

## 课程大纲 COURSE SYLLABUS

1.	<b>课程代码/名称 Course Code/Title</b>	动物形态发生原理 (Principles of animal morphogenesis)
2.	<b>课程性质 Compulsory/Elective</b>	专业课 (major)
3.	<b>课程学分/学时 Course Credit/Hours</b>	3/48
4.	<b>授课语言 Teaching Language</b>	中英文 (bilingual, Chinese and English)
5.	<b>授课教师 Instructor(s)</b>	刘东 (Liu Dong)
6.	<b>先修要求 Pre-requisites</b>	动物学、组织胚胎学以及细胞和分子生物学 (Zoology, Embryology, Cell and Molecular Biology)
7.	<b>教学目标 Course Objectives</b>	
	<p>该课程旨在让学生从宏观上对模式动物的胚胎，组织器官的形态发生，及其纵向演化有一些基本了解，因为这些模式动物早已大量用于生命科学和医学研究中。对于有志于从事基础生物学研究，如发育生物学（胚胎发生，组织器官发育调控，性别与生殖，衰老，死亡，再生等）的学生，这门课十分必要。</p> <p>This course has been designed to allow students to have some basic understanding of model animal embryogenesis, tissue/organ morphogenesis, and their evolution origin. Model animals have been widely used in life science and medical research. For students who are interested or want to pursue a research career in developmental biology, this class will be good place to learn how and why some interesting research (embryogenesis, regulation of tissue/organ development, sex and reproduction, aging, death, regeneration, etc.) was conducted.</p>	
8.	<b>教学方法 Teaching Methods</b>	
	<p>以课堂讲授为主，辅以多媒体展示，专题报告和讨论。</p> <p>Classroom teaching, multimedia presentations, selected topic seminars and class discussion.</p>	
9.	<b>教学内容 Course Contents</b>	
	<b>Section 1</b>	模式动物的基本发育过程。Introduction of basic development processes of model animals.
	<b>Section 2</b>	组织/器官再生与干细胞。Tissue/organ regeneration and stem cells.
	<b>Section 3</b>	性别发育与生殖。Sex development and reproduction.
	<b>Section 4</b>	附肢发育。Appendage development.
	<b>Section 5</b>	神经发育。Neural development.
	<b>Section 6</b>	基因编辑与修饰技术。Gene editing and modification techniques.
	<b>Section 7</b>	细胞死亡。Cell death.
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10.	<b>课程考核 Course Assessment</b>	
	<p>这门课程将在授课期间、期中和期末进行如下的考核。平时授课期间将进行多次随堂随机测验。此项占比 20%。期中考试根据课程所授内容，学生自主选题，写一篇综述文章。此项占比 30%。期末考试为闭</p>	

卷考试，包括多项选择题加主观题。此项占比 50%。

This class will be subjected to the following assessments: there will be one midterm (30%), one final (50%) and few quiz in random (20%). Students should choose their own topics and write a review article for midterm. At final is composed of multiple-choice questions and subjective questions.

**11. 教材及其它参考资料 Textbook and Supplementary Readings**

1. 张红卫 主编《发育生物学（第 3 版）》.北京：高等教育出版社，2013 年。Zhang Hongwei, ed. 《Developmental biology》 (Third Edition). Beijing: Higher Education Press, 2013.

2. Scott F.Gillbert 主编 《Developmental Biology》（10th Edition），英文原版，2013 年。Scott F.Gillbert, ed. 《Developmental biology》（10th Edition). English Original, 2013.