok, et al. 1976. <i>Modern Methods of Analytical Chemistry</i>. 2nd New York: John Wiley and Sons Soebagio, Budiasih, E, Ibnu, S, Widarti, H.R, Munzil. 2001. <i>Kimia Analitik II (Common Book)</i>, Malang: IMSTEP – JICA FMIPA Universitas Negeri Malang 										
Notes:	*1 CU 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.										
	**1 CU = 1,59 ECTS according to Rector Decree Of Universitas Negeri Surabaya No. 598/Un38/Hk/Ak/2019										