BIOL 853 Genome Evolution
Summer 2020

Instructor Information:
Dr. Dawn Simon
email: simondm@unk.edu
Phone: (308) 865-8470
Office: Bruner Hall of Sciences, Room 201C
Hours: MWF 8:30-9:00 a.m. & 4:00-4:30 p.m.

During the week, I check email messages at least twice a day (once in the morning and once in late afternoon) and will usually respond within 24 (weekday) hours. (For example, if you email me on a Friday afternoon, I will typically respond by Monday afternoon.) In special circumstances, responses may be delayed up to 48 hours.

Course Description:
This course is a survey of current research in genome evolution. The emphasis is on understanding unifying evolutionary principles and the topics include gene duplication, polyploidy, mobile elements and comparative genomics.

Course Objectives:
Students will demonstrate:
1. Knowledge of current issues in genome evolution.
2. The ability to use critical thinking skills to evaluate current research in the field and suggest alternative approaches.
3. The ability to form a coherent evidence-based argument.
4. The ability to find and use and cite appropriate references.

Required Text:
Molecular and Genome Evolution (2016), Dan Graur, Sinaur Associates, Inc.

Computer Requirements:
You are required to have frequent access to a computer with internet connectivity. I expect you to check the Canvas site several times per week (and preferably every day). Please refer to the eCampus website to make sure you meet the minimum hardware/software and internet connection speed required by all UNK eCampus students (http://www.unk.edu/academics/ecampus/resources-info/students/technology/requirements.php). The paper assignments must be completed using Microsoft Office.

Mode of Instruction:
This course is entirely online and comprised of lectures, readings, assignments, and open resource essay exams.

Grades:
The course grade is based on two exams (100 pts each), six quizzes (20 pts each = 120 pts) and discussion board posts (118 pts). Letter grades, using the plus/minus system, will be assigned using the standard grading scale for the Dept. of Biology, as follows: A (93-100%), A- (90-92%), B+ (88-89%), B (83-87%), B- (80-82%), C+ (78-79%), C (73-77%), C- (70-72%), D+ (68-69%), D (63-67%), D- (60-62%), and F (below 60%). Your final grade will be rounded up (so, if you finish with an 82.5% your grade will be a B).

Lectures:
Lectures will be posted by 6:00 p.m. CST on Tuesdays and Thursdays.

Assignments:
Most weeks you will need to complete a reading assignment, a quiz, answer one discussion question using peer-reviewed literature, and interact with other discussion board posts. See schedule on the last page for deadlines. Except under extraordinary circumstances, late assignments will not be accepted.

Reading
Reading assignments will be posted each week on Canvas. The assignments will be from the text book and an occasional paper from the literature.

Discussions
For discussion board assignments, I will post multiple questions/topics on the reading and/or lectures. You will be required to respond to one of the original questions, as well as participate in discussions. A grading rubric is available on Canvas. Each assignment is worth 18 points (108 points total).

Quizzes
Most weeks you will also be required to complete a short multiple choice quiz over the week's material. These will be worth 20 points each.

Exams
The exams will focus on applications of the material discussed in class or from assigned reading material. They will be open resource and generally will require extensive use of additional resources. These exams are time consuming, but not prohibitively so, as long as you learn the required material each week. The goal is for you to be thinking about these subjects throughout the semester and not just while writing the exams. Exams are worth 100 points each.

Academic Integrity:
Plagiarism will not be tolerated. You must cite all sources and rephrase content in your own words. You assume full responsibility for the content and integrity of the work you submit. Students who plagiarize any part of their assignments will at minimum receive a zero on that assignment and could potentially fail this course.

Appropriate References:
For the purposes of this course, an appropriate reference is defined as a peer-reviewed journal article or book chapter, assigned reading material (including your text) and lecture material. Note that in most cases, lecture material will be derived from a clearly cited peer-reviewed publication or your text; in these cases the original source should be cited. More details will be provided on Canvas for how to locate and cite these sources.

Students with Disabilities
It is the policy of the University of Nebraska at Kearney to provide flexible and individualized reasonable accommodation to students with documented disabilities. To receive accommodation services for a disability, students must be registered with UNK Disabilities Services for Students Office, 172 Memorial Student Affairs Building, 308-865-8988 or by email unkdso@unk.edu

Students Who are Pregnant
It is the policy of the University of Nebraska at Kearney to provide flexible and individualized reasonable accommodation to students who are pregnant. To receive accommodation services due to pregnancy, students must contact Cindy Ference in Student Health, 308-865-8219. The following link provides information for students and faculty
regarding pregnancy rights. http://www.nwlc.org/resource/pregnant-and-parenting-students-rights-faqs-college-and-graduate-students

Reporting Student Sexual Harassment, Sexual Violence or Sexual Assault
Reporting allegations of rape, domestic violence, dating violence, sexual assault, sexual harassment, and stalking enables the University to promptly provide support to the impacted student(s), and to take appropriate action to prevent a recurrence of such sexual misconduct and protect the campus community. Confidentiality will be respected to the greatest degree possible. Any student who believes she or he may be the victim of sexual misconduct is encouraged to report to one or more of the following resources:
Local Domestic Violence, Sexual Assault Advocacy Agency 308-237-2599
Campus Police (or Security) 308-865-8911
Title IX Coordinator 308-865-8655
Retaliation against the student making the report, whether by students or University employees, will not be tolerated.

Course schedule:

Week		Topic	Assigned Reading[1,2]
1	5/26	Course Introduction	Introduction
		Review of Basic Principles of Evolution	Ch. 1 & p. 492-496
2	6/1	Evolution by Duplication	Ch. 7 (p. 273-281, 283-295, 297- 325)
3	6/8	Evolution by Molecular Tinkering	Ch. 8 (p. 339-356, 368-372, 383-385)
4	6/15	**Exam 1**	
5	6/22	Mobile Elements in Evolution	Ch. 9 (p. 391-404, 417-430, 431-446)
6	6/29	Prokaryotic Genome Evolution	Ch. 10 (p. 451-471, 477-485
7	7/6	Eukaryotic Genome Evolution	Ch. 11 (p. 505-527, 532-537, 558-565)
8	7/13	**Exam 2**	

[1]in Graur, "Molecular and Genome Evolution"
[2]Updated reading assignments will be provided on Canvas

Assignment Deadlines:

Week	Topic	Assignment	Due (11:59 p.m. CST)
1	Introduction	Discussion introduction	5/29
	Principles of Evol.	Discussion board #1	6/2
		Quiz #1	6/3
2	Evol by Duplication	Discussion board #2	6/9
		Quiz #2	6/10
3	Evol by Mol. Tinkering	Discussion board #3	6/16
		Quiz #3	6/17
4		Exam 1	6/23
5	Mobile Elements	Discussion board #4	6/30
		Quiz #4	7/1
6	Prokaryotes	Discussion board #5	7/7
		Quiz #5	7/8
7	Eukaryotes	Discussion board #6	7/14
		Quiz #6	7/15
8		Exam 2	7/17