



**Course Syllabus  
Advanced Cell Biology / BIO8033  
Spring 2018**

<b>Instructor:</b>	Dr. Donna M. Gordon
<b>Recommended Textbook:</b>	Molecular Biology of the Cell, 6 <sup>th</sup> Edition, Garland Science Bruce Alberts, et. al. (ISBN: 978-0-8153-4432-2)
<b>Contact information:</b>	Email within myCourses is the preferred method of contact Alternate email address: <a href="mailto:gordon@biology.msstate.edu">gordon@biology.msstate.edu</a> Office phone: 662-325-9337

**Course Description:**

Study of eukaryotic cellular and sub-cellular structure and function; integration of cellular processes to understand the cell as a whole.

**Course Prerequisites:**

Although this course has no listed prerequisites, it is expected that students have a working knowledge of basic biological principles including an understanding of transcription, translation, DNA replication, small molecule and protein transport processes, and the eukaryotic cell cycle. Students lacking familiarity in these areas may require additional outside assistance to do well. This course is one in a series required for a Master of Science degree in General Biology. Although these courses are designed for K-12 teachers, the material in this course is delivered at a Masters level. Therefore, it is expected that all assignments and assessments be completed at the postgraduate level, and not for a high school audience.

**Learning Outcomes:**

The goal of this course is to provide students with an in depth look at various aspects of cell biology. Upon successful completion of this course, students are expected to be able to articulate the differences between prokaryotic and eukaryotic cells; describe in detail the molecular mechanics of transcription and translation; understand the driving forces involved in small molecule transport across biological membranes; detail the three different pathways of protein trafficking within eukaryotic cells; explain the assembly and function of the three families of cytoskeletal filaments; outline the common signaling mechanisms involved in cellular communication; explain the regulatory mechanisms that control progression through the cell cycle and apoptosis and how misregulation of these pathways gives rise to cancer.

**Classroom Material:**

Molecular Biology of the Cell, 6<sup>th</sup> Edition published by Garland Science and authored by Bruce Alberts, Alexander Johnson, Julian Lewis, David Morgan, Martin Raff, Keith Roberts, and Peter Walter is the text for this course (ISBN: 978-0-8153-4432-2). You will be required to read the chapters indicated for each weekly lecture as a supplement to the recorded lectures. Electronic versions of the text are also available. Students interested in these electronic options are referred to the publishers website for more information: <http://www.garlandscience.com/product/isbn/9780815344322>

This is a distance-learning course and requires that each enrolled student have reliable access to a computer that connects to the internet. All course materials can be accessed through Blackboard

Learn (<https://cas.its.msstate.edu/cas/login>) or through the Classroom tab within my.msstate.edu (<https://my.msstate.edu/cp/home/displaylogin>) using your MSU NetID and password. Each topic covered in this course will have lecture material to view online, required readings associated with each topic, and a quiz to test your comprehension of the covered material. You will also be required to check your email on a regular basis, as this is the official means of communication for this course.

### **Contact Information:**

You may contact me using the Course Email tab provided within the myCourses Blackboard Learn website. If you need additional assistance, or are not satisfied with the responses provided by email, you are encouraged to contact me during normal business hours (9am-5pm CST) at 662-325-9337.

For all technical questions or problems with Blackboard Learn, please contact the Center for Distance Education Technology Unit by phone (662-325-0278), by live chat during normal business hours ([http://www.distance.msstate.edu/distance/technical\\_assistance](http://www.distance.msstate.edu/distance/technical_assistance)), or by email ([help@distance.msstate.edu](mailto:help@distance.msstate.edu)). The MSU ITS Helpdesk is also a resource available to provide students with free computing assistance. They can be reached by phone (1-888-398-6394 or 662-325-0631), by email ([helpdesk@msstate.edu](mailto:helpdesk@msstate.edu)), or by completing an online help ticket ([www.its.msstate.edu](http://www.its.msstate.edu)).

For all technical issues concerning the ProctorTrack System, contact technical support staff at Verificent Technologies. Please do not call the MSU ITS Helpdesk as the staff can not help you with issues related to ProctorTrack. Verificent Technical Support can be reached by phone (1-844-753-2020), by email ([support@verificent.com](mailto:support@verificent.com)), and by completing an online request (<http://www.proctortrack.com/247-support/>).

### **Proctoring Requirements:**

All quizzes and exams must be completed using ProctorTrack from Verificent Technologies. The semester fee covers the costs associated with proctoring an unlimited number of assessments completed for courses in the M.S. in General Biology degree program. Prior to completing your first proctored assessment, you will want to log into the myCourses site for this course and click on the "Onboarding Exam" quiz. This will take you to a payment page where you can register and pay the current semester proctoring fee. Depending on when you paid your yearly "Onboarding fee", payment of this fee may also be required at this time. Completion of registration should only be required for one course in the M.S. in General Biology program. Please note that proctoring fees are not refundable, they can not be transferred to another student, do not cover fees associated with proctoring courses outside of the M.S. in General Biology program, nor are they prorated. Upon completion of the payment process, you will want to complete the "Onboarding Exam" as this will complete the registration process and will help to familiarize you with the proctoring environment. You are advised to start this process well in advance of your first proctored assessment so that: a) payment is taken care of, b) any issues with the process can be addressed, and c) you are familiar with the ProctorTrack system.

### **Additional Technical Considerations:**

You must read and be completely familiar with all technical guidance provided by the CDE staff. Some particularly important points to be aware of are:

1. Pop-up blockers must be turned off to use Blackboard Learn.
2. Ensure that your browser, media player, and version of Java are updated.
3. When you communicate with CDE personnel about technical problems, be as specific and detailed as possible about the problem that you encountered. This will enable them to best identify a solution and reduce the chances of a repeat occurrence later in the course.

4. If you encounter technical difficulties with assessments or with submission of assignments, you must inform me as soon as possible. If you delay informing me of problems, I may not be able to adjust your score to accommodate your difficulties. Copying me on communications to CDE staff about the problems will suffice for this purpose.

#### **MSU Honor Code and Academic Misconduct:**

You will be asked to acknowledge the University's policy on academic misconduct for all quizzes and exams. This will be in the form of a True/False question that will read as follows: "On my honor, as a Mississippi State Student, I have neither given nor received unauthorized assistance on this academic work." This statement will stand in for the official MSU Honor Code statement and your response to this question will be taken as your signature. Failure to acknowledge the Honor Code can result in a zero grade for the assignment.

Even though this is a distance-learning course, you will be required to abide by all MSU policies with regard to academic conduct. Please view the following site outlining the Universities policies on misconduct for more information: <http://www.honorcode.msstate.edu/policy/>. A link to the MSU Honor Code is also posted on the myCourses homepage.

You will be required to complete all assignments, quizzes, and exams without outside assistance. Faculty members and students are responsible for reporting cases of misconduct. Penalties for being found responsible for academic misconduct may include receiving an F grade, suspension, and/or expulsion from the University. Students have the right to appeal decisions made by the Student Honor Code council.

#### **Quizzes:**

Unless otherwise indicated, all quizzes must be taken using ProctorTrack, a third party proctoring services offered by Verificent Technology Inc. No lecture material or notes may be used to complete these assignments. In addition, you may not receive assistance from, or communicate with, other individuals while taking a quiz including the use of chat boards, discussion boards, blogs, text messaging, phone, email, etc. Receiving quiz or exam questions and/or answers from students that have completed graded assignments, whether from this year or previous years, will be considered cheating.

All quizzes must be completed within a restricted timeframe. Each quiz will be available online by **7 am Friday (CST)** and must be completed by **2 am the following Tuesday** (or Monday at midnight in the Pacific time zone). All times are given in Central Standard Time (CST) unless otherwise noted. Be sure to read the quiz instructions carefully before starting the assignment as each quiz may vary in the time allowed for completion. Although you may be able to submit your quiz if you go over the allotted time, any quiz that exceeds the allowed time will be penalized 1 point for each minute (or partial minute) over the pre-allotted time.

We will cover material in 10 chapters during the 15-week semester. You will be asked to complete 7 quizzes throughout the semester. Your 6 highest quiz scores will be used in determining your final grade, meaning that you will be given 1 'drop quiz' grade. Each quiz will be worth 20 points with questions presented as True/False, Multiple Choice, Matching, Fill in the Blank, and/or Short Answer. You are encouraged to take the quizzes seriously as they will make up a significant percentage of your final grade (see Course Grading, below).

You are given a 90-hour time frame in which to begin all quizzes once they are posted. Extension of the time available to complete these assignments should not be expected. Exceptions to this policy include medical issues (you or your immediate family) or other documented and approved conflicts. You are responsible for notifying me of a conflict in advance whenever possible. Missed quizzes can only be made up if there are documented and have been approved in advance. All decisions about what constitutes a 'documented and approved' excuse will be made by on a case-by-case basis.

Failing to complete an assessment because of a failure to take note of due dates/times is insufficient cause for making up an assessment. Please see the **Attendance Policy/University Approved Excuses** section below for more details.

### **Exams:**

There will be 3 exams for this course each worth 100 points. Exams will consist of True/False, Multiple Choice, Matching, Fill in the Blank, Short Answer, and Essay type questions. Similar to quizzes, all exams must be taken using the ProctorTrack system, be completed within a restricted timeframe, and are closed book. No lecture material or notes may be used during the exam. You may not receive assistance of any kind from **any** other individuals during an exam or from fellow students who may have already completed the exam.

Each exam will be available online by **7 am Friday** (CST) and must be completed by **2 am the following Tuesday** (or midnight in the Pacific time zone). All times are given in Central Standard Time (CST) unless otherwise noted. Be sure to read the exam instructions carefully before starting as each exam may vary in the time allowed for completion. Although you may be allowed to submit your exam if you go over the allotted time, any exam that exceeds the allowed time will be penalized 1 point for **each** minute (or partial minute) over the pre-allotted time.

### **Quiz/Exam Environment Requirements:**

All quizzes and exams must be completed using the ProctorTrack system. Please review the ProctorTrack Student manual before completing your first proctored assessment. Some general requirements that should be followed for online test taking are listed below.

- The quiz/exam should be taken in a quiet room.
- No other individuals may be present in the room during the assessment.
- The assessment must be completed in one sitting.
- Assessments must be completed without the use of other electronic devices, notes, or your textbook. A time limit for completion will be used to deter the use of these types of aids.

### **Homework:**

In lieu of a quiz, your knowledge of the material presented in several chapters will be tested through the completion of written “homework” assignments. These assignments will consist of several questions that you will need to answer. Each homework assignment will be worth 10 points, for 50 points total.

Assignment questions will be released to the class on the dates indicated in the Course Deadlines chart and must be submitted by the posted deadlines using the Course Assignments section of the Blackboard Learn site for this course. Please title your file for uploading to myCourses as follows “Last name, First name, HW# X” where X is the homework #. Word or PDF documents are preferred; please consult with me prior to the deadline whether other file types can be used. If requested by email, I will acknowledge receipt of your assignment (and my ability to open and read the document) by return email. Graded assignments with comments will be returned to students using the same link.

No late assignments will be accepted unless students have contacted the instructor in advance and can provide evidence of an excused absence or other related emergency.

### **Discussion Boards:**

The Instructor may initiate discussion board questions, however students are welcome to begin their own threads. All students are encouraged to regularly participate in discussion board sessions. Students will be able to read other’s comments and post their own remarks, comments and/or questions that may be beneficial or have general interest to the entire class. Individual student questions posed to me in an email may be answered in the discussion board section of the course if the question/response is believed to be of general interest to the class. In this situation, all identifying

information will be removed prior to the general posting.

Effective use of the discussion board will include clarification of content and sharing of additional helpful information. This is a voluntary exercise and no grades will be given for your participation.

**Civility statement:**

Despite the online setting, typical university classroom protocol will be followed, and e-mail correspondence and exam answers should follow standard rules of English grammar and punctuation.

In addition, please remember these basic rules for online behavior:

- You are not exchanging ideas with a computer but with other people.
- Do not send messages typed in all caps or in a difficult to read font.
- Do not send angry or confrontational emails to the Instructor or other members of the class.
- Be considerate of others' time.
- Be forgiving of others' mistakes. Some individuals may be less experienced than you.

**Attendance Policy/University Approved Excuses:**

Although this is an online course, it is not self-paced. Reasonable deadlines have been posted for the completion of all course work. All attempts must be made by the student to complete the assignments by their due dates. The student is responsible for notifying the Instructor of a potential conflict in advance of all quiz, homework, or exam dates. Missed assignments can only be made up if they are documented (documentation from a physician that contains the date and time the student sought medical consultation and/or treatment) and meet the Universities definition of an "excused absence".

The University provides the following examples of excused absences (AOP 12.09):

- Participation in an authorized university activity
- Death or major illness in a student's immediate family
- Participation in legal proceedings or administrative procedures that require a student's presence
- Religious holy day
- Illness that is too severe or contagious for the student to attend class
- Required participation in military duties
- Mandatory admission interviews for professional or graduate school which can not be rescheduled

The following illness and injury-related excuses are eligible as excused absences, but are subject to instructor's discretion.

- An illness or injury of a dependent or immediate family member (father, mother, sister, brother, son, daughter, or guardian only)

All decisions about what constitutes a 'documented and approved' excuse will be made by the Instructor on a case-by-case basis. Missing the deadline for a quiz, exam, or homework assignment because of a failure to take note of the scheduled date is insufficient cause for making up an assignment. Students that miss an assignment due to an 'excused absence' have 3 calendar days to contact the Instructor to discuss arrangements for making up the missed assignment. After 3 calendar days have passed, it will be assumed that the student has no interest in completing the assignment and a score of "zero" will be assessed.

### **Student Support Services:**

If you believe that you will require extra time to complete a quiz or exam due to a documented disability, please notify Student Support Services to obtain information on how to proceed (662-325-3335). Only students that have received approval from Student Support Services will be eligible for alternative testing accommodations. Please see the following website for more information:  
<http://www.sss.msstate.edu/disabilities/>

### **Maroon Alert:**

Maroon Alert is the emergency notification system of Mississippi State University. It includes several methods of notifying the university community of hazards and concerns, including text messages, emails, alerts on web pages, social media, and sirens. To be fully informed, please verify your Maroon Alert subscription information at [my.msstate.edu](http://my.msstate.edu). To report an on-campus emergency, dial 911 or (662) 325-2121. You can find more information about the Maroon Alert system at <http://www.emergency.msstate.edu/maroon-alert/>

### **Title IX:**

MSU is committed to complying with Title IX, a federal law that prohibits discrimination, including violence and harassment, based on sex. This means that MSU's educational programs and activities must be free from sex discrimination, sexual harassment, and other forms of sexual misconduct. If you or someone you know has experienced sex discrimination, sexual violence and/or harassment by any member of the University community, you are encouraged to report the conduct to MSU's Director of Title IX/EEO Programs at 325-8124 or by e-mail to [titleix@msstate.edu](mailto:titleix@msstate.edu). Additional resources are available at <http://www.msstate.edu/web/security/title9-12.pdf>, or at <http://students.msstate.edu/sexualmisconduct/>.

### **Course Grading:**

Quizzes (6 quiz scores, 20pts each)	120 points
Homework (5 assignments, 10pts each)	50 points
Exams (3 exams scores, 100pts each)	300 points
Total	470 points

### **Grading Scale:**

A	423 - 470 points
B	376 - 422.9 points
C	329 - 375.9 points
D	282 - 328.9 points
F	Below 281.9 points

**Course Outline:**

**Topic: Basic genetic mechanisms**

Chapter 6: How cells read the genome: from DNA to protein pages 299-327, 333-350

Chapter 7: Control of gene expression pages 369-378, 380-392, 404-436

**Topic: Internal organization of the cell**

Chapter 10: Membrane structure pages 563-583, 588-594

Chapter 11: Membrane transport pages 597-633

Chapter 12: Intracellular compartments and protein sorting pages 641-691

Chapter 13: Intracellular vesicular traffic pages 695-750

Chapter 15: Mechanisms of cell communication pages 813-842, 850-858

Chapter 16: The cytoskeleton  
16.1 and 16.2 pages 889-925  
16.3 and 16.4 pages 925-950

Chapter 17: The cell cycle  
17.1a, 17.1b, and 17.2 pages 963-996  
17.3 and 17.4 pages 996-1018

**Topic: Cells in their social context**

Chapter 20: Cancer pages 1091-1121

## BIO 8033 Course Deadlines

Assignment	Chapter to be covered	Chapter/HW material release date	Due date for quiz/exam/homework
Homework #1	Chapter 6	January 8/January 10, 2018	January 12 - 16, 2018 (1 day extension due to a Monday holiday)
Quiz 1	Chapter 7	January 10, 2018	January 19 - 22, 2018
Homework #2	Chapter 10	January 17/January 24, 2018	January 26 - 29, 2018
Quiz 2	Chapter 11	January 24, 2018	February 2 - 5, 2018
<b>Exam I</b>	<b>Chapters 6, 7, 10, and 11</b>	<b>Review Chapter material</b>	<b>February 9 - 12, 2018</b>
Quiz 3	Chapter 12	February 7, 2018	February 16 - 19, 2018
Homework #3	Chapter 13	February 14/February 21, 2018	February 23 - February 26, 2018
Quiz 4	Chapter 15	February 21, 2018	March 2 - 5, 2018
<b>Exam II</b>	<b>Chapters 12, 13, and 15</b>	<b>Review Chapter material</b>	<b>March 9 - 12, 2018</b>
<b>Spring break</b>	<b>No new material</b>		<b>March 12 - 16, 2018</b>
Quiz 5	Chapter 16 (16.1 and 16.2)	March 14, 2018	March 23 - 26, 2018
Homework #4	Chapter 16 (16.3 and 16.4)	March 21/March 28, 2018	March 30 - April 3, 2018 (1 day extension due to a Friday holiday)
Quiz 6	Chapter 17 (17.1a,b and 17.2)	March 28, 2018	April 6 - 9, 2018
Homework #5	Chapter 17 (17.3 and 17.4)	April 4/April 11, 2018	April 13 - 16, 2018
Quiz 7	Chapter 20	April 11, 2018	April 20 - 23, 2018
<b>Exam III</b>	<b>Chapters 16, 17, and 20</b>	<b>Review Chapter material</b>	<b>April 27 - May 1, 2018</b>

Please read the pages listed on the syllabus for Chapter 7. You can view the recorded lecture material for this chapter beginning on January 10<sup>th</sup>. The quiz that will test your knowledge of this material can be accessed beginning 7am CST on January 19<sup>th</sup> and must be completed before 2am CST January 23<sup>rd</sup> (11:59pm PST, January 22<sup>nd</sup>). To ensure submission by the deadline, the date is listed in the above table as by the end of the day on January 22<sup>nd</sup>.

Exams, quizzes, and homework assignments will open at 7am (CST) on a Friday morning and close at 2am (CST) on a Tuesday morning; giving you 4 full days (Friday, Saturday, Sunday, and Monday) in which to complete the assignment. For three of the scheduled assessments (HW#1, HW#4, Exam III), the deadline will be extended by one day giving you the day and evening of a Tuesday to complete the assessment. Exams and quizzes will be timed and can only be taken once.