

## **Cell and Developmental Biology (BIOL 205)**

### **Section 006**

SPRING 2019

**Dr. Steve Rogers and Dr. Zack Nimchuk**  
TUESDAY AND THURSDAY 9:30AM-10:45AM  
201 COKER HALL

#### **Instructors:**

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#### **Graduate Teaching Assistants:**

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**SAKAI SITE:** (you must have an onyen to log on – go to <https://itsapps.unc.edu/improv/#UserCreateOnyenPlace:createOnyen> if you do not have an onyen.) The Sakai site will have postings from lectures such as outlines, power point slides, lecture goals and objectives, and supplemental material we mention in lecture. We will also post announcements regarding student concerns on this site. It is your responsibility to check it regularly.

**REQUIRED TEXT** for 1st half of the course:

Essential Cell Biology, 4th Edition by Alberts, Bray, Hopkin, Johnson, Lewis, Raff, Roberts, Walter

**REQUIRED TEXT** for 2nd half of the course: Principles of Development, 5th Edition by Wolpert and Tickle.

**STRONGLY RECOMMENDED:** Basic knowledge of biology and chemistry as demonstrated by a C or above in BIOL202

**EXAMS (80% of your final grade):** There will be three tests and a final exam given during the semester. The format will include both multiple choice and open-ended questions. These are not cumulative tests and will only cover the material specified on the course schedule. However, each part of the course builds on the knowledge from earlier sections, so do not “mentally erase” fundamental concepts from earlier in the semester. For all exams, you will need your

PID number as identification on your exam sheet. Additionally, you may be asked to verify your identity, so it is required that you bring your one-card to each exam. Failure to produce a one-card or other picture ID if asked may result in a zero on that exam. Test material to study: guided readings, outlines, homework, lecture notes and activities, recitation assignments, and power point slides. Therefore, to succeed in this class, it behooves you to take each reading/homework seriously and actively engage in all class discussions. There is no option to drop a test grade and there are no extra credit options. Exams must be taken on the dates indicated during the regular class period; no makeup exams except in special circumstances, i.e., medical or family emergency documented in writing prior to missing the exam. The instructors reserve the right to give oral make-up exams. If you still do not understand content after your exam has been graded and would like to discuss concepts, we encourage you to meet with your TA or instructor. If you have a question related to points deserved, you must put it in writing no more than 5 days after an exam has been returned to you and turn it in to your instructor.

**PARTICIPATION (10% of your final grade):** As an incentive to come to class prepared and be engaged, 10% of your grade will come from online quizzes administered through Sakai and with a program called Poll Everywhere that you use through your laptop or mobile phone. Quizzes will be due prior to each lecture and are timed, you will have 1 hour to complete 8-10 questions. This should be plenty of time. Note - missing just a couple of classes can quickly affect your participation grade! See Sakai for the required registration and troubleshooting and grading policy information.

**RECITATION (10% of your final grade):** Attendance and participation in one of the recitations sections is required. These recitations are an extension of the class and allow time to go beyond material in class. They are not “help sessions”, but they will extend your knowledge of the field of cell and developmental biology. Material covered in recitation may be covered on exams too. For recitation, you may also be given pre-class assignments or in-class assignments, each worth 5 points, that are designed to reinforce and deepen your understanding of the material related to the course. Your pre-class recitation assignments must be printed and handed in at the beginning of recitation. In-class assignments are typically group problems. You must work out this problem in groups and turn in one answer on behalf of the group during the recitation period. There will be no make-up opportunities for in-class assignments if you do not attend a recitation in a given week. You may earn up to 5 additional points, during each half of the semester for class participation during the recitation sessions. If you are unable to attend the recitation for which you are registered one week, you may attend another section with prior permission of the TAs if there is room in another section. There is a maximum capacity for each section so please do not assume that you can attend another section if you miss a recitation.

**HOW IS YOUR GRADE DETERMINED?** (Note: there will be no changes to HOW your final average is calculated at the end of the semester and THERE IS NO EXTRA CREDIT...so please don't ask! You will get the grade you EARN!) Your final average is calculated:

Total for the semester =  
 $(0.2 \times \text{Exam 1}) + (0.2 \times \text{Exam 2}) + (0.2 \times \text{Exam 3}) + (0.2 \times \text{Exam 4}) + (0.1 \times \text{participation score}) + (0.1 \times \text{recitation})$

**DIGITAL ETIQUETTE:** This course will require you to use your laptop and/or cell phone during class time. While we recognize that you are an excellent multi-tasker, research suggests that your peers are not. Please be respectful of your classmates and restrict your use of digital devices to course content. If we see that you or your peers are distracted, we will ask you to put

your devices away and you may forfeit your ability to earn participation points that day. There will be times when you have completed your work or answered a poll question, but your peers have not. We ask that you assist your peers when appropriate or use the time to review your notes while you wait. I understand that your devices connect you to your friends and family (a wonderful thing!) but the classroom should be a place apart, however briefly (even if it seems like an eternity to you), from the outside world and distractions. You will learn more if you concentrate on the course while you are here and your classmates will thank you for not impeding their ability to learn.

**PIAZZA:** There are hundreds of you and your questions are important to us. However, it is often difficult for a single instructor with so many students to address all of the e-mails that are received throughout the course of the semester. Therefore, in order to address your questions and concerns more efficiently, we will be using an online platform called “Piazza” this semester. You may post any questions that you have about the course to this site at any time and they will be answered by either a fellow student, a TA, or your instructor. Your questions may be more general and may relate to the course itself or they may be more specific and instead relate directly to content and/or material from class. In any case, Piazza will help you get them answered ASAP. With the exception of private/personal questions and concerns (which are always welcome in our inboxes) please direct all questions to this discussion board. You will receive a welcome e-mail from your instructor granting you access to the course within the first week of the semester and can start using Piazza right away.

### **WHAT YOU SHOULD BRING TO CLASS EVERY DAY:**

1. Outlines/lecture slides from Sakai when available (either printed or on laptop).
2. Extra blank paper for drawings, notes, activities etc. (or tablet computer for drawing)
3. POLL EVERYWHERE device: either your cell phone for mobile access or laptop/ipad/smartphone for web access

### **GOALS OF THE COURSE**

1. To provide you with the core principles of cell and developmental biology. The lecture and the book will introduce you to the fields of cell biology and developmental biology. After this class, you will have a basic understanding of cell and developmental biology and will be equipped to build upon this content with upper level courses in biology.

2. To gain higher level thinking skills that are necessary for scientists.

You should be well –equipped at remembering facts and content with good study habits. We are looking for you to apply and analyze. You are UNC students, we KNOW you can memorize! Move beyond this level of thinking. How can we achieve this? We will have in-class questions to practice this immediately. We will also explore classic experiments as a way of thinking through the logic of experiments and to see where the foundations of this content come from. While these may be new ways of thinking for you, practice is the most important way to gain these skills. FYI: UNC’s medical school sees this is an excellent pre-req course for medical school because it teaches students to think.

3. This course should excite you about basic science and its applications!

**SUPPLEMENTAL INSTRUCTION (SI) and Peer Mentoring:** ALL of the supplemental instructors and peer mentors were VERY successful students of ours and are equipped with the knowledge and skills that you need to be successful in this course. The SI instructors will offer multiple sessions of supplemental instruction a week and will post problem sets for you on Sakai. Peer mentors will offer one-on-one mentoring every week throughout the semester. They will all also be in class helping you learn! In order for them to help you approach and analyze problems, you should bring problem sets and questions to them outside of class. Each session held by an SI instructor or peer mentor will be scheduled for 1 hour - the times and location of these sessions will be posted on Sakai during the first week of class. You are not required to attend either, but attendance is highly recommended, since this is your opportunity to get more help in this course. It is also worth noting that they have all seen many of my exams! I suggest you fit SI or peer mentoring into your schedule and attend weekly as if it is a required class. The contact information for all of SI instructors and peer mentors is listed below. Check Sakai for times and locations.

*What is the difference between SI and peer mentoring?*

SI is going to look like a review session with a group of students in attendance each week. Peer mentors are offering more “one-on-one” help. If you are interested in reviewing the topics more broadly – attend SI. If you feel you need to sit down with someone and work one-on-one, see a peer mentor!

## **TEACHING TEAM**

**Supplemental Instruction (SI) leaders** - these students will sit in class and help students during group activities. In addition, they will run a 1-hour review session every week.

**Peer mentors** - they will also sit and work with students in class, but instead of SI review sessions, they will offer one-on-one peer mentoring office hours- 1-2 hours per week.

**The calendar for SI/peer mentor sessions will be posted on the course Sakai site**

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The Department of Biology values the perspectives of individuals from all backgrounds reflecting the diversity of our students. We broadly define diversity to include race, gender identity, national origin, ethnicity, religion, social class, age, sexual orientation, political background, and physical and learning ability. We strive to make this classroom and this department an inclusive space for all students.

Schedule for first half of the semester (cell biology). Schedule for second half TBA.

Date	Lecture	Assignments to be completed BEFORE class	Topic
Th 1/10	1	Read Chapter 1	Introduction to Cell Biology
Tues 1/15	2	Read Chapters 1 and 2	How to Study Cells
Th 1/17	3	Read Chapters 4 and 11	Proteins, Lipids, and Membranes
Tues 1/22	4	Read Chapter 12	Membrane Transport
Th 1/24	5	Read Chapter 15	Intracellular Compartments and Transport
Tues 1/29	6	Read Chapter 15	Intracellular Compartments and Transport
Th 1/31	7	Read Chapter 14 (p447-469)	Mitochondria
Tues 2/5	8		Exam 1
Th 2/7	9	Read Chapter 16	Cell Communication
Tues 2/12	10	Read Chapter 16	Cell Communication/ The cytoskeleton
Th 2/14	11	Read Chapter 17	The Cytoskeleton
Tues 2/19	12	Read Chapter 17	The Cytoskeleton
Th 2/21	13	Read Chapter 18	Cell Cycle and Cell Death
Tues 2/26	14	Read Chapter 19	Mitosis
Th 2/28	15		Exam 2

#### COPYRIGHT POLICY

All course materials including your class notes and in-class assignments are covered by University Copyright Policy,

@<http://www.unc.edu/campus/policies/copyright%20policy%2000008319.pdf>. This means it is illegal and an honor code offense to share your notes or any other course materials items with anyone not directly affiliated with this particular class. No uploading to non-class sharing sites.