

**SEMESTER I**  
**LSM4252: ANIMAL DEVELOPMENT AND REPRODUCTION**

**Prerequisite:** LSM3233

**Workload:** 30 h lectures + 12 h tutorials/presentations + 8 h assignments/readings

This module covers the events and mechanisms leading to the development, growth, maturation of an individual, and eventually to the reproduction and propagation of a new generation. Use of animal models and selected topics to highlight the current trends in animal development and reproduction

S/N	Topics	Lecture hours
1.	<b>The master regulator of reproduction: the brain</b> <b>Reproductive hormones of the pituitary and their molecular regulation</b> <b>Activation of spermiation and ovulation</b> <b>Modes of fertilization, mammalian implantation and pregnancy</b>	10 Winkler, Christoph W
2.	<b>Gametogenesis</b> <b>Germ cells:</b> (i) specification; (ii) non-autonomous specification by cell-cell interaction; (iv) germ cells in development; (v) germ cells in culture; (vi) genes important for germ cells;  <b>Reproduction modes in animals: diversity and manipulation</b> Parthenogenesis, gynogenesis, androgenesis, hybridogenesis; induced gynogenesis & androgenesis; induced polyploidy	10 Hong Yunhan
3.	<b>The essential tools of (reproductive) genomics:</b> Asexual vs. sexual reproduction: why is latter more successful?; The war of sexes at various levels; The chromosomal basis of sex; The molecular basis of sex determination.	10 Laszlo Orban
<b>Total Lectures: 30h</b> <b>Tutorials: 6h</b> <b>Student presentations/CAs 6h</b> <b>Assignments &amp; readings 8h</b>		
<b>Total hours:</b>		50h

**TEXT BOOK:**

- (1) Essential Reproduction, Martin H. Johnson , Blackwell Publishers, 5th edition (2007).  
 (2) The Genetics and Biology of Sex Determination, (Novartis Foundation Symposium No. 244), D. Chadwick and J. Goode, 2002. John Wiley and Sons.

**MODE OF ASSESSMENT:**

60 % CA (3 x CA 20% each), to be held after each third of the course. CA will be a number of short answer questions.  
 40 % Final exam (short assays covering the entire course content).

**MODULE CO-ORDINATOR:**

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