



MINISTRY OF EDUCATION, CULTURE, RESEARCH AND TECHNOLOGY

UNIVERSITAS NEGERI MAKASSAR

FACULTY OF MATHEMATICS AND NATURAL SCIENCES

DEPARTMENT OF BIOLOGY

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Module Handbook for Toxicology and Pharmacology

Module designation	Toxicology and Pharmacology
Module level, if applicable	Bachelor of science
Code, if applicable	22A42C512
Subtitle, if applicable	-
Courses, if applicable	-
Semester(s) in which the module is taught	Odd semester (V)
Person responsible for the module	Dr. A. Mu'nisa, S.Si., M.Si
Lecturer	Irma Suryani Idris,
Language	Indonesia
Relation to curriculum	Elective course, 5 th semester
Type of teaching, contact hours	Learning methods: lectures, project based learning, discussions, assignments. CSU : 2 2 x 50 minutes lecture = 100 minutes 2 x 60 minutes scheduled task = 120 minutes 2 x 60 minutes independent task = 120 minutes Total teaching format = 340 minutes = 5.7 hours
Workload	Total workload = (Total Teaching format x 16) = 5.7 x 16 = 91,2 jam
Credit points	2 CSU (3 ECTS)
Requirements according to the examination regulations	Student must have attended at least 80% of the lectures to sit in the exams
Recommended prerequisites	Biochemistry, Animal Physiology
Module objectives/intended learning outcomes	1. Able to understand the basic concept of work and medicinal substances in the body, toxic compounds. 2. The mechanism of action of drugs in their effects on the body, so that the indications and uses of these drugs can be understood. 3. Understand the fate of drugs in the body, conditions of toxic effects, intracellular and extracellular injury mechanisms, manifestations of toxic effects in the form of functional, biochemical and structural disturbances and the nature of irreversible and irreversible toxic effects. 4. Understand the factors that influence toxicity, both intrinsic factors of toxic substances and intrinsic factors of living things.

	5. Understanding of toxicity benchmarks both qualitatively and quantitatively, the relationship between dose and response and its application. 6. Understanding the definition and meaning, goals, therapeutic strategies and procedures for carrying out antidote therapy. 7. Understand the concept of toxicological research/test, definition and meaning, toxicological test system, determinants of validity and types of toxicological tests, safety evaluation and risk assessment.
Content	Pharmacology & toxicology courses study aspects of drugs, mechanisms of action, targets of action, fate of drugs in the body, as well as understanding the meaning and scope of toxicology, the fate of toxic substances in the body, various conditions of toxic effects, mechanisms of action, forms and properties of toxic effects, besides that also study the pharmacological action of drugs that are included in various drug classifications that are often used in therapy such as drugs that act on the autonomic nervous system, central nervous system, analgesics, anti-inflammatories, antihistamines, antibiotics and antihypertensive drugs
Study and examination requirements and forms of examination	Midterm and final exam, assignments
Media employed	LMS-SYAM OK, Power Point Presentation, Textbook, Journal Article, Handout
Reading list	1. Loomis, T.A. 1978. Essentials of Toxicology. 3rd Ed. Lea & Febiger: Philadelphia 2. Klaasen, C.D. & Watkins, J.B., 2003. Casarett and Doull's : Essentials Toxicology Mc Graw-Hill: New York 3. Klaasen, C.D. (Ed)2001. Casarett and Doull's Toxicology : The Basic Science of Poisons. 6rd Ed. Mc graw-Hill: New York 4. Glaister, JR. 1986. Principles of Toxicological Pathology, Taylor & Francis, London 5. Goldfrank, L.R., Flomenbaum, N.E., Lewin, N. A., Weisman, R.S., Howland, M.A. (Eds). Goldfrank's Toxicologic Emergencies. 4th Ed. Prantice-Hall International Inc.: London 6. Donatus, I.A. 2005, Toksikologi Dasar. Edisi II. Bagian Farmakologi dan Farmasi Klinik, Fakultas farmasi UGM, Yogyakarta