

## Module Handbook

Module designation	Animal Embriology (course code MPB 2216)
Semester(s) in which the module is taught	4
Person responsible for the module	<i>Ari Hepi Yanti, M.Sc &amp; Diah Wulandari, M.Sc</i>
Language	<i>Bahasa Indonesia</i>
Relation to curriculum	<b><i>Compulsory</i></b>
Teaching methods	<i>lecture and lab works</i>
Workload (incl. contact hours, self-study hours)	<p><i>(Estimated) Total workload: 170 minutes x 3 unit x 16 = 8,160 minutes (136 hours)</i></p> <p><i>Contact hours (please specify whether lecture, exercise, laboratory session, etc.):</i></p> <p><i>lecture: Tuesday, 09:30-11.10 AM (Class : B) and Thursday, 01:00 - 02:40 PM (Class: A)</i></p> <p><i>laboratory session: Tuesday, 08:00 - 11:00 AM (Class :B) and Friday, 01:00-16:00 PM (Class: A)</i></p> <p><i>Private study including examination preparation, specified in hours<sup>1</sup>: 180 minutes x 16 session = 2,880 minutes (48 hours)</i></p>
Credit points	<i>3 unit</i>
Required and recommended prerequisites for joining the module	<i>Histology (MPB 2110)</i>

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<sup>1</sup> When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

<p>Module objectives/intended learning outcomes</p>	<p><b>Knowledge:</b></p> <p><i>Mastering and being able to apply biological science and other scientific fields that support the development of biological science</i></p> <p><b>General skill:</b></p> <p><i>Able to work in teams and communicate actively orally and in writing in the field of biological sciences</i></p> <p><b>Specific skills:</b></p> <p><i>Mastering biological instruments and methodologies and being able to apply them in the management of tropical wetland resources</i></p>
<p>Content</p>	<p><i>The subject exposes students to the basic knowledge required to understand animal embryology principles. Students will be acquainted with the principles of reproduction, which includes the female reproductive system: the structure and function of the female reproductive organs, the ovarian cycle, and external factors that affect the female reproductive system. The male reproductive system includes the structure and function of the male reproductive organs and external factors that affect the male reproductive system. Gametogenesis: oogenesis, spermatogenesis. Fertilization: theory and mechanism. Zygote division/segmentation: definition, classification, and mechanism of segmentation, and planes of division. Blastulation. Gastrulation. Tubulation and Neurulation. Organogenesis: formation of different organs. Extraembryonic membrane. Molecular embryology: molecular strategies in development and genome in animal</i></p>
<p>Examination forms</p>	<p><i>Written test and lab report</i></p>
<p>Study and examination requirements</p>	<p><i>Re-registration and 75% attendance.</i></p>
<p>Reading list</p>	<ol style="list-style-type: none"> <li><i>1. Baslinsky, B.I. 1981. Introduction to Embryology. 4 th ed. W.B. Saunders. Co. London.</i></li> <li><i>2. Kalthoff, K. 1996. Analysis of Biological Development. McGraw-Hill. New York.</i></li> <li><i>3. Hodge R. 2010. Developmental Biology: From a cell to organism. Facts On File Inc. New York.</i></li> <li><i>4. Sherwood L. 2010. Human Physiology from cell to System. Brooks USA</i></li> </ol>