MODULE HANDBOOK

Module Name	Pharmaceutical Chemistry
Module level	Bachelor
Abbreviation, if applicable	4720102082
Sub-heading, if applicable	-
Course included in the module, if applicable	-
Semester/term	$5^{th}/3^{rd}$ Year
Module coordinator(s)	Prof. Dr. Titik Taufikurohmah, M.Si.
Lecturer(s)	Prof. Dr. Titik Taufikurohmah, M.Si. Dr. Mitarlis, S.Pd., M.Si.
Language	Indonesian
Classification within the curriculum	Elective Course
Teaching format/class hours per week during the semester:	2 hours lecturers (50 min per hours)
Workload:	1 CU for bachelor degree equals to 3 workhours per week or 170 minutes (50' face to face learning, 60' structured learning, and 60' independent learning). In one semester, courses are conducted in 14 weeks (excluding mid and end-term exam). Thus, 1 CU equals to 39.67 workhours per semester. One CU equals to 1.59 ECTS.
Credit points:	2 CU x 1.587 = 3.18 ECTS
Prerequisites course(s):	Polyfunction Compound and Macromolecul
Targeted learning outcomes:	**CLO 1** Students can use information based on experiences and cases in everyday life, other learning resources, and ICT to support understanding of the concept of pharmaceutical chemistry with discussions, presentations, and collaboration to study pharmaceutical chemistry. **CLO 2** Students can mastering the role of chemical concepts and their implementation in the pharmaceutical field and having the ability to relate chemical concepts and their role in studying the physicochemical properties of drugs and their relationship with biological activities **CLO 3** Students can mastering the theoretical concepts (knowledge) about pharmaceutical science, the position of chemistry in pharmaceutical science, the concept of drugs, drug limitations, drug dosage forms and administration, and phases of drug travel in the body. Have knowledge of vitamins, addictive substances, and pharmaceutical analysis **CLO 4** Students can have an honest and responsible attitude in applying the understanding of pharmaceutical chemistry in the context of everyday life and being able to participate in

	society by implementing knowledge of pharmaceutical chemistry.
Content:	**Introduction:** 1. Position of Chemistry in Pharmaceutical Sciences, 2. History of the Development of Pharmaceutical Sciences **Definition and Limitations of Drugs:** 1.Definitions of drugs, 2. Terms in pharmaceuticals, 3. How to use drugs and forms of medicine **The Path Drugs Take Through the Body**: 1. Biopharmacetic, pharmacokinetic and pharmacodynamic phases, 2. Absorption, distribution, metabolism and excretion of drugs in the body, 3. Effects of drug use **Drug molecular structure and biological activity:** 1. The relationship between the structure and biological activity of drugs, 2. The relationship between stereochemistry and biological activity of drugs, 3. the effect of pH on the activity of drug compounds in ionized and non-ionized forms, 4. Explaining the relationship between redox reactions and biological activity of drugs **Several types of drugs:** 1. Analgesics and Antipyretics 2. Antihistamines and Antitussives, 3. Antibiotics **Vitamins:** 1. Water-soluble vitamins, insoluble in water, 2. Source of vitamins, 3. Function of vitamins, 4. Due to vitamin deficiency **Drugs:** Definition, prevention and control of drug abuse **Pharmaceutical Analysis:** 1. Sample preparation procedures, 2. Various preparations analysis techniques
Study / exam achievements:	Students are considered to be competent and pass if at least get 55 Final score is calculated as follows: 30% assignment + 30% middle exam (UTS) & 40% final exam (UAS) Table index of graduation • A = 4 (85 ≤-≥ 100) • A- = 3,75 (80 ≤-< 85) • B+ = 3,5 (75 ≤- < 80) • B = 3 (70 ≤-< 75) • B- = 2,75 (65 ≤-<75) • C+ = 2,5 (60 ≤-<65) • C = 2 (55 ≤-<60) • D = 1 (40 ≤-<55) • E = 0 (0 ≤-<40)
Media:	Computer, LCD, White board
Learning Methods	Individuals assignment, group assignment, discussion, and presentation

Literature:	1. Nugroho, Nurfina Aznam. 2001. **Materi Pokok Kimia Farmasi**. Modul 1-6. Pusat Penerbitan Universitas Terbuka. Jakarta. 2. Schunack, Walter. *Et al.* 1990. **Senyawa Obat**. Buku Pelajaran Kimia Farmasi. Gajah Mada University Pers. Yogyakarta 3. Azis, Hubeis, 1996. **Ilmu Farmasetika dan Perkembangannya Masa Kini**. Jurusan Farmasetika Universitas Airlangga. Surabaya. 4. Moh. Anief. 1997.**Apa Yang Perlu Diketahui Tentang Obat**. Gajah Mada Uneversity Press. Yogyakarta. 5. Siswandono dan Soekardjo, 2000. **Kimia Medisinal**. Airlangga University Press. 6. Sukandar, E. Y., (…….) Trend dan Paradigma Dunia Farmasi https://www.itb.ac.id/files/focus_file/orasi-ilmiah-dies-45.pdf 7. Haeira. 2017. Pengantar Ilmu Farmasi. http://repositori.uin-alauddin.ac.id/7289/1/BUKU%20DARAS%20PIF.pdf 8. Articles related to Pharmaceutical Chemistry from the internet