THE MODULE HANDBOOK
FACULTY OF BIOLOGY

Animal Structure and Development

Module code	BIO 20701
Module level	1st year of Undergraduate Program in Biology
Abbreviation, if applicable	-
Sub-heading, if applicable	-
Courses included in the module, if applicable	-
Semester/term	Even
Module coordinator(s)	Drs. Yohanes Sugiyanto, M.S.
Lecture(s)	1. Drs. Yohanes Sugiyanto, M.S. 2. Drs. Abdul Rachman, M.Si. 3. Susilohadi, S.Si., M.Si., Ph.D. 4. Dr. Bambang Retnoaji, M.Sc. 5. Dr.med.vet. drh. Hendry T.S.S.G. Saragih, M.P. 6. Luthfi Nurhidayat, S.Si., M.Sc.
Language	Indonesia
Classification within the Curriculum	Compulsory
Teaching format/class hours per week during the semester	This course is organized into 3 classes and planned to have 14 teaching weeks and 2 weeks of examination.
Workload	Estimated working hour: 14 hours/week.
Credit points	3-1 credits
Requirements	General Biology (BIO 10001)
Learning goals/ competencies	**1. Knowledge and understanding** To understand the principal and theoretical basic concept of animals body structures, functions, and development. **2. Ability/intellectual skill** a. Identify the position of system's organs and the connection to the other system's organs b. Name the name of organs which connected to a body system. c. Identify and name the cells or tissues which compound the organ and its functions. d. Understand the phases of animal development.

	3. Practical skill a. Skillfully do macroscopic dissection. b. Use the microscope to inspect the microscopy structure of organs. **4. Managerial and transferable skill** a. Do a scientific study research about animal structure and development b. Either work individually or work in a team. **5. Attitude** To use the basic knowledge of animal structure and development to do some researches about either macroscopic or microscopy structure and the development of animals; researches about animal physiology, animal systematics, etc.
Content	Animal Structure and Development is an introduction subject which give understanding about systems and symmetrical structure and body pattern of animals, body parts, four major tissues, basic histological structure of integument, muscles, skeletal system, digestive system, respiratory system, circulatory system, system of excretory and reproduction, nerve, endocrinal glands, sense organs and development phases (includes gametogenesis, fertilization, segmentation, blastulation, gastrulation, organogenesis and embryonic membrane), specially in Vertebrates.
Study/ exam achievements	1. Theory a. Midterm: 40% b. Final examination: 40% c. Individual assignment: 15% d. Quiz: 5% 2. Laboratory work a. Preliminary test: 20% b. Pretest: 10% c. Drawing(s): 10% d. Activity: 10% e. Poster: 20% f. Laboratory work examination: 30%
Forms of media	White board, LCD, notebook, video and animation, and specimen.
Literature	1. FEDUCCIA, A. AND E. MC. CRADY. 1997: TOOREY'S MORPHOGENESIS OF THE VERTEBRATES. JOHN WILEY & SONS. INC. NEW YORK 2. GILBERT, S.F. 1991: DEVELOPMENTAL BIOLOGY. THIRD EDITION. SINAUER ASSOCIATES, INC.PUBL. SUNDERLAND, MASSACHUSETTS.

3. HILDEBRAND, M.. 1995: ANALYSIS OF VERTEBRATE STRUCTURE. JOHN WILEY & SONS. NEW YORK.
4. KARDONG, K.V. 2000: VERTEBRATES. COMPARATIVE ANATOMY, FUNCTION EVOLUTION. MC. GRAW HILL. BOSTON.
5. KENT, G.C AND L. MILLER. 1997: COMPARATIVE ANATOMY OF THE VERTEBRATES WM.C.BROWN PUBL. DUBUQUE
6. WALTER,HE, AND L.P. SAYLES. 1961: BIOLOGY OF THE VERTEBRATES. A COMPARATIVE STUDY OF MAN AND HIS ANIMAL ALLIES. THE MACMILLAN CO., NEW YORK.