

**DEVELOPMENTAL BIOLOGY
PCB4253**

Fall 2016
Tu-Thrs 9:30-10:45
OE105

Professor: Lidia Kos (kosl@fiu.edu)
Office hours: by appointment, AHC1 219A

Textbook: Developmental Biology (Eleventh Edition)
Gilbert and Barresi, Sinauer Associates, Sunderland Massachusetts

Grade Scheme: **A:** 90-100; **B:** 80-89; **C:** 70-79; **D:** 60-69; **F:** 59 or below
Grades will not be curved

Distribution:

Exams: 50%
Paper reports: 30%
In class assignments: 20%

Anything handed in late will be docked 2 points (out of 10)

	What's going on	TOPIC	READING
Aug			
23		Intro/ Dev Bio main questions	Chapter 1
25		Important definitions and approaches	Chapter 1
30		Cell Specification	Chapter 2
Sept			
01	In Class Assignment (chapters 1 & 2)	Gene Expression Regulation	Chapter 3
06		Gene Expression Regulation	Chapter 3
08		Cell-Cell Communication	Chapter 4
13		ECM	Chapter 4
15		Signaling	Chapter 4
20	EXAM 1		Chapters 1-4
22		Stem Cells	Chapter 5
27		Adult stem cells	Chapter 5
29	Paper 1 Discussion	Stem Cell Niches	Chapter 5
Oct			
04	Paper 1 report due	Fertilization	Chapter 7
06		Protostome cleavage/cell specification	Chapter 8
11		Drosophila – seg./homeotic genes	Chapter 9
13	In Class Assignment (chapters 8,9 & 10)	Deuterostome cleavage/gastrulation	Chapter 10
18	EXAM 2		Chapters 5,7-10
20		Amphibian axis formation /organizer	Chapter 11
25		Early development in birds	Chapter 12
27	In Class Assignment (chapters 11&12)	Early development in mammals	Chapter 12
	Oct 31: last day to drop with DR		
Nov			
01		Ectoderm: Nervous system	Chapter 13
03	In Class Assignment (chapters 13&14)	Ectoderm: Nervous System	Chapter 14
10	Choose a paper (NC stem cell niche)	Ectoderm: Neural Crest	Chapter 15
15	EXAM 3		Chapters 11-15
17	NC paper report due	Mesoderm: Somites	Chapter 17
22		Limb Development	Chapter 19
24	Thanksgiving		
29		Regeneration	Chapter 22
Dec			
01	EXAM 4 Your Choice Papers report due		Chapters 17,19,22

Developmental Biology Assignments

Exams (50 % total grade)

A combination of short answer and long essay questions including all material presented up to that day. Each exam is worth 10 points (I will then normalize the total of all 4 tests to 50% of the final grade). If you are absent on the day of the exam, you will receive a 0. Only under exceptional circumstances will make ups be administered (hospitalization, death of close family member). Documentation will need to be presented as soon as the student returns to class.

Choose a Paper and Reports (30%)

The theme of our course is The Stem Cell Niche. We are going to read a series of recent papers (2010-2015) investigating the nature of the stem cell niche. I will choose the first paper and you will discuss it with your group (we will arrange groups of 4-5 students) on September 29th. During this first discussion you will identify the main question, approach, and conclusion of the paper. You will then submit your own report about this paper on October 4th.

You will choose one paper prior to the second discussion day (Nov 10). The paper (a recent peer-reviewed primary literature paper) will relate neural crest cells to the stem cell niche. Bring the reference to class (Entire reference and abstract) and turn it in to me. You will have to briefly present it to your group and argue why this should be the paper chosen. The group will then give me their choice of paper. I will review all the choices and announce the paper that will be read by all. You will then have to write a report on that paper and turn it to me on the specified dates.

For the last report you will choose your own topic related to the stem cell niche. Identify a topic that we covered in class or is covered in the textbook (even if we did not cover it in class) that is of great interest to you (for example: the stem cell niche in tooth development; the muscle stem cell niche; hair stem cell niche; cancer stem cell niche). Choose two papers (better if they are related or complement each other) about your topic of choice.

The report will consist of 3 paragraphs (The first one will only have two paragraphs since I will choose the paper). The first paragraph will identify the main question (and specific goals) and the approach utilized to address it. The second paragraph will present the results and main conclusion. These two paragraphs should not be simply a copy of the abstract of the paper. You should go over the entire paper and write your own summary. If you PLAGIARIZE you get a 0 in your report. The third paragraph will contain your original choice of paper and a justification for why you chose that particular paper.

For the third report you have to specify your topic, summarize the two papers (you can integrate them) and justify why you chose these papers.

Reports should be 1 page max, typed, double spaced, Arial 11 point, and proof read. Please bring it to class. No reports sent by email will be accepted.

Report 1: 5 points

Report 2: 10 points

Report 3: 15 points

In Class Assignments (20%, 4 points each)

In class assignments will be designed to help you prepare for the exams. I will present you with questions and/or case studies that you will discuss with your group (4-5 people) and provide written answers on the days specified in the schedule. These assignments will be closed book so you should study the pertinent chapters and lecture notes prior to class. If you miss class on the days of the assignments you will receive a 0. No make ups will be given.

ACADEMIC CONDUCT

Florida International University is a community dedicated to generating and imparting knowledge through excellent teaching and research, the rigorous and respectful exchange of ideas, and community service. All students should respect the right of others to have an equitable opportunity to learn and to honestly demonstrate the quality of their learning. Therefore, all students are expected to adhere to a standard of academic conduct, which demonstrates respect for themselves, their fellow students, and the educational mission of the University. All students are deemed by the University to understand that if they are found responsible for academic misconduct, they will be subject to the Academic Misconduct procedures and sanctions, as outlined in the Student Handbook.