Module Handbook

Module Name:	Pharmaceutical Analysis I
Module Level:	Bachelor
Abbreviation, if applicable:	Lecture KIA206
	Practical Work KIA207
Sub-heading, if applicable:	
Courses included in the module, if applicable:	
Semester/term:	2 / Second year
Module coordinator(s):	Prof. Dr.rer.nat. Mochammad Yuwono, MS., Apt.
Lecturer(s):	M. Faris Adrianto, M.Farm., Apt.
	Prof. Dr. Sudjarwo., MS, Apt
	Prof. Dr.rer.nat. Mochammad Yuwono, MS., Apt.
	Prof. Djoko Agus P., MS
	Prof. Dr. Amiruddin Prawita
	Prof. Dr. Noor Erma N.S., Apt. MS.,
	Dr. Isnaeni, MS
	Dr. Asri Darmawati, MS
	Prof. Dr. M. Zainuddin
	Drs. Achmad Toto Poernomo, M.Si
	M. Faris Adrianto, S. Farm ., M.Farm., Apt.
	Dr. Riesta Primaharinastiti, Apt. M.Si
	Febri Annuryanti, S.Farm., M.Sc.
Language:	Bahasa Indonesia
Classification within the curriculum:	Compulsory Course/~~Elective Studies~~
Teaching format/class hours per week during the semester:	Lecture 200 minutes lectures, 13 lecture classes/semester
	Practical Work 200 minutes practical work classes, 13 practical work classes /semester
Workload:	Lecture Total 42 hours a semester
	Practical Work Total 42 hours a semester
Credit Points:	Lecture 4
	Practical Work 2
Requirements:	
Learning goal/competencies:	Knowledge – To understand the concept of pharmacy science and technology through scientific reasoning based on logical thinking, critical, systematic, and innovative (Decision Maker, Communicator, Teacher, Researcher) – To understand the concept of identity, purity, and dosage drug ingredients in pharmaceutical preparations with the appropriate analysis – To understand the concept of chromatographic,

	spectroscopic, electrochemistry and basic concepts and principles in Thin Layer Chromatography, Gas chromatography, HPLC, Spectro UV-Vis, AAS, FTIR
	Skills – To demonstrate an ability to honesty – To demonstrate an ability to discipline (max delay of 15 minutes) – To demonstrate an ability to pay attention to the explanation in lectures and discussions – To demonstrate an ability to communicate and team work
	Competence – To have an ability to apply the concept of pharmaceutical analysis – To have an ability to apply the concept of instrumentation and can perform qualitative and quantitative analysis by HPLC method, GC, TLC, AAS, UV-Vis spectrophotometry, FT-IR spectrophotometry and potentiometric – To have an ability to apply the concept of define identity, potency and purity in the context of pharmaceutical product quality – To have an ability to apply the concept of describe the structure and purpose of a pharmacopoeia monograph – To have an ability to apply the concept of determine system suitability parameters
Content:	Lecture Scope of pharmaceutical analysis: presents the basic theory, instrumentation and applications of instrumental methods of chemical analysis, which include spectroscopic techniques (UV-Vis spectrophotometry, Spektrofluorometri, AAS, FTIR), chromatography (Thin Layer Chromatography, Gas Chromatography, High Performance Liquid Chromatography) and electrochemistry.
	Lecture Scope of pharmaceutical analysis: presents the basic theory, instrumentation and applications of instrumental methods of chemical analysis, which include spectroscopic techniques (UV-Vis spectrophotometry, Spektrofluorometri, AAS, FTIR), chromatography (Thin Layer Chromatography, Gas Chromatography, High Performance Liquid Chromatography) and electrochemistry.
Study/exam achievements:	Lecture Student are considered to be competent and pass if at least get 50% of maximum mark of the exams based learning. Final score is calculated as follow : 50% Exam I + 50% Exam II Final index is defined as follow :

	A : ≥ 75 AB : 70 – 74,9 B : 65 – 69,9 BC : 60 – 64,9 C : 55 – 59,9 D : 40 – 54,9 E : <40
	Practical Work Student are considered to be competent and pass if at least get 50% of maximum mark of the exams based learning. Final score is calculated as follow : 5% tutorial + 5% homework + 80% laboratory report + 33% Exam II Final index is defined as follow : A : ≥ 75 AB : 70 – 74,9 B : 65 – 69,9 BC : 60 – 64,9 C : 55 – 59,9 D : 40 – 54,9 E : <40
Forms of Media:	LCD projector, power point, white board and tools laboratory practicum in pharmaceutical analysis
Literature:	1. Anonim, 1995, Farmakope Indonesia Edisi IV, Departemen Kesehatan Republik Indonseia, Jakarta
	2. Brittain G., 2005, Ewing's Analytical Instrumentation Handbook, Marcell Dekker.
	3. Ewing, GW, *et al*., 1993, Good Laboratory Practice, Hewlet-Packard.
	4. ISO/IEC Guide 17025:2005
	5. Jeffery G.H.,*et all*., 1989, Vogel's quantitative chemical analysis, Longman, 668-669
	6. Kellner *et al*., 1998, Analytical Chemistry, Wiley-VCH, Weinheim.
	7. Liebrant, RL., 1991, Combined GC/FT-IR/MS analysis 5thed, Mcgraw-hill International, NY,USA.
	8. Manual HPLC Agilent 1100 series
	9. Manual Perkin Elmer FT-IR, spectrum 01
	10. Manual shimadzu Uv-260
	11. Manual KG HP Agilent 6890 series
	12. Munson.J.W., 1991, Analisis Farmasi (terjemahan), AUP Surabaya.
	13. R A. Day Underwood, 1991, Quantitative analysis, 6th edition Prentice Hall, Longman.
	14. Silverstien, RM., 1986, Spectrometric Identification of organic Compounds, 4th edition, John Wiley and Sons, Inc, NY.
	15. USP, 2007, USP30/NF.
	16. Watson David G., 1999, Pharmaceutical Analysis, A Textbook for Pharmacy Students and Pharmaceutical

	chemist, Churchill livingstone, Harcourt Publisher Limited.
	17. Willard, HH, *et al*., 1988, Instrumental Methods of Analysis 7th ed
Notes:	