

Module Handbook

Module Name	Chemical Separation					
Module Level	Higher Diploma					
Code, if applicable	VKD326					
The subtitle, if applicable	-					
Courses, if applicable	-					
Semester(s) in which the module is taught	3 rd semester					
A person responsible for the module	Kuntari, S.Si., M.Sc.					
Lecturer	Kuntari, S.Si., M.Sc.					
Language	Bahasa Indonesia					
Relation to curriculum	Compulsory					
Type of teaching, contact hours	Lecture (face to face teaching, independent study, structured activities/ structured assignments, and exam): 5.6 hours x 16 weeks per semester					
Workload	Total Workload	91 hours; 2 CU				
		Face to face teaching	Independent study	Structured assignments	Presentation	Exam
	Hours	24	21	21	14	11
Credit Points	2 CU/3.4 ECTS					
Requirements according to the examination regulations	75% minimum requirements of attendance					
Recommended prerequisites	-					
Module objectives/intended learning outcomes	<p>PLO 3: Able to 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 apply the principle of chemical separation method and select the chemical separation method according to the characteristics of sample</p>					
Content	<ol style="list-style-type: none"> 1. Introduction to separation chemistry 2. Principles and methods of separation: decantation, filtration, evaporation, sublimation, crystallization, and recrystallization, coagulation, precipitation, flocculation, centrifugation, distillation, extraction-destruction 3. Principle and types of filtration (simple filtration, vacuum filtration, membrane filtration) 4. Principle of distillation (simple distillation, fractional distillation, steam distillation, vacuum distillation) 					

	5. Principle and type of destruction (wet and dry destructions)
Study and examination requirements and forms of examination	Mid-term (30%) and final term exams (30%), presentation (30%), assignments (10%)
Media employed	Google classroom, youtube, zoom meeting, google form, google doc
Reading list	<ol style="list-style-type: none"> 1. David Harvey, 2000, Modern Analytical Chemistry, Mc Graw Hill, New York 2. Mitra, Somenath, 2003, Sample Preparation Techniques in Analytical Chemistry, A John Wiley & Sons, Inc., Publication, New Jersey 3. Gunzler, Helmut dan Williams, Alex, 2001, Handbook of Analytical Techniques, Wiley-VCH, New York <p>Harris, D. C., 2007, Quantitative Chemical Analysis, Edisi ke-7, W. H. Freeman and Company, New York</p>