

MICR 302: Introduction to Molecular Biology

Instructor: Dr. Bethany Rader

Class Meeting: 12:00 – 12:50pm MWF

Office: Lindegren Hall, Room 34

Class Location: Lawson 0131

Office Phone: 618-453-7821

Email: bethany.rader@siu.edu

Office Hours: M 1:00 – 2:30pm, or by appointment

Course Objective:

To gain a fundamental understanding of the molecular biology of the cell, including the structures and functions of biological molecules, microbial genetics, and the transfer, alteration, and regulation of genetic information.

Course Description:

Molecular structure, dynamics, and genetics of living cells and viruses with particular attention to the transfer of biological information.

Course Website:

All course material (except the text books) will be available through Desire2Learn (<https://online.siu.edu>).

Assigned Reading:

Required Text: Molecular Biology Made Simple and Fun, 4th edition (older editions are acceptable), 2010, by D.P. Clark and L.D. Russell, Cache River Press.

Additional text (NOT REQUIRED): Molecular Biology, 2nd edition, 2012, by D.P. Clark and N.J. Pazdernik, Academic Press. This text contains more detailed information about the class material, but is not required for the class.

Office hours:

My office hour will be held on Mondays after class (1:00 – 2:30pm). If you are not free at this time, you may schedule an appointment to meet with me at another time. You may also email me with questions or comments (bethany.rader@siu.edu). **When emailing please include “MICR 302” in the subject line.** This ensures that I will see your email. I will try to answer your email in within 24 hours; however, I do not always check my email in the late evenings or weekends.

Lecture Slides:

Lecture slides will be available for download as PDFs from the course website shortly before the lectures.

Grading Policy:

There will be four 100 point exams, a 100 point final, and ten 10 point quizzes for this course. Your two lowest scoring quizzes will be dropped. In addition, your lowest scoring test will be dropped (the final may not be dropped), resulting in a total of 480 points for this course. **There will be no make-up quizzes** - missed quizzes will count as dropped quizzes or zeroes (after two missed quizzes). **A missed exam will count as your dropped exam.** Any other rescheduling is at the discretion of the instructor.

Final grades will be based on the following scale:

A = 480 – 432 (100--90%)

B = 431 – 384 (89--80%)

C = 383 – 336 (79--70%)

D = 335 – 288 (69--60%)

F = < 288 (<60%)

Exams:

Exams may be rescheduled at the discretion of the instructor, however proof of absence (for example, a doctor's note) will be required for rescheduling. Failure to take an exam on the scheduled date without an approved absence will result in a drop for the first absence and a zero (F) for any additional skipped exams. Midterm exams will encompass material covered in lecture. Please note that the final exam is cumulative. Any changes to material covered by exams will be added to syllabus updates and announced in class.

Cumulative Final Exam: 100 points covering ALL MATERIAL

Quizzes:

Make up quizzes **will not be offered**. As your lowest two quizzes are dropped, a missed quiz due to absence will simply be considered one of your drops

Attendance:

I will not take attendance for this class. The responsibility to attend class is yours alone. Keep in mind that there is a strong correlation between higher grades and attending lecture, and absences will negatively affect your grade as material covered exclusively in the classroom (not in the books) will appear on exams.

Classroom Etiquette:

Please be respectful of your fellow students. This includes arriving on time and staying until the end of lecture. Arriving late and leaving early can be disruptive. No cell phone use (calls or texting) is permitted during class. Phones should also be in silent mode during class. This may seem like common courtesy to most students, but unfortunately it has to be pointed out to some. If an emergency arises step outside the classroom to use your phone. Phones (along with tablets and computers) may be used in class to take notes and look up material related to class.

Students with disabilities:

If you think you need accommodation for a disability, please let me know at your earliest convenience. Some aspects of the course may be modified to facilitate your participation and progress. As soon as you make me aware of your needs we can work with Disability Support Services (DSS, 618-453-5738, <http://disabilityservices.siu.edu/>) to help us determine the appropriate academic action. Any information provided is private and confidential and will be treated as such. When it comes to accommodations for the exams and final, I require **at least 5 days notice** prior to the exam date. This ensures enough time to make the proper arrangements.

ACADEMIC DISHONESTY POLICY (adapted from the College of Science policy

http://www.science.siu.edu/_common/pdfs/oppaper):

Students may be subject to disciplinary proceedings resulting in an academic penalty or disciplinary penalty for academic dishonesty. Academic dishonesty includes, but is not limited to, cheating on a test, plagiarism, or

collusion. Sanctions for academic dishonesty available to an instructor include: assigning a failing grade, or zero, for a paper or exam; assigning a failing grade for a course (the instructor shall assign an “incomplete” in lieu of a letter grade pending adjudication and final resolution of the complaint); recommending that a student be dropped from a program; and recommending that a student be suspended from the University.

HINTS for SUCCESS:

- 1) Attend class.
- 2) Study often, not just the night before an exam.
- 3) Review lecture material the evening after a lecture. This will help you learn the material and will make studying for exams much easier.
- 4) Read the chapters cited next to each lecture prior to class. It will help you better comprehend the lecture material.
- 5) Ask questions! Come to office hours!
- 6) Seek out academic help before it is too late – it is very difficult to recover from two failed exams.
- 7) LEARNING ASSISTANCE: SIU Center for Learning Support Services - <http://tutoring.siu.edu/index.html>

Final note:

The material on the syllabus is fluid and may fluctuate some during the term. This is due to the ever-changing nature of scientific research and information, my desire to add and present material that is relevant, useful and exciting, and the fact that the pace at which I present the material changes each time I teach a class. Therefore please note that as the term progresses, the syllabus will not be strictly followed, and ANY information on the syllabus, with the exception of exam dates, is subject to change. Any changes that are made to the syllabus as the course proceeds will be announced in class.

Important Dates!!!

1/28/18	Last day to submit drop paperwork with a full refund
2/16/18	Exam 1
3/10/18 – 3/18/18	SPRING BREAK NO CLASS
3/19/18	Exam 2
4/1/18	Last day to submit drop paperwork
4/9/18	Exam 3
5/2/18	Exam 4

- Quiz dates are denoted with a “Q” in the lecture topic column on the class schedule
- Final exam schedule will be determined in week 4 of class.

Preliminary Class Schedule

Lecture	Date	Lecture Topic	Text Chapter
1	1/17	Intro and Bacteria	1-2
2	1/19	Basic Genetics	3
3	1/22	Basic Genetics	3
4	1/24	DNA and Central Dogma Q1	4
5	1/26	DNA and Central Dogma	4
6	1/29	Replication	5
7	1/31	Replication	5
8	2/2	Transcription Q2	6
9	2/5	Transcription	6
10	2/7	Transcription	6
11	2/9	Translation	7
12	2/12	Translation	7
13	2/14	Translation Q3	7
–	2/16	**** Exam 1 ****	1-7
14	2/19	Gene transfer in bacteria	8
15	2/21	Gene transfer in bacteria	8
16	2/23	Gene transfer in bacteria	8
17	2/26	Molecular Techniques Q4	9
18	2/28	Molecular Techniques	9
19	3/2	Molecular Techniques	9
20	3/5	Products from Biotechnology	10
21	3/7	Products from Biotechnology Q5	10
22	3/9	Products from Biotechnology	10
–	3/12	SPRING BREAK – NO CLASS	
–	3/14	SPRING BREAK – NO CLASS	
–	3/16	SPRING BREAK – NO CLASS	
–	3/19	**** Exam 2 ****	8-10
23	3/21	Molecular Biology of Eukaryotes	11
24	3/23	Molecular Biology of Eukaryotes	11
25	3/26	Molecular Biology of Eukaryotes	11
26	3/28	Mutations Q6	12

27	3/30	Inherited Human Diseases	13
28	4/2	Inherited Human Diseases	13
29	4/4	Cancer and Aging	14
30	4/6	Cancer and Aging Q7	14
–	4/9	****EXAM 3****	11-14
31	4/11	Transgenic Plants and Animals	15
32	4/13	Transgenic Plants and Animals	15
33	4/16	Polymerase Chain reaction Q8	17
34	4/18	Forensic Medicine	18
35	4/20	Molecular Evolution	24
36	4/23	RNA Regulation Q9	25
37	4/25	RNA Interference	25
38	4/27	Viruses/Transposable Elements	19
39	4/30	Plasmids	19
–	5/2	****Exam 4****	15,17-19, 24-25
–	5/4	Review for Final Q10	
		FINAL EXAM TBA	

