

STEVENSON

U N I V E R S I T Y

BIO 330 Molecular Genetics Spring 2017

INSTRUCTOR INFORMATION

Dr. Rebecca C. Burgess

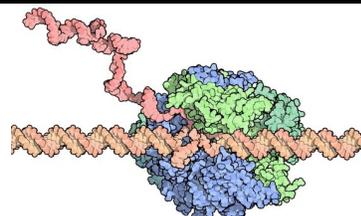
Stevenson telephone number: 443-394-9653

Stevenson email: rburgess@stevenson.edu

Best times for phone contact: 9:15 am or 4:00 pm Wednesday-Friday

Office location: Manning Academic Center N109

Office hours: Monday 3-5 pm, Tuesday 6-7pm, or by appointment



COURSE INFORMATION

BIO 330 Molecular Genetics

Section number: ON1 and ON2

Credits: 4

Prerequisite(s): A grade of "C" or better in BIO 230.

Classroom or Studio Location: Classroom: Manning Academic Center (MAC) S325; Laboratory: MAC N143

Scheduled Class Days and Time: Lecture: Monday, Wednesday, Friday 8:00AM-8:50AM (ON1 and ON2)
Laboratory: Tuesday 03:00PM - 05:50PM (ON1); Monday 12:00PM - 02:50PM (ON2)

Course Description: Examines the processes by which viruses, prokaryotes and eukaryotes transmit hereditary information and regulate its expression. Topics include patterns of inheritance, structure and replication of hereditary material, transcription and its regulation, translation, mutation, recombinant DNA and oncogenes. Technology elucidating gene structure and function and the application of DNA technology to other areas are discussed. Laboratory included. <http://catalog.stevenson.edu/>

Instructional Methods Used in this Course: Lecture, Lab, Group Projects, Guest Speakers, Course-based research.

Required and Recommended Texts, Manuals, and Supplies: **Textbook:** *Molecular Biology*, David Clark and Nanette Pazdernik, 2nd edition, Academic Cell Press, Elsevier, ISBN 978-0-12-378594-7

On reserve in the Library on the Owings Mills Campus and as a PDF e-book through SU Library.

<https://ezproxy.stevenson.edu/login?url=http://www.sciencedirect.com/science/book/9780123785947>

Supplies: A calculator, goggles and lab coats are required for the laboratory and may be purchased from the bookstore. Laboratory notebooks and Lab Manual will be electronic, students can use the laboratory laptops or bring their own.

COURSE OUTCOMES

Course Objectives/Learning Outcomes: At the completion of the course, the student will be able to:

1. Understand hereditary material (DNA and RNA) and the evolutionary framework for heredity.
2. Explain DNA replication and repair mechanisms.
3. Describe the structure of DNA, the expression of genes, and the regulation of gene expression in eukaryotic and prokaryotic cells.
4. Explain the principles of recombinant DNA technology and its application to studying organism genomes.
5. Perform basic recombinant DNA techniques in the laboratory.
6. Demonstrate an understanding of laboratory safety.

GRADING STANDARDS

Grading Scale:

A	93-100	4.0
A-	90-92	3.7
B+	87-89	3.3
B	83-86	3.0
B-	80-82	2.7
C+	77-79	2.3
C	73-76	2.0
C-	70-72	1.7
D+	67-69	1.3
D	60-66	1.0
F	1-59	0.0

Students must earn a minimum grade of "C" in courses that are used to fulfill the SEE requirement and major requirements.

Continuance and Progression Policies, if applicable Students must earn a minimum GPA of 2.00 in the major, and the lowest acceptable grade is a "C" in science and math courses, and Stevenson Educational Experience (SEE) courses. No student, regardless of major, will be permitted to take a science or math course unless he/she earns a grade of "C" or better in all prerequisite courses.

Course Requirements: Please note that the School of the Sciences policy is that final course grades are NOT rounded. Your final grade in this course will be calculated as follows:

Assessment	Percentage
Final Exam	20%
Lecture exams- 2 best (of 3)	20%
Problem Sets/Quizzes	10%
Build-a-phage Project Lab Report	10%
Laboratory Notebook	10%
Post-lab Analysis Assignments	5%
Journal Article Presentation	10%
Pre-class Reading Questions	10%
Professionalism	5%

For more information regarding these course requirements, please see the "Course Schedule Information" at the end of the syllabus.

Rubrics for grading written work can be found on Blackboard, as can the most up-to-date information regarding due dates.

Grading Standards: Your grade for this course will be based on your performance on exams, quizzes, assignments, and pre-class preparation (readings and questions) as well as your laboratory notebook and lab report. The percentage for each component is listed above. There will be a few opportunities for extra credit during the course, in the form of extra questions on quizzes or exams or supplemental online assignments. Please note that the School of the Sciences policy is that final course grades are NOT rounded. If you have not received a high enough percentage for a particular letter grade, you will receive the next lowest letter grade.

NOTE: Your running percentage in the Grade Center in Blackboard will be continually updated during the semester as grades are entered; it will reflect your current percentage of points earned. See grading scale above for letter conversion.

Professionalism: In addition to cognitive skills or knowledge, a large part of your future success will depend on your ability to act in a responsible, respectful, and thoughtful manner. These are often called affective skills. We consider the development of these skills a very important part of the education that you will receive here. Therefore, a professionalism evaluation is included as a portion of the final grade in every biology course that is offered. The following list contains professional objectives that each student will be graded on throughout the semester. In addition, as a part of your professionalism requirement, your course contract must be returned to your instructor by **Friday January 29th**, if it is not returned by that date, 1 point will be deducted from your final Professionalism score.

Each of the following attributes are scored as a 0 or 1, for a total possible 10 points, which counts as 5% of your final score:

- A. Student adheres to the attendance policies established by the course syllabus.
- B. Student is consistently well prepared and submits all assignments according to deadlines set by the instructor and the course syllabus.
- C. Student demonstrates a respectful attitude and professional demeanor with faculty and peers.
- D. Student demonstrates flexibility with changes to the course schedule.
- E. Student demonstrates the ability to follow verbal and written instructions.
- F. Student complies with all safety regulations in the laboratory without being reminded.
- G. The student participates during in-class discussion and group work.
- H. The student cooperates with other students in sharing equipment and supplies and in cleaning up at the end of a laboratory session.
- I. The student does not create a distracting atmosphere in the lecture/laboratory so that his/her peers or the instructor cannot concentrate.
- J. The student adheres to the course policies on electronic devices.

Professionalism Rating scale:

The above attributes will be rated as follows:

- 1 pt Displays the characteristic 75-100% of the time
- 0 pts Displays characteristic less than 75% of the time

COURSE POLICIES

Communication: Each student has been given a Stevenson University email address. It is expected that students will check their SU email account and Blackboard every day to look for important announcements and information. Students are responsible for information sent to their Stevenson University email address and/or posted on their courses' Blackboard sites.

The importance of effective, timely communication cannot be overstated, but given our busy academic schedules, I am often easiest to reach by email outside of class times. I check my email frequently and will respond to your messages as promptly as possible, but note that responses to emails sent after 6pm in the evening or on weekends will likely be delayed until the following morning or Monday morning, respectively. If you don't receive a response within this timeframe, please send the email again if your question remains.

If you are unhappy with your running grade in the class, it is your responsibility to contact me to discuss strategies to improve your performance. Do NOT wait until the last few weeks of the semester to bring up your grade.

In the event of Stevenson University Closure: Should SU experience an unplanned closure during the semester for any reason, faculty will continue to provide instruction to students through Blackboard and/or via email. If you foresee a problem with internet access, please speak with your instructor at the beginning of the semester. Please keep in mind that SU computers or computer laboratories may be impacted by whatever conditions led to the closure, which means that you must let your instructor know if you are relying solely on the University's computers (i.e. if you do not have a computer of your own). If at any time you have a problem with internet access, it is your responsibility to contact your instructor immediately. It is acceptable to leave a voice mail for your instructor if you are unable to communicate in person or via the internet.

Testing: It is the policy of the School of the Sciences that the instructor (or responsible designee) be present in the classroom or laboratory at all times during the administration of a test, quiz, examination, or other form of graded assignment. It is also the policy of the School of the Sciences that only materials authorized by the instructor and required for testing may be placed on the desk or testing surface while sitting for a test, quiz, examination, or other form of graded assignment. In other words, desktops should be clear except for the materials needed and authorized for testing. All other materials and belongings must be placed on the floor at the front of the room or in an appropriate holding area designated by the instructor. Under no circumstances should belongings be located near the chairs or desks being used for testing or graded assessment. The materials and belongings that are **not permitted** include, but are not limited to, the following:

Caps or hats of any kind. *Note: If there is a medical or religious reason that a student must wear something on his/her head, then permission to do so must be secured at the start of the semester and in advance of any test or graded assessment.*

Electronic devices of any kind, including cell phones, watches, Google Glass, iPads, etc. *Note: If electronic devices are brought into the room, they must be powered "OFF" and stored in the designated location during the testing period.*

Purses of any kind, Book bags of any kind, Water bottles. *Note: Clear water bottles with no labels may be permitted by the instructor. Please seek the permission of the instructor prior to sitting for a test or graded assessment if you wish to have a clear/no label water bottle at your desk.*

Refusal to comply with these regulations will result in the immediate dismissal of the non-compliant student from the testing site, which, in turn, means a failure to sit for the exam or other form of graded assessment, and therefore the assignment of a zero for the exam or assessment. Violation of the policies and procedures specified here will constitute academic misconduct.

Missed Exams/Quizzes: Quiz and exam dates are listed on the syllabus and will be held on those dates. Please do not schedule appointments or make commitments to other school/work/personal obligations during these times. Quizzes and Exams cannot be made up unless I grant you an **excused absence** (see above section). Documentation is required. Deaths in the family must be reported to the Director for Student Success, Ms. Terra Hall (tnhall@stevenson.edu). The instructor will then discuss the matter with Ms. Hall before a makeup is scheduled. If you miss an exam and have documentation, you are required to contact me within 24 hours of the missed exam. If you do not contact me, you may forfeit your chance to take a makeup exam. Unless other arrangements are made with me, your scheduled makeup will be given within 48 hours of the missed exam. To take an exam in the Academic Link, students must provide documentation. Please note that the Academic Link requires instructors to submit an exam 48 hours before a student takes the exam. Students must make an appointment to take an exam in the Academic Link. The Academic Link is only opened at specific times.

If a student has accommodations to takes an exam, quiz, or graded in class assignment in the Academic Link, it must be taken no later than 1 day following the when the students complete the assessment in class. If a student has an excused absence for athletic or a school sponsored event, the exam, quiz, or graded in class assignment must be completed within 24 hours after the student returns to campus.

Regrading Policy: If a student deems a grade to be in error, he/she must submit a written regrade request within 5 days of the assignment being returned to the student, which states the exact question and gives a detailed and logical explanation of the correct answer or answers. The regrade procedure is to correct bona fide errors in grading, not to argue for more points. If there was a simple math error in calculating your total points, let me know immediately and I will record the correct number of points. Arithmetic errors don't constitute a regrade request.

Late Work: For each day that any assignment is late, five points will be deducted from the total points earned. A late assignment will not be accepted after the assignment has been returned to students or one week after the due date, whichever is sooner. All graded assignments are to be completed individually and not with other students or tutors (unless specifically permitted for that assignment). Students who do not adhere to this policy will be violating the academic integrity policy and will be reported.

Classroom and Studio Policies:

Laboratory Safety: All students participating in science laboratory courses are required to complete the Laboratory Safety Resources Course module in Blackboard for the particular course for which they are registered. Students must choose the appropriate safety course based on the description of the science courses in which they are enrolled. Students enrolled in microbiology, environmental field studies, or an independent research course should complete the modules specific to those courses. All other students should complete the General Laboratory Sciences module. The information found in the General Laboratory Sciences module is also covered in the other three modules. Students enrolled in any science laboratory courses will have access to the safety modules in their course list and it will be available as a resource during the semester. Each course will take students through the Laboratory Safety Practices and Policies they should know as they start to work in a lab or field setting. A laboratory safety quiz will become available upon completion of the module and must be completed with a passing score of 80% to participate in the laboratory portion of any science course. Students who do not receive a passing quiz score will be allowed to re-take the quiz **for a maximum of two attempts** to achieve a passing score. Students who do not receive a passing score after two attempts will need to complete a safety seminar with a member of Laboratory Services.

Upon successful completion of the quiz, the “Laboratory Safety Agreement” link will become available. Students will read, complete, and submit the agreement electronically. Students are not required to submit a paper copy of the agreement(s) unless instructed to do so by their laboratory instructor(s). Students enrolled in microbiology courses, environmental field studies courses, or an independent research course will be required to submit additional forms.

All students must submit the required documentation by **Friday, February 3, 2017**. **Students who fail to submit the required documentation by Friday, February 3, 2017 will not be able to participate in lab activities until this requirement is completed.** In addition, students will not be able to make up any missed lab activities. Please direct any questions to labservices@stevenson.edu.

Submission of Assignments or Projects: Lab reports should follow the Council of Scientific Editors (CSE) citation style. A CSE manual can be found online or on reserve in the library. At the 300 level, proper sources for lab reports are primary research articles and review articles, but not general websites. More details about formatting of this assignment will be given with the assignment. It is expected that students use the spell checker of their word processing program and proof read their assignment prior to submitting it. The lab report will be submitted via SafeAssign on Blackboard, as a file NOT pasted into a text box. It is the student’s responsibility to make sure that the assignment is complete before submitting it. A failure of a personal computing device will not be an acceptable excuse for missed academic or University deadlines.

All written work for BIO 330 MUST be submitted on the day it is due in class or in lab in the appropriate format. If paper copies of assignments are to be handed in (e.g. post-labs, problem sets) they must be received during class or in lab AND multiple pages must be stapled together. Assignments consisting of multiple pages that are not stapled together will not be accepted

NOTE: Assignments submitted by e-mail, by slipping the work under my office door, or by placing it in my mailbox will NOT be accepted, unless permission is given. Always save a copy of your work and be prepared to resubmit if necessary.

Electronic Devices in the classroom: While the use of laptops and tablets for notetaking is not recommended – research shows that handwriting notes supports retention – students may use whichever notetaking method they prefer. However, smartphones should remain unseen and silent during class meetings unless specifically instructed to use them for an activity (e.g. clicker questions or to capture an image for educational purposes). In the case that you have an emergency where you must keep your phone handy, permission must be granted before the beginning of class and you must step out of the class to use it. For class periods utilizing simulations or other apps, I will let you know during the previous class period so you will be prepared for bringing a charged device (tablet/laptop) with the appropriate software installed. If you need a

loaner device, you must request it from me no later than 24 hours before the start of class.

Electronic devices in the laboratory: We will be using electronic lab notebooks for our Build-a-Phage project. You are welcome to bring your own device if you prefer to, or you can use the laptops available in the laboratory. Laptops are to be placed away from the wet bench workspace and must NOT be used with gloves on. You MUST remove your gloves before typing on any computer. You may find it useful to keep a scrap paper nearby for jotting quick notes to be entered all at once, but ALL those paper notes must be entered in the notebook before the end of the laboratory period.

Class/Lab Behavior: Eating food, and drinking beverages, is permitted in the classroom during lecture but NEVER in the laboratory. Students are not to work on other subjects during lectures or laboratory periods. I look forward to lively discussions in this course, but excessive and loud talking that is irrelevant to our discussions is disruptive to the instructor and classmates. Repeated reminders to stop will result in a deduction of 5 points for each occurrence.

Attendance

Each student is responsible for his or her own class attendance and regular attendance is expected. Every student is responsible for the material covered or the skills exercised during scheduled classes. Grades will be based on demonstrated achievement of the objectives of the course, not on attendance in class as such. Students who stop attending and fail to officially withdraw from a class will be given a grade of "FX" which calculates as an "F" in the GPA.

Course-Specific Attendance: Attendance in class is critical to your performance in this class. What we cover in the pre-class readings will be briefly reviewed and expanded upon in class. We will then apply that knowledge and explore new material that is not found in the text. The material covered in class is the basis of your assessments and exams, so it is important to attend and participate in class. For missed classes, students will need to obtain notes from another student in the section. Attendance will be taken and repeated absences will be penalized by a reduction in the number of professionalism points earned. Remember: 20 points could easily translate to a change in your final letter grade.

Attendance in laboratory periods is mandatory and students are expected to be present for each lab. Due to the continuous nature of the molecular biology project we are performing, missing a laboratory will likely result in you being behind in the protocols and not completing your project for your final lab report. Since the lab space is used by other courses, laboratories cannot easily be made up. Missed labs without an excused absence will incur a 20 point deduction from the lab notebook grade for each absence, plus any deductions that result from the laboratory notebook entry for that day not being complete. Leaving the laboratory early without instructor permission counts as an absence for that laboratory period. In addition, a student's inability to participate in the lab due to a safety violation (e.g. wearing open-toed shoes) will result in a deduction of 10 points from the lab notebook grade. Students arriving to lab 20 minutes after the scheduled start time for preventable reasons, will not be allowed to participate in that lab period, nor be allowed to take any scheduled lab quizzes. A deduction of 10 points from the lab notebook grade will be taken for each occurrence of tardiness, plus any deductions that result from the laboratory notebook entry for that day not being complete.

Excused Absences: An excused absence may be granted in the case of a sickness, medical emergency, court appearance, athletic or school sponsored event, or some such extreme event; however, minor medical conditions such as a doctor's appointment will not qualify for an excused absence. Absences due to sickness must be supported by a doctor's note and a copy given to the instructor as soon as you return to class.

- In the event of an absence, assignment deadlines still apply unless you have been formally granted an extension of the deadline by your instructor.
- Documentation must be provided in order for an absence to be excused, and you must contact your instructor in advance if possible or at least within 24 hours of the missed class.

- Absences due to an athletic conflict require advance notice of at least 7 days, and should be listed on an athletic conflict form. The athletic conflict form must be provided to the instructor at the beginning of the semester, and the student must then remind the instructor of an upcoming absence 7 days in advance.
- If you are absent from class it is your responsibility to find out what you missed, including assignments.
- It is essential to arrive in lab on time, as important instructions and safety information are given out at the beginning of each lab and will not be repeated.
- The instructor may excuse students if they arrive late due to inclement weather or if a major car accident occurs on the roads.

UNIVERSITY GUIDELINES

Diversity Statement

Stevenson University commits itself to diversity as it relates to awareness, education, respect, and practice at every level of the organization. The University embraces people of all backgrounds, defined by, but not limited to, ethnicity, culture, race, gender, class, religion, nationality, sexual orientation, gender identity or expression, age, physical ability, learning styles, and political perspectives. The University believes its core values are strengthened when all of its members have voice and representation. The resulting inclusive organizational climate promotes the development of broad-minded members of the University who positively influence their local and global communities.

Standards of Academic Integrity

Stevenson University expects all members of its community to behave with integrity. Honesty and integrity provide the clearest path to knowledge, understanding, and truth – the highest goals of an academic institution. For students, integrity is fundamental to the development of intellect, character, and the personal and professional ethics that will govern their lives and shape their careers. Stevenson University embraces and operates in a manner consistent with the definitions and principles of Academic Integrity as set forth by the International Center for Academic Integrity.

Students are expected to model the values of academic integrity (honesty, trust, fairness, respect, responsibility, and courage) in all aspects of this course.

Students will be asked to assent to and to uphold the University Honor Pledge:

*“I pledge on my honor that I have neither given nor received
unauthorized assistance on this assignment/exam.”*

Suspected violations of the Academic Integrity Policy will be reported and investigated as outlined in the Policy Manual, Volume V.

ACADEMIC SERVICES

Disability Services

The Office of Disability Services (ODS) facilitates equal access for every student who self-identifies as having a disability. If you are a student with a disability who needs accommodations in this class, please contact the Director of Disability Services at ODS@stevenson.edu. Once accommodations are authorized by ODS, please provide me (your instructor) with your approved accommodations memo as soon as possible. Accommodations are not retroactive. This is the link to the University’s Disability Support Services: <http://www.stevenson.edu/academics/academic-resources/disability-support-services/>

Academic Link

The Academic Link, located on Owings Mills in the Center for Student Success (GHS 101) and on Greenspring in Knott Hall (KH201), provides free tutoring for many classes. If you are having difficulty with or would benefit from discussing the material with an upper level peer, seek assistance early in the semester. Tutoring often makes a

difference in a student's grade. For more information regarding hours, scheduling appointments and accessing additional resources, please visit: <http://www.stevenson.edu/academics/academic-resources/academic-link/>

SU Library

The SU Library provides electronic and print resources to support your coursework. Subject specific Research Guides and Databases by subject can be found on the library home page as well as brief tutorials and directions to assist you in using these resources.

Online Learning Resources

Atomic Learning, available through Blackboard, is an online learning resource available to all Stevenson students that provides video tutorials for instruction on a wide variety of topics.

Lynda.com is an online learning resource available to all Stevenson students. On lynda.com students can view video tutorials for hundreds of computer applications, including the Adobe Creative Suite.

STEVENSON EDUCATION EXPERIENCE (SEE) LEARNING GOALS AND OUTCOMES

SU Goal No. 1: Intellectual Development (ID)

The SU graduate will use inquiry and analysis, critical and creative thinking, scientific reasoning, and quantitative skills to gather and evaluate evidence, to define and solve problems facing his or her communities, the nation, and the world, and to demonstrate an appreciation for the nature and value of the fine arts.

SU Goal No. 2: Communication (C)

The SU graduate will communicate logically, clearly, and precisely using written, oral, non-verbal, and electronic means to acquire, organize, present, and/or document ideas and information, reflecting an awareness of situation, audience, purpose, and diverse points of view.

SU Goal No. 3: Self, Societies, and the Natural World (SSNW)

The SU graduate will consider self, others, diverse societies and cultures, and the physical and natural worlds, while engaging with world problems, both contemporary and enduring.

SU Goal No. 4: Experiential Learning (EL)

The SU graduate will connect ideas and experiences from a variety of contexts, synthesizing and transferring learning to new, complex situations.

SU Goal No. 5: Career Readiness (CR)

The SU graduate will demonstrate personal direction, professional know-how, and discipline expertise in preparation for entry into the workplace or graduate studies.

SU Goal No. 6: Ethics in Practice (EIP)

The SU graduate will practice integrity in the academic enterprise, professional settings, and personal relationships.

For more information about the SU learning outcomes and goals, please see the Stevenson catalog.

COURSE SCHEDULE INFORMATION

Course Calendar: The approximate course schedule is in the table at the end of this syllabus, please note that dates are subject to change, and you should always consult the course Blackboard site to provide the most up-to-date due dates and course schedule information.

Graded Assignments:

1. **Final Exam:** The final exam in this course will be cumulative and consists of multiple choice and short answer questions. You will be given specific objectives for material covered during the semester. You will not be allowed to use any notes or other assistance on the final exam, unless specified by the instructor. Your final exam is worth 20% of your final grade for this course.

Final exam date, time, and location: Monday May 8th, 8:00 AM -10:00 AM

2. **Lecture Exams:** There will be three lecture exams each worth 100 points over the course of the semester and will consist primarily of critical thinking and short essay questions. Study guides will be posted on Blackboard prior to the exams. The lowest grade of the three will be dropped, and those two exams will be worth a total of 20% toward your grade.
3. **Problem Sets/Quizzes:** Approximately ten problem sets and group quizzes will be given for each topic, worth 10% of your final grade. Additional problem sets may be offered for extra credit. These will generally be take-home problems to be completed with group study.
4. **Build-a-Phage Project Lab Report:** During the course of the semester, you will be working with a lab partner creating and testing a synthetic bacteriophage gene. The results of your experiments will be written into a full lab report at the end of the semester, worth 10% of your grade. Specifics relating to this lab report will be discussed in lab, but it is assumed that students have basic knowledge of a lab report at this level.
5. **Laboratory Notebook:** We are conducting authentic research in this class, so you will be required to keep a detailed scientific laboratory notebook (digital format) that will be a permanent and complete record of your experiments. This lab notebook is worth 10% of your grade and will contain all of the materials, methods, data and results and conclusions of your experiments. An important aspect of scientific experimentation is that you must be able to replicate your experiments and the results, and therefore it is imperative that you keep a careful record of all that you do in lab. Your instructor will go over the format for your lab notebook during the first lab.
6. **Post-lab Analysis Assignments:** After several of your lab assignments, there will be post-lab analysis assignments due. These are worth 5% of your grade; they are important questions that will help you think about the progress of your experiments and will be a basis for your lab report discussion. These questions will be completed in your lab notebook, but then printed out as a pdf and handed in, in your lab period, during the lab week indicated. These can be discussed with lab partners, but **MUST** be completed and written individually.
7. **Journal Article Presentation:** We will be analyzing five primary research articles that were fundamental in defining some of the concepts we have learned about in class. Articles have been chosen based on their timeliness and relevance to the course topics. The class will be divided into groups of 3 or 4 and will pick their date and an article from the list during the second week of class. Each group will be responsible for presenting one article to the rest of the class, which will contribute 10% to your final course grade. Presentations should be done with Powerpoint, Prezi, or another equivalent program. Details of the presentation and rubrics will be given out in class. Students who are not presenting will have to summarize the article and answer questions related to the articles. Groups that are not presenting are expected to participate in the class discussion of the article.
8. **Pre-class Reading Questions:** Each topic we cover will have an assigned reading from a chapter in Clark's *Molecular Biology*, available online through the SU Library. Post-reading questions will be assigned, to be due at midnight by the due date (the night before we begin the topic in class). These reading assignments and questions will be assigned as we progress through the semester to ensure that the reading stays aligned with the topics in class.

Completing all of these assignments on time is a surefire way to guarantee a lot of points toward your final grade, as they are worth the equivalent of an exam. These will also prepare you for our in-class discussions, lab activities and provides valuable practice in mastering the material for exams. Check the class Blackboard site often and stay on top of these important assignments- you can ensure that you earn a lot of points toward your final grade by simply completing them on time. Not completing these assignments would drop your final grade one mark (i.e. from C to C-), not to mention the negative effects on your exam grades!
9. **Professionalism:** This will be assessed throughout the course, but the grade will be entered in Blackboard at the end of the semester for inclusion in the final course grade.

BIO 330 Course Schedule (approximate and subject to change- see Blackboard for latest course schedule)

Week of	Chapter	Topic	Assignments/Important Dates
January 23	CH 3	<u>Biomolecules, DNA, RNA and Protein</u> Lab: Introduction to the scientific question, electronic lab notebook setup	1/29- Course contracts due
30	CH 4	<u>Genomes and DNA</u> Lab: Templateless PCR of synthetic RFP gene, finishing PCR	1/31- Last Day to Add/Drop 2/4- Lab Safety Training due
February 6	CH 10	<u>Cell Division and DNA Replication</u> Lab: Gel electrophoresis of PCR product	
13	CH 11,12	<u>Transcription of Genes, Processing of RNA</u> Lab: PCR purification of synthetic gene, PCR Troubleshooting	PCR assignment due (in lab)
20	CH 13	<u>Protein Synthesis</u> Lab: Gibson assembly, transformation of assembled plasmid	2/24- Exam 1
27	CH 16	<u>Regulation of Transcription in Prokaryotes</u> Lab: Colony screening PCR and Gel electrophoresis, submit sequencing reactions	Journal Article pres. #1 Transformation assignment due (in lab)
March 6	CH 17	<u>Regulation of Transcription in Eukaryotes</u> Lab: Oligo design and watermarking of Phage gene, begin sequence analysis of RFP synthetic product	PCR troubleshooting due (in lab) 3/10- Midterm grading of notebooks starts
13		Spring Break- no classes	3/17- Sequence analysis due
20	CH 18	<u>Regulation at the RNA Level</u> Lab: Oligo mixing, templateless PCR of synthetic phage gene	Journal Article pres. #2
27	CH 19	<u>Analysis of Gene Expression</u> Lab: Gel Electrophoresis, purification of synthetic gene	3/31- Exam 2
April 3	CH 22	<u>Mobile DNA</u> Lab: Electroporation	Journal Article pres. #3 4/7- Last Day to Withdraw
10	CH 23	<u>Mutations and Repair,</u> Lab: Pick plaques, PCR screening of plaques	4/14- Draft of Lab Report Intro and Materials and Methods due
17	CH 24, 26	<u>Recombination, Molecular Evolution</u> Lab: Gel electrophoresis, Genome database analysis	Electroporation assignment due (in lab)
24	CH 9	<u>Genomics and System Biology</u> Lab: Dilution of semi-synthetic phage to determine titer	Journal Article pres. #4
May 1	CH 15	<u>Proteomics: The Global Analysis of Proteins</u> Lab: Titer calculations and wrap-up	Journal Article pres. #5 5/5- Exam 3
8		Final Exam Week- no classes Monday 5/8 -Final Exam- 8am	5/10- Final Lab report due

Course Contract
BIO 330 Molecular Genetics
Dr. Burgess
Spring 2017

Your signature below indicates your acceptance of the following statements:

- I have read and understood the entire course syllabus for Molecular Genetics (BIO 330-ON1 and ON2, Spring 2017).
- I understand, accept and will abide by the terms detailed in the course syllabus for Molecular Genetics (BIO 330-ON1 and ON2, Spring 2017).

Student's printed name: _____

Student's signature: _____ Date: _____