

## Module Handbook

<b>Module Name</b>	Drug and Cosmetic Analysis Lab Work					
<b>Module Level</b>	Higher Diploma					
<b>Code, if applicable</b>	VKT 540					
<b>The subtitle, if applicable</b>						
<b>Courses, if applicable</b>						
<b>Semester(s) in which the module is taught</b>	5 <sup>th</sup> semester					
<b>A person responsible for the module</b>	Bayu Wiyantoko, M.Sc.					
<b>Lecturer</b>	Kuntari, M.Sc.					
<b>Language</b>	Bahasa Indonesia					
<b>Relation to curriculum</b>	Compulsory					
<b>Type of teaching, contact hours</b>	Laboratory Practice (teaching, preparation, lab work, data analysis and report) and Exams: 5.7 hours x 16 week					
<b>Workload</b>	Total Workload	91 hours; 2 CU				
		Face to face teaching	Laboratory preparation	Laboratory work	Data analysis and report	Exam (Theory and Practice)
	Hours	11	11	50	11	8
<b>Credit Points</b>	2 CU/3.4 ECTS					
<b>Requirements according to the examination regulations</b>	100% of requirements attendance in laboratory work					
<b>Recommended prerequisites</b>	Laboratory Technique Lab Work					
<b>Module objectives/intended learning outcomes</b>	<p>PLO 5: Students can contribute to solving problems in the scope of work</p> <p>PLO 7: Students can select and carry out chemical analysis methods and operate instruments by applying the principles of chemical occupational health and safety</p> <p>PLO 9: Students can carry out validation and verification of testing methods</p> <p>Subject LO:</p> <p>Students can design and carry out verification of drug and cosmetic testing</p> <p>Students can carry out drug and cosmetic sample preparation procedures</p> <p>Students can apply drug and cosmetic component testing procedures with standard and non-standard methods</p> <p>Students can determine and carry out test methods that are under the characteristics of the sample both instrumentally and non-instrumentally</p> <p>Students can determine and carry out test methods that are under the characteristics of the sample</p> <p>Students can build teamwork in carrying out laboratory procedures</p>					

	Students can analyze data and report test results in writing and orally Students can apply principles and build a culture of chemical safety and health
<b>Content</b>	<ol style="list-style-type: none"> <li>1. Physicochemical analysis of drugs and cosmetics</li> <li>2. Analysis of drug and cosmetic active substances</li> <li>3. Analysis of heavy metal contamination in medicine and cosmetics</li> <li>4. Analysis of prohibited ingredients in medicine and cosmetics</li> </ol>
<b>Study and examination requirements and forms of examination</b>	Assessment lab work (55%), team work (10%), analysis and report (25%), safety lab (10%)
<b>Media employed</b>	Google classroom, youtube, zoom meeting, google form, google doc, standard method, laboratory handbook
<b>Reading list</b>	<ol style="list-style-type: none"> <li>1. Bharate, S.S., Bharate, S.B., 2012, Spectrophotometric and Chromatographic Determination of</li> <li>2. Acetylsalicylic Acid and Caffeine in Pure and in Tablet Dosage Form, J Adv Scient Res., 3 (1), 73-81.</li> <li>3. Day, R.A., dan Underwood, A.L., 2002, Analisis Kimia Kuantitatif, Edisi keenam, Erlangga, Jakarta.</li> <li>4. Draelos, Z.D. dan Thaman, L.A., 2006, Cosmetics Formulation of Skin Care Products, Taylor &amp; Francis</li> <li>5. Draelos, Z.D., 2010, Cosmetic Dermatology: Products and Procedures, Wiley-Blackwell</li> <li>6. Ganjdar, I.G., 2009, Kimia Farmasi Analisis, Pustaka Pelajar</li> <li>7. Khopkar, S.M., 2003, Konsep Dasar Kimia Analitik, UI Press, Jakarta.</li> <li>8. Murtaza, G., Khan, S.A., Shabbir, A., Mahmood, A., Hasan bin Asad, M.H., Farzana, K., Malik, S.N., dan Hussain, I., 2011, Development of a UV-Spectrophotometric Method for The Simultaneous Determination of Aspirin and Paracetamol in Tablets, Sci. Res. Essays., 6 (2), 417-421.</li> <li>9. Sujadi, A.R., 2004, Analisis Obat dan Makanan, Pustaka Pelajar</li> <li>10. Rohman, A., 2007, Kimia Farmasi Analisis, Pustaka Pelajar, Yogyakarta.</li> <li>11. Watson, D.G., 2007, Analisis Farmasi, Penerbit Buku Kedokteran EGC</li> <li>12. Widana, G. A. B., 2014, Analisis Obat, Kosmetik dan Makanan, Graha Ilmu, Yogyakarta</li> </ol>