

BIOL 3050 DEVELOPMENTAL BIOLOGY

Term: Winter

Time: Lectures MWF 13:35-14:25

Laboratories W 14:35-17:25; R 10:05-12:55 and 14:35 -17:25

Teaching Staff: Dr. Sophia Stone (lecturer); Rm. 5134 LSC, 494-4541, Sophia.Stone@dal.ca
Lab Instructor: Margi Cooper; Rm. 4014
LSC, 494-3847

Office hours: By appointment

Lecture format: Lectures consist of three one hour sessions each week. The lecture schedule indicates the topics covered in each session. Please note that the schedule is subject to change.

Text: *Principles of Development*, 4th. Ed., 2011; by Lewis Wolpert and Cheryll Tickle. The 3rd edition of the text can also be used (*Principles of Development*, 3rd. Ed., 2007; by Lewis Wolpert). *Biology 3050 Laboratory Manual*.

Other Resources: The following texts have been placed on reserve in the Killam library.
Mechanisms in Plant Development by Ottoline Leyser and Stephen Day, Blackwell Publishing; *Developmental Biology* (9th edition) by Scott F. Gilbert, Sinauer Associates Inc; *An Introduction to Plant structure and Development* by Charles B. Beck; *Principles of Developmental Biology* by Fred H. Wilt and Sarah C. Hake.

Course Website: A course website has been created on Online Web Learning (OWL). You can access the website via your MyDal page. Biology 3050 should be listed under the course list tab. You should check this page on a regular basis as your grades (lectures and labs), announcements and data from your laboratories will only be posted on this site.

Assessment:

Lecture Midterm I	15%
Lecture Midterm II	15%
Lecture Final Exam	30%
Lab Submissions/Reports	26.0%
Lab Exam	14.0%

Exam Format: All lecture exams will include multiple choice and short answer questions.

Lecture exams will only cover material covered during the lecture session. The lab exam is designed to clarify developmental mechanisms and concepts. For example the exam will consist of questions asking you to identify of specimens as well as structures within a specimen.

Grade Scale: A+ 90-100

A 85-89.9

A- 80-84.9

B+ 75-79.9

B 70-74.9

B- 65-69.9

C+ 62-64.9

C 58-61.9

C- 55-57.9

D 50-54.9

F <50

Lecture Schedule:

Lecture	Topic
SECTION I	
I.1	Introduction Overview of Animal Development
I.2	Origins and Approaches to Developmental Biology
I.3	Gametogenesis Fertilization
I.4	Cleavage, Gastrulation and Neurulation: Principles and Consequences
I.5	Cleavage: Mechanisms and Patterns Morphogenesis
I.6	Morphogenesis cont.
I.7	Cell Specification and Determination
I.8	Axis Formation: Setting Up the Body Axis
I.9	Germ Layer Specification Patterning the Early Embryo
Review	
MIDTERM EXAM I	
I.10	Patterning the Early Embryo cont.
I.11	Neural Tube Induction and Patterning
I.12	Neural Tube Induction and Patterning cont.
I.13	Cell Differentiation
I.14	Neural Crest Cell Migration and Differentiation
I.15	Limb Development and Regeneration
I.16	Limb Development and Regeneration cont.
SECTION II	

II.1	Overview flowering plant life cycle Model Organism - <i>Arabidopsis thaliana</i> Experimental approaches to plant
II.2	Plant 101: plant cell and whole plant Differences in plant and animal development
II.3	Gametophyte development, Pollination and Fertilization
Review	
MIDTERM EXAM II	
II.4	Gametophyte development, Pollination and Fertilization
II.5	Embryogenesis, Seed formation And Germination
II.6	Embryogenesis, Seed formation and Germination
II.7	Apical meristems and Primary development
II.8	Apical meristems and Primary development
II.9	Flower and Leaf Development
II.10	Flower and Leaf Development
II.11	Flower and Leaf Development
II.12	Hormones in plant development
II.13	Hormones in plant development
Review	
FINAL EXAM	

STUDENT ACCESSIBILITY SERVICES: Students may request accommodation as a result of barriers related to disability, religious obligation, or any characteristic under the Nova Scotia Human Rights Act. Students who require academic accommodation for either classroom participation or the writing of tests, quizzes and exams should make their request to the Office of Student Accessibility & Accommodation (OSAA) prior to or at the outset of each academic term. Please see www.studentaccessibility.dal.ca for more information. Students should also ensure that all appropriate documentation from SAS is given to me in a timely fashion.

REGULATIONS REGARDING MISSED EXAMINATIONS/ASSIGNMENTS:

The following statement is taken from <http://ug.cal.dal.ca/ACRG.htm> which outlines Academic regulations on missed exam and assignments.

At the discretion of the instructor, alternate arrangements for examinations, tests or the completion of assignments may be made for students who are ill, or in other exceptional circumstances.

Where illness is involved, a certificate from the student's physician will be required. This certificate should indicate the dates and duration of the illness, when possible should describe the impact it had on the student's ability to fulfill academic requirements, and should include any other information the physician considers relevant and appropriate. To obtain a medical certificate, students who miss examinations, tests or the completion of other assignments should contact the University Health Services or their physician at the time they are ill and should submit a medical certificate to their instructor as soon thereafter as possible. Such certificates will not normally be accepted after a lapse of more than one week from the examination or assignment completion date.

For exceptional circumstances other than illness, appropriate documentation, depending on the situation, will be required. Requests for alternate arrangements should be made to the instructor in all cases.

Please see <http://ug.cal.dal.ca/ACRG.htm> for more details.

ACADEMIC INTEGRITY:

Dalhousie defines academic integrity as meaning that we are honest and accurate in creating and communicating all academic products. Acknowledgement of other people's work must be done in a way that does not leave the reader in any doubt as to whose work it is. Academic integrity means trustworthy conduct such as not cheating on examinations and not misrepresenting information. It is the student's responsibility to seek assistance to ensure that these standards are met.

You should be familiar with Dalhousie University policies on academic integrity as these policies will be followed for this course. Information of Dalhousie's policies can be found at....

- <http://academicintegrity.dal.ca>
- Pages 53-64 of your 2010-2011 Academic Procedures handbook
- Pages 22-25 of your 2010-2011 Undergraduate Calendar