THE MODULE HANDBOOK
FACULTY OF BIOLOGY

Protozoology

Module code	BIO 21302
Module level	Undergraduate
Abbreviation, if applicable	-
Sub-heading, if applicable	-
Courses included in the module, if applicable	-
Semester/term	Even
Module coordinator(s)	Soenarwan Hery Poerwanto, S.Si., M.Kes.
Lecture(s)	1. Soenarwan Hery Poerwanto, S.Si., M. Kes. 2. Dra. Rr. Upiek Ngesti Wibawaning Astuti, DAP.&E., M.Kes. 3. Dila Hening Widyarini, S.Si., M.Sc.
Language	Indonesia
Classification within the Curriculum	Elective course
Teaching format/ class hours per week during the semester	This course consists of 2 credits of theory and 1 credit of practice and is planned to have 13 to 14 learning weeks excluded midterm and final examination. Evaluation of laboratory work will be held in the end of laboratory work schedule. The capacity of classroom should be for 40-60 students. The material will be delivered with combined between SCL, TCL, and case study.
Workload	Estimated working hour: 9 hours/week
Credit points	2-1 credits
Requirements	Animal Systematics (BIO 31101)
Learning goals/ competencies	**1. Work ability** a. Plan, implement, analyze, and report on the experimental scientific / research in the field Protozoology. b. Using information and communication technology in learning. c. Working in groups in the laboratory and field. **2. Mastery of knowledge** a. Understand the basic concepts of protozoa diversity and its role in the ecosystem.

	b. Mastering and applying scientific methods in the field of Protozoology. c. Analyze and solve a problem and to develop problem-solving design and research activities in protozoans. **3. Authority and responsibillity** a. Perform based communications technology effectively, whether written, oral, and with images relating to protozoan. b. Implement and integrate a branch of biology (especially Protozoa) into another branch. c. Able to anticipate problems in the field Protozoology.
Content	Protozoology (BIO 21302) to learn about Protozoa organisms : Class Rhyzopoda/Sarcodina, Class Flagellata (Mastigophora), Class Ciliata (Ciliophora)and Class Sporozoa that includes Mainly discusses the grouping remains of morphology and anatomy related to the structure and function, classification, physiology (digestive system, circulatory, respiratory , nervous, reproductive), life cycle and ecology, the role of human life (benefits and losses caused), Immunology, as well as learn how the collection, preservation, culture and identification that is used as a cornerstone in the development of applications. Protozoology starter molecular biology. In line with the progress of science has developed studies using molecular techniques in various fields of science. For it was on this course are also given an explanation of the development and application of molecular biology in examination techniques and applications of molecular protozoa that have been applied to the diagnosis and detection of protozoa (parasitic diseases). In addition, students are also given the task of making paper or paper independently. Protozoology an elective courses for students of Biology Faculty. Students are required to attend classes with weights 2 credits and practicum with weights 1 Credit to increase knowledge and skills in dealing with Protozoa. This course consists of 10 subjects with the number of meetings 14-16 times per semester. Learning methods by implementing Student Centered Learning (SCL) combined with the Student Teacher Aesthetic Role-Sharing (STARS) with improved interactive communication between teacher and students and a teacher as a facilitator and partner learning for students in a harmonious atmosphere. STARS also apply patrap Three Realms, namely Ing ngarsa sung tuladha (exemplary), Ing Madya Mangun Karsa (empowering and motivating) and Tut Wuri Handayani (control and motivate students for succeed).

THE MODULE HANDBOOK
FACULTY OF BIOLOGY

Study/exam achievements	**1. Theory** a. Midterm: 35% b. Final examination: 35% c. Presentation, attendance and activity: 30% **2. Laboratory Work** a. Weekly test: 20 % b. Laboratory activity: 10 % c. Laboratory report: 40 % d. Final test: 30 %
Forms of media	White board, LCD, Atlas of Protozoology, chart and book of protozoa identification
Literature	1. How To Know Protozoa,… 2. Chatterjee KD. 2009. *Parasitology:Protozoology and Helminthology*. 13th ed. CBS Publishers and Distributors PVT.LTD. New Delhi. 3. Marine Protozoa,…. 4. Ash, LR. and T.C. Orihel. 1980. *Atlas of Human Parasitology*. American Society of Clinical Pathologists Publ. Chicago. 5. Anderson, O.R. Conparative Protozoology, Ecology, Physiology, Life History. Springer Verlag Berlin Heilderberg. New York London Paris Tokyo. 6. Capriulo, G.M. 1990. Ecology of Marine Protozoa. Oxford University Press. New York, Oxford. 7. Krier, J.P. 1993. Parasitic Protozoa. Academic Press, Inc. 1250 Sixth. Avenue San Diego, California. 8. Lee J.J. and O.G. Andersons. 1991. Biology Of Foraminifera. Academic Press. Harcout Brace Jounovich London San Diego New York Boston Sydney Tokyo Toronto. 9. Bykhdvskaya- Paulovskaya T.E., S.S. Shulman. 1996. Protozoology. Thieme Medical Publishers Inc. New York. 10. Levine N.P. 1990. Protozoologiy Veteriner. Gadjah Mada University Press. 11. Pioner G.A. and G.M. Thomas. 1984. Laboratory Guide to Insect Pathogens and Parasites. Plemun Press. New York and London.