



# THE MODULE HANDBOOK

## FACULTY OF BIOLOGY

### Patoanatomy

<b>Module code</b>	BIO 30704
<b>Module level</b>	2 <sup>nd</sup> year of Undergraduate Program in Biology
<b>Abbreviation, if applicable</b>	-
<b>Sub-heading, if applicable</b>	-
<b>Courses included in the module, if applicable</b>	-
<b>Semester/term</b>	Odd and Even
<b>Module coordinator(s)</b>	Dr. med.vet., drh. Hendry T.S.S.G. Saragih, M.P.
<b>Lecture(s)</b>	1. Dr. Bambang Retnoaji, M.Sc. 2. Dr. med.vet., drh. Hendry T.S.S.G. Saragih, M.P. 3. Luthfi Nurhidayat, S.Si., M.Sc. 4. Drs. Abdul Rachman, M.Si. 5. Zuliyati Rohmah, S.Si., M.Si., Ph.D.
<b>Language</b>	Indonesia
<b>Classification within the Curriculum</b>	Elective course
<b>Teaching format/class hours per week during the semester</b>	This course is organized into one class and planned to have 14 teaching weeks and 2 weeks of examination.
<b>Workload</b>	Estimated working hour: 10,5 hours/week.
<b>Credit points</b>	2-1 credits
<b>Requirements</b>	Animal Structure and Development (BIO 20701)
<b>Learning goals/competencies</b>	<ol style="list-style-type: none"><li><b>1. Knowledge and understanding</b><ol style="list-style-type: none"><li>a. Upon completion of this course, students will be able to Define and describe the histological characteristics of normal cells, tissues and organ system. Describe the subunits of each component and their role in its function.</li><li>b. Describe the structural characteristics of the four basic tissue types.</li><li>c. Describe the functional capabilities of each tissue type and relate them to the structure.</li><li>d. Define and discuss the basic histological structure of some systems.</li></ol></li><li><b>2. Ability/intellectual skill</b><ol style="list-style-type: none"><li>a. Correlate between histological structure &amp; function of any cell or tissue.</li></ol></li></ol>



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- b. Select appropriate methods to reveal specific microscopic features of cells and tissues.
- c. Diagnose slides different from those seen during his course but of the same organs or tissues previously studied.
- d. Identify and differentiate between different types of tissues and organ system.
- e. Differentiate between different tissues and organs in histological slide seen under the microscope.
- f. Differentiate analyze between normal and abnormal Structure.

### 3. Practical skill

- a. Construct research proposal.
- b. Adopt and develop research method and techniques related to animal histology.
- c. Designing research in the field of animal histology
- d. Handle instruments used to prepare and study histological specimens.
- e. Handle the histological glass slides and examine them using the maximum microscopic facilities. Identify various types of stains & micro techniques.

### 4. Managerial and transferable skill

- a. Describe the methods of studying cells and tissues.
- b. Mention and describe the different types of tissue
- c. Mention and describe the specific characteristic of cell components in relation to the functions of each component.
- d. Demonstrate knowledge of the structure and function of the body and its major organ systems and of the molecular and cellular mechanisms

### 5. Attitude

- a. work in team works.
- b. Appreciate the importance of life long learning and show a strong commitment to improve knowledge.
- c. Use the sources of information to remain current with advances in knowledge and practice
- d. Practicing rule, regulation and etic in scientific activities and daily life

### Content

Animal patoanatomy gives an explanation about the differences between necrotic or degenerative cells/tissues/organs with normal and healthy cells/tissues/organs. This subject also gives explanation about chronological occurrence of those disorders, including the possibility of circulatory disorders, cellular biochemical balance disorders, fuctional disorders, and etc. This Subject provide some adequate provision to analyze the organ structure, so that it can be applied in



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	some research related to structural alteration caused by external or internal factors.
<b>Study/exam achievements</b>	<b>1. Theory</b> <ul style="list-style-type: none"><li>a. Midterm: 40%</li><li>b. Final examination: 40%</li><li>c. Quiz: 20%</li></ul> <b>2. Laboratory work</b> <ul style="list-style-type: none"><li>a. Weekly reports: 35%</li><li>b. Presentation and discussion: 35%</li><li>c. Independent practical report: 30%</li></ul>
<b>Forms of media</b>	White board, notebook, specimen, LCD
<b>Literature</b>	<ol style="list-style-type: none"><li>1. Damjanov, I. (1996). Histopathology. A Color Atlas &amp; Text book (Terjemahan) Williams and Welkins.</li><li>2. Handari S. &amp; L. Handoyo, 2003. Pengaruh infus jamur Lingzhi terhadap struktur mikroanatomi hepar mencit yang terakumulasi timbal. Skripsi, Fakultas Biologi UGM.</li><li>3. Handari S. &amp; Masrifah, 2003. Pengaruh air sumur yang mengandung kalsium karbonat terhadap struktur mikroanatomi lendir an duodenum mencit. Skripsi, Fakultas Biologi UGM.</li><li>4. Hill, R.B. &amp; Mariano, F.L. (1980). Principle of Pathobiology. Oxford University Press, Inc. Third Ed</li><li>5. Rusmiyati &amp; Handari S. 1997. Pengaruh ekstrak kayu secang terhadap struktur mikroanatomi tubulus seminiferus testis dan kualitas spermatozoa mencit. Thesis Program Pascasarjana, Fakultas Biologi UGM.</li><li>6. Price. S.A and L.M. Wilson (1982). Pathophysiology, Clinical concepts of Disease Processes (Terjemahan) McGrawhill, Inc.</li></ol>