

## Syllabus: BSC 456/581 – Genes and Development – Spring 2006

**Instructor:** Dr. (Patrick) Simon Collier  
**Email:** simon.collier@marshall.edu  
**Office:** Science Building 390      **Phone:** 696-6111  
**Research Lab:** Science Building 361B/363      **Lab Phone:** 696-4673

**Office Hours:** Due to research commitments I operate an 'open door' policy rather than 'office hours'. Students are welcome to contact me through email or phone to arrange a time to discuss matters relating to the course. Students may also drop by my office or lab at anytime although I cannot guarantee to be able to spend substantial time with students who call without prior arrangement.

**Course prerequisite:** BSC324 Genetics or BSC322 Cell Biology.

### Learning objectives:

- To appreciate the role of genes in animal and plant development
- To improve written and verbal presentation of scientific data
- To improve group working skills

<b>Assessment:</b>	First test	15%
	Mid Term Exam	25%
	Written assignment 1	15%
	Written assignment 2	15%
	Final exam	30%

**Additional Graduate / Honors assessment:**  
Presentation (30 minutes)

**Students will not be allowed to 'makeup' test absences except in exceptional circumstances and with prior notice (unless medical/family emergency)**

<b>Grading:</b>	80-100%	A
	70-79%	B
	60-69%	C
	50-59%	D
	<50%	F

### **Suggested Course Texts:**

The course will **not** be based around a single textbook:

**Developmental Biology, 7<sup>th</sup> Edition Scott F. Gilbert; Sinauer Associates inc.** Gilbert's book is wide ranging and contains a lot of descriptive anatomy in addition to a good coverage of developmental genetics.

**Principles of Development, 2<sup>nd</sup> Edition: Lewis Wolpert; Oxford University Press..** Wolpert's book is well written and has excellent illustrations of many well-studied developmental events. However, it does not always have detailed description of molecular mechanisms.

**Attendance:** Be aware that it is your **own responsibility** to identify and cover the material taught during this course. You may be advised of ongoing developments in the course by email so please check your email regularly.

**Class schedule:** Mon 3.00-3.50pm; Wed 3.00-3.50pm; Fri 3.00-3.50pm. **Room 374**

**N.B.** The content for specific lecture classes is tentative. Your **constructive** comments on course improvement are welcome.

Jan	9, 11, 13:	Gene structure and function / Model Organisms
	<b>Jan 16 – Martin Luther King Holiday</b>	
Jan	18, 20:	Developmental Concepts, Mechanisms and Techniques
Jan	23, 25, 27	Morphogen Gradients and Transcriptional Regulation
Jan/Feb	30, 1, 3,	Segmentation Genes and Compartments
Feb	6, 8,	Homeotic Genes
	<b>Feb 10 – First test</b>	
Feb	13, 15, 17,	Test Review / Gene Cassettes
Feb	20, 22, 24,	Morphogenesis / Organogenesis
Feb/Mar	27, 1	Neural Development / Lateral Inhibition
	<b>Mar 3 – Mid Term Exam</b>	
Mar	6, 8, 10	Exam review / Assignments set
Mar	13, 15, 17	Aspects of vertebrate development
	<b>Mar 19-26 – Spring vacation</b>	
Mar	27	Introduction to student presentation topics
	<b>Mar 29 and 31</b>	<b>Preparation for student presentations (student led)</b>
Apr	3, 5, 7	Student presentations
Apr	10, 12, 14	Student presentations
Apr	17, 19, 21	Aspects of vertebrate development
	<b>Apr 21</b>	<b>Last written assignment due</b>
Apr	24, 26, 28	Dead week – course summary/review
	<b>May 1: 3.00pm – Final exam</b>	

**Note:** This syllabus is subject to change. Changes will be made with prior notice and in consultation with course students