

## Module Handbook

<b>Module Name</b>	Spectrometry				
<b>Module Level</b>	Higher Diploma				
<b>Code, if applicable</b>	VKD323				
<b>Subtitle, if applicable</b>	-				
<b>Courses, if applicable</b>	-				
<b>Semester(s) in which the module is taught</b>	3 <sup>rd</sup> semester				
<b>Person responsible for the module</b>	Tri Esti Purbaningtias, S.Si., M.Si.				
<b>Lecturer</b>	Puji Kurniawati, S.Si., M.Sc. Tri Esti Purbaningtias, S.Si., M.Si. Kuntari, S.Si., M.Sc.				
<b>Language</b>	Bahasa Indonesia				
<b>Relation to curriculum</b>	Compulsory				
<b>Type of teaching, contact hours</b>	Lecture (face to face teaching, structured activities, independent study and exam): 5.7 hours x 16 weeks per semester				
<b>Workload</b>	Total Workload	91 hours; 2 CU			
		Face to face teaching	Structured activities	Independent study	Exam
	Hours	24	28	28	11
<b>Credit Points</b>	2 CU/3.4 ECTS				
<b>Requirements according to the examination regulations</b>	75% minimum requirements of attendance				
<b>Recommended prerequisites</b>	Analytical Chemistry				
<b>Module objectives/intended learning outcomes</b>	<p>PLO 3: Students can express basic concepts of chemistry, chemical analysis, operation, and maintenance of chemical instruments that can be applied in their work</p> <p>Subject LO:            Students are able to describe the basic concepts of spectroscopy            Students are able to describe and apply the principle and technique of spectrometry            Students are able to describe the principle of spectrometer            Students are able to analysis and conclude the qualitative and quantitative data from the spectrometric analysis</p>				
<b>Content</b>	<ol style="list-style-type: none"> <li>1. Basic concepts of spectrometry</li> <li>2. The principles and technique of spectrometry</li> <li>3. Instrumentation: UV-Vis, AAS, IR, XRF, ICP</li> <li>4. Data analysis and interpretation</li> </ol>				
<b>Study and examination requirements and forms of examination</b>	Midterm exams (27%), quizzes (23%), journal presentation (23%), and final exams (27%)				
<b>Media employed</b>	Google classroom, youtube, zoom meeting, google form, google doc				

**Reading list**

1. Day, Jr., R.A. and Underwood A.L., 2002, *Quantitative Analysis*, translated by Aloysius Pudjaatmaka, edisi keenam, Erlangga, Jakarta
2. Duckett, S and Gilbert, B., 2000, *Foundation of Spectroscopy*, Oxford University Press, Oxford UK
3. Harvey, D., 2000, *Modern Analytical Chemistry*, McGraw-Hill Companies, Inc., New York
4. Khopkar , S., M., 2004, *Basic Concepts Of Analytical Chemistry 2<sup>nd</sup> Edition*, New Age International (P) Ltd., New Delhi, India
5. Pecksock, R.I., Shield, 1976, *Modern Methods of Chemical Analysis*, John Wiley & Sons, New York
6. Silverstein, R.M., Webster F.X., Kiemle, D., Kiemle, D.J., 2005, *Spectrometric Identification of Organic Compounds*, John Willey & Sons Inc., New York