
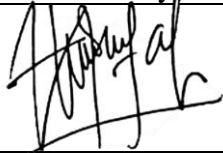





Faculty of Natural Sciences and Mathematics
Chemistry Department
Chemistry Education Study Program

Module Name		Instrumental Chemistry Lab Work		
Module level, if applicable		3 st year		
Code, if applicable		SPK-540		
Semester (s) in which the module is taught		5 st semester		
Person responsible for the module		Prof. Riyanto, M.Si., Ph.D		
Lecturer(s)		Prof. Riyanto, M.Si., Ph.D Muhaimin, M.Sc.		
Language		Indonesia		
Relation to curriculum		Compulsory		
Types of teaching and learning	Class size	Forms of active participation	Workload: 45 hours	
Practicum	20-25	Laboratory practice and experiments	Laboratory work: 170 (min) x 8 (meeting)	23 hours
			Preparation (120min*8 + 200min) Exam (200min*1)	22 hours
ECTS credit		1.61		
Credit points		1 SCU		
Requirements according to examination regulations		<p>Students must follow all the series of practicum activities. Violation of this will result in giving an E value (failing practicum).</p> <p>Students who do not participate in the practicum for 3 (three) times without justified reasons may not attend the next practicum and are considered to have resigned from the practicum.</p> <p>Students who for some reason cannot follow the practicum according to the predetermined schedule can apply for inhal practicum. Inhal costs are determined by the laboratory.</p> <p>Students who inhal allowed for a maximum of 3 (three) times.</p> <p>Students who have not completed laboratory expenses such as tools, materials or tasks (if any) within a certain time will be given a K or F value.</p>		
Recommended prerequisites		N/A		

Related course	Instrumental Chemistry		
Module objectives/intended learning	<p>On successful completion of the course students should be able to:</p> <ol style="list-style-type: none"> 1. carry out practical activities by paying attention to aspects of work safety and security (K3) 2. evaluate practical activities 3. explain the basic principles and analytical techniques with chemical instruments 4. operate chemical instruments used in practical activities 		
Content	<ul style="list-style-type: none"> • Methylene Blue Analysis Using Single Beam Uv-Vis Spectrophotometer with Standard Curve Method and Standard Addition • Analysis of Caffeine Levels in Coffee Using Uv-Vis Double Beam Spectrophotometer with Standard Addition Method • Determination of Iron (Fe) by Atomic Absorption Spectrophotometry • Analysis of Salicylic Acid Compounds Using Infrared Spectrophotometer • Analysis of Alcohol Content in Samples with Gas Chromatography (GC) • Characterization of Solid Materials with X-Ray Diffraction (XRD) • 7. Analysis of the Oxidation and Reduction Potential of Compounds with Cyclic Voltammetry (CV) 		
Study and examination requirements and forms of examination	Final score (NA) is calculated as follows:		
	Intended learning outcomes	Weight (%)	Technique of assessment
	1	25	Non test: performance observation
	2	25	Non test: lab work report
	3	25	Test: pretest and posttest
	4	25	Non test: performance observation
Media employed	Instrumental Chemistry laboratory equipment		
Reading lists	<ol style="list-style-type: none"> 1. Riyanto, 2003, Petunjuk Praktikum Kimia Instrumen I, Yogyakarta: Prodi Kimia Universitas Islam Indonesia. 2. Duckett, S., and Gilbert, B., 2000, Foundation of Spectroscopy, Oxford: Oxford University Press. 3. Riyanto, Anugrahwati, M., dan Fauzi'ah, L., 2017, Panduan Praktikum Kimia Instrumental, Yogyakarta: Program Studi Pendidikan Kimia, UII. 		

Prepared by:	Verified by:	Authorized by:
		
Person responsible for the module	Student representative	Coordinator Program