

## Term Information

Effective Term Spring 2021

## General Information

Course Bulletin Listing/Subject Area Molecular Genetics  
Fiscal Unit/Academic Org Molecular Genetics - D0340  
College/Academic Group Arts and Sciences  
Level/Career Undergraduate  
Course Number/Catalog 4500.02  
Course Title General Genetics  
Transcript Abbreviation General Genetics  
Course Description The principles of genetics, including molecular genetics, transmission genetics of prokaryotes and eukaryotes, developmental and non-chromosomal genetics, recombinant DNA and genomics, and the genetics and evolution of populations. Taught online  
Semester Credit Hours/Units Fixed: 3

## Offering Information

Length Of Course 14 Week, 12 Week, 8 Week, 7 Week, 6 Week  
Flexibly Scheduled Course Never  
Does any section of this course have a distance education component? Yes  
Is any section of the course offered 100% at a distance  
Grading Basis Letter Grade  
Repeatable No  
Course Components Lecture  
Grade Roster Component Lecture  
Credit Available by Exam No  
Admission Condition Course No  
Off Campus Never  
Campus of Offering Columbus

## Prerequisites and Exclusions

Prerequisites/Corequisites Prereq: Biology 1101, 1113, or 1113H, and 3 additional sem cr hrs in Biological Sciences.  
Exclusions Not open to students with credit for 4606, 4500 or 4500.01  
Electronically Enforced No

## Cross-Listings

Cross-Listings

## Subject/CIP Code

Subject/CIP Code 26.0801  
Subsidy Level Baccalaureate Course  
Intended Rank Sophomore, Junior, Senior

## Requirement/Elective Designation

The course is an elective (for this or other units) or is a service course for other units

## Course Details

### Course goals or learning objectives/outcomes

- Students understand the principles of genetics, including molecular genetics, transmission genetics of prokaryotes and eukaryotes, developmental and non-chromosomal genetics, recombinant DNA and genomics.

### Content Topic List

- Transmission genetics
- Mendelian genetics
- Extensions and modifications to basic patterns of inheritance
- Pedigree analysis
- Linkage, recombination, and gene mapping
- The central dogma
- DNA structure and chromosome organization
- DNA replication and recombination
- Gene expression: transcription/translation
- Recombinant DNA technology and applications
- Introduction to genomics, proteomics, and bioinformatics
- Regulation of gene expression
- Mutational analysis
- Special topics

### Sought Concurrence

No

## Attachments

- Molgen4500 in person syllabus.doc: in person syllabus for comparison  
*(Syllabus. Owner: Cole, Susan Elizabeth)*
- MOLGEN 4500.01\_review\_checklist.docx: review checklist  
*(Other Supporting Documentation. Owner: Cole, Susan Elizabeth)*
- Molgen4500 DL syllabus.docx: syllabus for DL section  
*(Syllabus. Owner: Cole, Susan Elizabeth)*

## Comments

- Currently, molecular genetics 4500 has a diverse, and large population of students (~200+ per section) in the traditional classroom format. We feel many of these students, and potentially others (such as teachers and health care professionals mentioned above) currently not enrolled in the standard offering of the course, would find an online offering of general genetics attractive.  
  
In addition to the traditional group of students who enroll in MolGen4500, this course regularly also attracts teachers and health care professionals interested in continuing education. Frequently for these individuals the regular scheduled in-person classes are not a viable option. Providing an online version will provide an opportunity to also serve this group. The in person version has been designated as 4500.01. Because of a misunderstanding about course numbering the review checklist refers to the online version as 4500.01 *(by Cole, Susan Elizabeth on 07/21/2020 03:35 PM)*

**Workflow Information**

| Status           | User(s)   | Date/Time           | Step                   |
|------------------|---|---------------------|------------------------|
| Submitted        | Cole,Susan Elizabeth  | 07/21/2020 03:37 PM | Submitted for Approval |
| Approved         | Cole,Susan Elizabeth  | 07/21/2020 03:48 PM | Unit Approval          |
| Approved         | Haddad,Deborah Moore  | 07/21/2020 04:10 PM | College Approval       |
| Pending Approval | Jenkins,Mary Ellen Bigler<br>Hanlin,Deborah Kay<br>Oldroyd,Shelby Quinn<br>Vankeerbergen,Bernadette Chantal | 07/21/2020 04:10 PM | ASCCAO Approval        |

**Syllabus**  
**Molecular Genetics 4500, General Genetics**  
**Spring 2020**

Rm 001, Jennings Hall  
Lecture: M, W, & F 11:30am-12:25pm  
Genetics Learning Center:  
Room 984 Biological Sciences Building  
484 W. 12<sup>th</sup> Ave.

**Instructor**

**Contact Information**

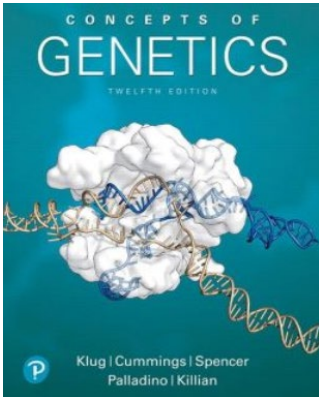
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**Gregory C. Booton, PhD**

Dept. of Molecular Genetics  
Office: 578 Aronoff Laboratory  
318 W. 12th Ave.

Email: [booton.1@osu.edu](mailto:booton.1@osu.edu)  
Phone: 614-688-1355  
Office Hours (SP 20): M & W: 10-11am

**Course Description**



This course will provide students with a robust survey of the principles of genetics, including transmission and molecular genetics, the central dogma, gene expression, biotechnology, developmental genetics, and population and quantitative genetics. The mastery of these concepts will provide the core learning objectives of this course. At the end of this course students should have a thorough understanding of classical and molecular genetic concepts, and of fundamental molecular genetic techniques. Further, the student will have the background, knowledge, and ability to carefully evaluate, interpret, and critically analyze future breakthroughs in molecular genetics and biology.

The text for this offering will be 12<sup>th</sup> edition of Klug, Cummings, Spencer, Palladino, Killian: Concepts of Genetics, AND access to the corresponding Mastering Genetics (see following for options).

**Choose ONE of the following options:**

-ISBN is 9780134839707, which is the standalone access code for MasteringGenetics. You can order the Mastering Genetics access directly from Pearson (at [www.masteringgenetics.com](http://www.masteringgenetics.com)). Students have the option to buy Mastering alone or with an eBook. You can order this with access to the ebook, which is the most economical

method to obtain the needed text. Options are also available at the Pearson website if you wish to purchase a loose-leaf or a hardcover textbook.

**We will also use the TopHat student response system during class (see below).** Use of the TopHat system is now **free** for OSU students. To register go to [www.TopHat.com](http://www.TopHat.com) and click on Sign-up in the upper right corner. Select “Student” and enter the **“join code” for MG4500, which is 441237 for Spring 2020.** Follow the online registration process and PLEASE use the provided information to familiarize yourself with this system.

Further, we will utilize the Packback Course Engagement app, details are found later in the syllabus.

### **Course Philosophy**

The instructors and teaching assistants involved in this course are here to help you achieve a “*real understanding*” of the broad range of genetic concepts explored. We feel that this course format will permit realization of that goal. However, to **actually** achieve that goal will require communication between you and us so that we can identify difficulties in understanding particular material, and then work together to help you overcome those challenges.

Therefore, this course will require a significant level of self-motivation of students to fully utilize the resources of the genetics learning center, including hardware, software, and *human* resources. Students should plan on a **minimum of two hours per week** spent in the MG learning center or on your own computer participating in course activities. We encourage you to take full advantage of this opportunity and look forward to the upcoming semester.

### **Carmen**

Pdf files of lecture power point presentations for the chapters covered in each module will be available at the Carmen website before class. Each student enrolled in MG4500 will have access to the website for the course, and you should check there for handouts, powerpoint pdf files, and announcements about the course on a regular basis. You are responsible for obtaining the handouts **BEFORE** lecture. Handouts will **not** be available in lecture. The lectures move rapidly, based on the assumption that the students have the slide handouts. If you have not used Carmen before please visit <http://telr.osu.edu/carmen-help/students/guide.html> for more information about student usage of Carmen.

## **Course Structure**

The course will comprise a combination of 3 lectures per week (Monday, Wednesday, and Friday) of 55min covering **selected** topics from the chapters associated with each of the five core modules, and student driven activities, assignments, and evaluations performed via the internet and in the genetics learning center located in the 984 Biological Sciences Building. Please see the detailed schedule on page 11-12 of this syllabus.

## **Office of Student Life Disability Services:**

If you need an accommodation based on the impact of a disability, you should contact the instructor to discuss this as soon as possible. We can discuss the course format, anticipate your needs and explore potential accommodations. We rely on the Office of Student Life Disability Services (SLDS) for assistance in verifying the need for accommodations and developing accommodation strategies. If you have not previously contacted the SLDS, we strongly encourage you to do so as soon as possible. Any student currently registered with the SLDS and taking exams at SLDS will need to provide the MG4500 instructor with the SLDS proctor sheets during the first week of class for completion.

## **PLEASE TAKE CARE OF YOURSELF (Mental Health Statement)**

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. The Ohio State University offers services to assist you with addressing these and other concerns you may be experiencing. If you are or someone you know is suffering from any of the aforementioned conditions, you can learn more about the broad range of confidential mental health services available on campus via the Office of Student Life's Counseling and Consultation Service (CCS) by visiting [ccs.osu.edu](http://ccs.osu.edu) or calling 614--292--5766. CCS is located on the 4th Floor of the Younkin Success Center and 10th Floor of Lincoln Tower. You can reach an on-call counselor when CCS is closed at 614-292-5766. If you are thinking of harming yourself or need a safe, non-judgmental place to talk, or if you are worried about someone else and need advice about what to do, 24 hour emergency help is also available through the Suicide Prevention Hotline (Columbus: 614-221-5445 / National: 800-273-8255); or text (4hope to 741741); or at [suicidepreventionlifeline.org](http://suicidepreventionlifeline.org)

## **Academic Misconduct:**

All instructional faculty and staff are required by The Ohio State University to forward all cases of suspected academic misconduct to the Committee on Academic Misconduct (COAM). Any form of academic misconduct, no matter how seemingly small, will not be tolerated in this course. Students are expected to abide by the Code of Student Conduct and the university's honor code as outlined in the University Student Handbook or suffer the consequences.

**Please note that during ALL exams you have to power down your phone and remove your smartwatch/communication wristband or other electronic communication devices. Failure to do so will be reported to COAM.**

## **OSU Wireless Access Test**

On **Wednesday, January 8<sup>th</sup> at 11:30am** the entire class will meet in the classroom (001 Jennings) at regular class time to test the wireless access capabilities of this room, test student's laptop access to Carmen, test the Respondus Lockdown Browser on your computer, test the TopHat response system connection, and further review course structure. This testing will be followed by a course lecture so **ALL** students should attend. For this test to be successful please do the following before class on Wednesday:

- 1.) FULLY CHARGE and bring your laptop or netbook to class on Wednesday, January 8<sup>th</sup> at 11:30am.**
- 2.) Make sure you have activated your OSUWIRELESS username and password**
- 3.) Install the Respondus Lockdown Browser onto your computer prior to Wednesday, January 8<sup>th</sup> at 11:30am**  
<http://www.respondus.com/lockdown/information.pl?ID=462913331>
- 4.) Register online for the class at TopHat.com (see page 2 of this syllabus). Bring your device of choice to class on Wednesday, January 8<sup>th</sup> at 11:30am. Please review the short TopHat student manual to make sure that you are familiar with this response system**

## Course Grading: MG4500

| <u>Source</u>                                | <u>Points</u> |
|--|---------------|
| 1. Module 1-5 Mastering Genetics assignments | 50            |
| 2. Module 1-4 Exams                          | 360           |
| 3. TopHat Participation Points               | 60            |
| 4. Packback Course Engagement App            | 50            |
| 5. Final Exam                                | 200           |
| <b>Total Points</b>                          | <b>720</b>    |

### 1. Mastering Genetics (50 points)

We will use the Mastering Genetics web-based tools for assignments and activities. After you buy your book (or ebook) and get the Mastering Genetics access code, you can go directly to the Mastering Genetics site using the “MyLab and Mastering” link on the Canvas version of Carmen for MG4500. Instructions to activate your course are in the announcements page of the MG4500 site.

Starting week 1 you will have textbook specific assignments and activities that you need to complete for course credit. The site will also provide you with additional resources to better understand the course material.

#### Mastering Genetics module assignments (10 Points for each module)

- A. Interaction with teaching assistants in learning center to address/resolve difficulties with material.
- B. Complete the Mastering Genetics assignments to develop proficiency of module concepts.
- C. Each assignment is due at 11pm the day before the exam. If it is not completed by that date and time, those points will be lost permanently.

**DEADLINES WILL BE STRICTLY ENFORCED. IF YOU SUBMIT LATE YOU WILL LOSE ALL POINTS ASSOCIATED WITH THAT ASSIGNMENT.**

### 2. Module 1-4 Exams (360 points)

If you **OWN** a laptop or netbook, or an iPad, you are required to use it for the exams in this course. For those students with their own computer, it is also necessary to install the Respondus Lock-Down browser available at:

<http://www.respondus.com/lockdown/information.pl?ID=462913331>



If you need help, please contact the OIT Service Desk: 614-688-HELP (4357) (TDD: 614-688-8743) or email <http://8help.osu.edu/>.

**Please remember to FULLY CHARGE your computer before taking any competency exam, as there are insufficient outlets in Jennings 001!**

**If you DO NOT OWN a laptop computer** you will need to let the contact TA (Morgan Moser.233) know as soon as possible so that you can be placed on a list to take the exams in the learning center on an OSU computer. You must notify us from your OSU email account. We are permitted to respond **only** to a written email communication **from your OSU account**.

If you own a laptop, you must take **each** module's competency exam using your own computer in the Jennings 001 classroom. If you have not configured an OSU WIRELESS internet connection, please be sure to do so **prior** to our wireless test on Wednesday, January 9<sup>th</sup>. If you need technology help you can consult the BuckeyeBar on the west side of the Thompson main library: ([cio.osu.edu/communications/community/2009/buckeyebar\\_help.html](http://cio.osu.edu/communications/community/2009/buckeyebar_help.html)).

If you experience technical problems during the exam, you may be sent to the learning center to complete the exam there.

Module exams **cannot** currently be taken on a tablet (iPad or Android). They must be taken on a laptop (or desktop computer in the learning center)

**Module 1-4 exams, 90 Points each, 360 points total**

**Module 5 exam** questions (40 points worth) will be incorporated into the final exam.

**A.** All competency exams **MUST** be taken in Jennings 001 or the MG learning center during stated hours. **OSU student ID required for the examination.**

**B.** **Students who have their own laptop computer will take the exam on the scheduled date and time in Jennings 001. Those who do not have their own laptop will take the exam in the Genetics Learning Center on the same day during class time.**

**If you miss an exam, you will need to provide the instructor with acceptable documentation of a medically excused absence to be permitted to take a makeup exam. Without acceptable documentation a makeup exam will not be permitted, and the missed exam will be scored as a zero.**

### **3. TopHat Participation (60 points)**

This course will be incorporating the TopHat student response system. The TopHat response system allows instructors to ask questions and gather students' responses during a lecture. After registration with TopHat (see page 2 above) we will test your phone/device communication during the wireless testing session on **Wednesday, January 8<sup>th</sup> at 11:30am**. You will be able to monitor your responses on your TopHat account. We are planning on incorporating TopHat response questions during each lecture. **Student TopHat responses will constitute the participation portion of your grade in this course, with a total of 60 points.** You will be awarded participation points regardless of whether your answer is correct, or incorrect.

We are incorporating the TopHat system as a learning tool so that you may better understand the material, provide feedback, and not as a test of specific knowledge. Your final participation points will be based on the percentage of responses to TopHat questions. You will receive 100% of the TopHat participation points if you have registered responses for at least 80% of the TopHat questions. Students who have registered answers to less than 80% of TopHat questions will receive proportionally less points.

#### **4. Packback Course Engagement App (50 points)**

Participation is a requirement for this course, and the Packback Questions platform will be used for online discussion about class topics. Packback Questions is an online curiosity community where you can be fearlessly curious and ask BIG questions about how what we're studying relates to life and the real world.

Writing amazing questions and answers on Packback will:

- Help you develop writing skills necessary for any career path
- Reinforce the imperative skill of justifying thoughts and claims with credible evidence- and then citing the evidence!
- Enhance critical thinking sought out by employers
- Deepen your understanding of the course content by gaining diverse insights and perspectives from your peers

Molecular Genetics is an exciting field, and breakthroughs with potential to aid in treating and curing diseases are revealed on a nearly weekly basis. In addition, many of the techniques that we will explore in this class are not without their controversial aspects. I enjoy highlighting and discussing these sorts of events and news in the field as they unfold. I feel the Packback application will be a great way for all of us to discuss these sorts of emerging technologies, techniques, and potential controversies as they arise, and as you think about these issues throughout the semester. I plan on posting news items, emerging events or techniques etc, on the Packback site for the course and I encourage you to engage here as well. I think this will be a great way to exchange ideas and expand what we will all get out of the course.

Packback participation will be worth **50 points** of the 720 total points available to you in the course. In addition, additional bonus points will be given based on Curiosity Point average scores at the end of the course. The Curiosity Point scores use an algorithm that evaluates the quality of the post itself, and the quality of the writing. Thus, it is useful as a writing project and I feel that those students who produce quality written questions should be rewarded. Those students whose average Curiosity Points at the end of the course are greater than 85 points will earn an additional **5** Packback points, those whose Curiosity Points average exceeds 90 at the end of the course will receive an additional **8** Packback points.

In order to receive your points per week, you must **post 1 question and 1 response per week relevant to our class subject matter or about one of the emerging**

**molecular genetics techniques or news stories that I, or a classmate, posts about per week.**

Before you start posting, be sure to read the [Community Guidelines](#) found in the tutorial on Packback. If your post doesn't follow the Packback Community Guidelines, there is a chance it will be removed and you won't receive points for that post.

There will be a **Sunday 11:00 PM deadline** for submissions in your community each week. **Note:** it takes 24 hours for the Packback team to moderate a post and send a coaching email. In order to get credit for a moderated post, you must edit and re-publish by the deadline. This is why it is important that you complete your Packback questions and responses far before the deadline in case your post is moderated

**You will receive a welcome email from [holla@packback.co](mailto:holla@packback.co) prompting you to finish registration and payment. Packback has already created an account for you with your school email, all you need to do is reset your password. This email may be directed to spam or filtered out, so make sure you do a thorough scan of your inbox if you can't find the email.**

- **If you search your inbox and still can't find the welcome email, or if you are new to the course, you may manually register by following the instructions below:**
- **Packback codes are also available for purchase at the Barnes and Noble OSU bookstore on campus.**
- **Navigate to <https://Packback.co/questions> and click "Register as a new student".**  
Note: If you already have an account on Packback you can login with your credentials. Packback app registration cost is \$25 (fee decreases if you are using, or have used, Packback in multiple courses)
- **Make sure to register with your SCHOOL email address and real first name and last name.**

**Enter our class community's access code into the "Join a new Community" module on your dashboard.**

**Our Community access code: 952908df-3bc5-4117-93ee-9c2d576eca1d**

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- **Follow the instructions on your screen to finish your registration.**
- **If you have ANY questions or concerns regarding Packback throughout the semester, please contact the customer support team at [holla@packback.co](mailto:holla@packback.co)!**

- For a brief introduction to Packback Questions and why we are using it in class, watch this video: [vimeo.com/packback/Welcome-to-Packback-Questions](https://vimeo.com/packback/Welcome-to-Packback-Questions)

## **5. Comprehensive Final Exam (200 Points)**

Computer based comprehensive final exam covering material from the entire course (5 core modules).

### **Course Grade Scale: % of 720 total points**

|                        |
|------------------------|
| <u>93 – 100: A</u>     |
| <u>90 -&lt; 93: A-</u> |
| <u>85 -&lt; 90: B+</u> |
| <u>80 -&lt; 85: B</u>  |
| <u>75 -&lt; 80: B-</u> |
| <u>70 -&lt; 75: C+</u> |
| <u>65 -&lt; 70: C</u>  |
| <u>60 -&lt; 65: C-</u> |
| <u>55 -&lt; 60: D</u>  |
| <u>-&lt; 55: E</u>     |

Module Chapters and Supplemental Topics (in order of presentation)

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**Module 1: Transmission Genetics**

Chapters (1) optional, but strongly suggested if your last related Biology course has been a while back!

Chapter 2: Mitosis and Meiosis

Chapter 3: Mendelian Genetics

Chapter 4: Extensions of Mendelian Genetics

Chapter 7: Sex Determination and Sex Chromosomes

Chapter 5: Chromosome Mapping in Eukaryotes

**Module 2: The Central Dogma or DNA to Phenotype**

Chapter 10: DNA Structure and Analysis

Chapter 11: DNA Replication and Recombination

Chapter 13: The Genetic Code and Transcription

Chapter 14: Translation and Proteins

**Module 3: Biotechnology**

Chapter 20: Recombinant DNA Technology & Gene Cloning

Special Topic in Genetics: Stem Cells

Chapter 21: Genomic Analysis

Chapter 22: Applications of Genetic Engineering and Biotechnology

#### **Module 4: Regulation of Gene Expression**

Chapter 16: Regulation of Gene Expression in Prokaryotes

Chapter 17: Transcriptional Regulation in Eukaryotes

Chapter 18: Posttranscriptional Regulation in Eukaryotes

Chapter 19: Epigenetic Regulation in Eukaryotes

Chapter 15: Gene Mutation, DNA Repair, and Transposition

Chapter 23: Developmental Genetics

#### **Module 5: Quantitative and Population Genetics \***

Chapter 25: Quantitative Genetics and Multifactorial Traits

Chapter 26: Population and Evolutionary Genetics

\* Module 5 subject matter will be evaluated in questions on the final exam, which is comprehensive and will contain questions from the other four modules as well.

### **Putative MG4500 Weekly Schedule:**

| <b>Date</b>           | <b>Module</b>                  | <b>Week</b> |
|-----------------------|--------------------------------|-------------|
| Mon., Jan. 6          | Course Introduction            | 1           |
| Weds., Jan. 8         | Module 1                       | 1           |
| Fri., Jan. 10         | Module 1                       | 1           |
| Mon., Jan. 13         | Module 1                       | 2           |
| Weds., Jan. 15        | Module 1                       | 2           |
| Fri., Jan. 17         | Module 1                       | 2           |
| Mon., Jan. 20         | <b>MLK Holiday, NO CLASS</b>   | 3           |
| Weds., Jan. 22        | Module 1                       | 3           |
| Fri., Jan. 24         | Module 1                       | 3           |
| Mon., Jan. 27         | Module 1                       | 4           |
| Weds., Jan. 29        | Module 1                       | 4           |
| Fri., Jan. 31         | Module 1                       | 4           |
| <b>Mon., Feb. 3</b>   | <b>Module 1 Exam</b>           | <b>5</b>    |
| Weds., Feb. 5         | Module 2                       | 5           |
| Fri., Feb. 7          | Module 2                       | 5           |
| Mon., Feb. 10         | Module 2                       | 6           |
| Weds., Feb. 12        | Module 2                       | 6           |
| Fri., Feb. 14         | Module 2                       | 6           |
| Mon., Feb. 17         | Module 2                       | 7           |
| Weds., Feb. 19        | Module 2                       | 7           |
| Fri., Feb. 21         | Module 2                       | 7           |
| <b>Mon., Feb. 24</b>  | <b>Module 2 Exam</b>           | <b>8</b>    |
| Weds., Feb. 26        | Module 3                       | 8           |
| Fri., Feb. 28         | Module 3                       | 8           |
| Mon., Mar. 2          | Module 3                       | 9           |
| Weds., Mar. 4         | Module 3                       | 9           |
| Fri., Mar. 6          | Module 3                       | 9           |
| <b>Mon., Mar. 9</b>   | <b>Spring Break (no class)</b> | <b>10</b>   |
| <b>Weds., Mar. 11</b> | <b>Spring Break (no class)</b> | <b>10</b>   |
| <b>Fri., Mar. 13</b>  | <b>Spring Break (no class)</b> | <b>10</b>   |
| Mon., Mar. 16         | Module 3                       | 11          |
| Weds., Mar. 18        | Module 3                       | 11          |
| Fri., Mar. 20         | Module 3                       | 11          |
| <b>Mon., Mar. 23</b>  | <b>Module 3 Exam</b>           | <b>12</b>   |
| Weds., Mar. 25        | Module 4                       | 12          |
| Fri., Mar. 27         | Module 4                       | 12          |
| Mon., Mar. 30         | Module 4                       | 13          |
| Weds., Apr. 1         | Module 4                       | 13          |
| Fri., Apr. 3          | Module 4                       | 13          |

| <b>Date</b>          | <b>Module</b>        | <b>Week</b> |
|----------------------|----------------------|-------------|
| Mon., Apr. 6         | Module 4             | 14          |
| Weds., Apr. 8        | Module 4             | 14          |
| Fri., Apr. 10        | Module 4             | 14          |
| <b>Mon., Apr. 13</b> | <b>Module 4 Exam</b> | <b>15</b>   |
| Weds., Apr. 15       | Module 5             | 15          |
| Fri., Apr. 17        | Module 5             | 15          |
| Mon., Apr. 20        | Module 5             | 16          |

**Final Exam, Friday, April 24<sup>th</sup> 12:00-1:45PM**





# SYLLABUS

# MOLECULAR GENETICS 4500.02

General Genetics  
Autumn 2021 – Online

## COURSE OVERVIEW

### Instructor

**Instructor:** Gregory C. Booton, PhD

**Email address:** [booton.1@osu.edu](mailto:booton.1@osu.edu)

**Office Phone number:** (614) 688-1355

**Office hours:** Mon and Wed 10am-12pm via CarmenZoom, TA office hours also CarmenZoom and will be posted on Carmen site for the course

### Course description

This course will provide students with a robust survey of the principles of genetics, including transmission and molecular genetics, the central dogma, gene expression, biotechnology, and population and quantitative genetics. The mastery of these concepts will provide the core learning objectives of this course. At the end of this course students should have a thorough understanding of classical and molecular genetic concepts, and of fundamental molecular genetic techniques. Further, the student will have the background, knowledge, and ability to carefully evaluate, interpret, and critically analyze future breakthroughs in molecular genetics and biology.

### Course learning outcomes

By the end of this course, students should successfully be able to:

- Overall, following the successful completion of this course students will have an appreciation of...

- ....an appreciation of the scientific method and how it is applied in the field of genetics
- Specifically, upon the successful completion of this course.....
- .....will understand the processes of transmission of genetic information from one generation to subsequent generations.
- Specifically, upon the successful completion of this course.....
- .....will understand the chemical makeup of the genetic material and the processes involved in its replication, and expression of encoded information
- Students completing this course will also.....
- .....understand gene regulation
- Students completing this course will.....
- .....know the most important experimental techniques used in current molecular genetic research
- Upon the successful completion of the course students will....
- .....be able to evaluate the ethical issues raised by genetic experimentation/innovation

## COURSE FORMAT AND DELIVERY

**Mode of delivery:** This course is 100% online. There are no required sessions when you must be logged in to Carmen at a scheduled time.

**Pace of online activities:** This course is divided into **modules** that are released one week before the start of each module. PowerPoint or pdf files of lecture presentations, and assigned reading of chapters for each module will be available at the Carmen website before class. Each student enrolled in MolGen4500 will have access to the website for the course, and you should check there for assignments, PowerPoint files, and announcements about the course on a regular basis. You are responsible for obtaining the PowerPoint handouts **BEFORE** lecture. The course moves rapidly, based on the assumption that the students have the PowerPoint handouts. If you have not used Carmen before please visit <http://telr.osu.edu/carmen-help/students/guide.html> for more information about student usage of Carmen. Students are expected to keep pace with weekly deadlines but may schedule their efforts freely within that time frame.

**Assignments:** The course will utilize the Mastering Genetics online platform for assigned pre-chapter assignments, and end of module homework sets. Further, there will be sets of written assignments/projects/reading assignments associated with each module. These assignments will be turned in on Carmen. The due dates and times for these assignments will be on the Carmen site for the course, and in the Mastering Genetics online website. It is the student's responsibility to know and meet the assignment deadlines.

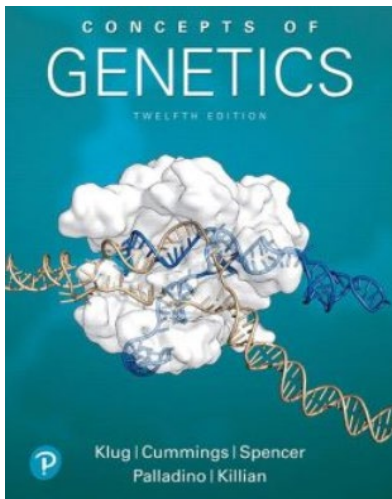
**Credit hours and work expectations:** This is a **3-credit-hour course**. According to [Ohio State rules](#), students should expect around 3 hours per week of time spent on direct instruction (instructor content and Carmen activities, for example) in addition to 6 hours of homework (reading and assignment preparation and completion, for example) to receive a grade of (C) average.

**Attendance and participation requirements:** Because this is an online course, your attendance is based on your online activity and participation. The following is a summary of everyone's expected participation:

- **Participating in online activities for attendance: AT LEAST ONCE PER WEEK**  
You are expected to log in to the course in Carmen every week. (During most weeks you will probably log in many times.). There will be a variety of mastering genetics assignments and other activity assignments that will be submitted on Carmen over the course of the semester. If you have a situation that might cause you to miss an entire week of class, or a particular submission deadline, please discuss it with me *as soon as possible*.
- **Office hours and live sessions: OPTIONAL**  
All live, scheduled events for the course, including TA and instructor office hours, are optional.
- **Participating in discussion forums: REQUIRED**  
As part of your participation, each week you will need to submit one question and one response using the **Packback Course Engagement App** (see details below)

## COURSE MATERIALS AND TECHNOLOGIES

### Textbook: Available via CarmenBooks



The required text for this offering will be 12<sup>th</sup> edition of Klug, Cummings, Spencer, Palladino, Killian: Concepts of Genetics, AND access to the corresponding Mastering Genetics (see following for options).

**CarmenBooks:** The textbook and courseware for this course is being made available via CarmenBooks. Through CarmenBooks, students obtain publisher materials electronically through CarmenCanvas, saving them up to 80% per title. The fee for this material is included as part of tuition and is listed as *CarmenBooks fee* on your Statement of Account. In addition to cost-savings, materials provided through CarmenBooks are available immediately on or before the first day of class. There is no need to wait for

financial aid or scholarship money to purchase your textbook.

Unless you choose to opt-out of the program, you do NOT need to purchase any

materials for this course at the bookstore. For more information on the program or information on how to opt out, [please visit the CarmenBooks website](#).

## Other Fees and Requirements

- **Packback Course Engagement App** (see details below)

## Course Technology

For help with your password, university email, Carmen, or any other technology issues, questions, or requests, contact the Ohio State IT Service Desk. Standard support hours are available at [ocio.osu.edu/help/hours](https://ocio.osu.edu/help/hours), and support for urgent issues is available 24/7.

- **Self-Service and Chat support:** [ocio.osu.edu/help](https://ocio.osu.edu/help)
- **Phone:** 614-688-4357(HELP)
- **Email:** [servicedesk@osu.edu](mailto:servicedesk@osu.edu)
- **TDD:** 614-688-8743

## BASELINE TECHNICAL SKILLS FOR ONLINE COURSES

- Basic computer and web-browsing skills
- Navigating Carmen: for questions about specific functionality, see the [Canvas Student Guide](#).

## REQUIRED TECHNOLOGY SKILLS SPECIFIC TO THIS COURSE

- [CarmenZoom for virtual meetings](#)

## REQUIRED EQUIPMENT

- Computer: current Mac (OS X) or PC (Windows 10) with high-speed internet connection
- Webcam: built-in or external webcam, fully installed and tested
- Microphone: built-in laptop or tablet mic or external microphone
- Other: a mobile device (smartphone or tablet) or landline to use for BuckeyePass authentication

## REQUIRED SOFTWARE

- [Microsoft Office 365](#): All Ohio State students are now eligible for free Microsoft Office 365 ProPlus through Microsoft's Student Advantage program. Full instructions for downloading and installation can be found [at go.osu.edu/office365help](https://go.osu.edu/office365help).

## CARMEN ACCESS

You will need to use [BuckeyePass](#) multi-factor authentication to access your courses in Carmen. To ensure that you are able to connect to Carmen at all times, it is recommended that you take the following steps:

- Register multiple devices in case something happens to your primary device. Visit the [BuckeyePass - Adding a Device](#) help article for step-by-step instructions.
- Request passcodes to keep as a backup authentication option. When you see the Duo login screen on your computer, click **Enter a Passcode** and then click the **Text me new codes** button that appears. This will text you ten passcodes good for 365 days that can each be used once.
- Download the [Duo Mobile application](#) to all of your registered devices for the ability to generate one-time codes in the event that you lose cell, data, or Wi-Fi service.

If none of these options will meet the needs of your situation, you can contact the IT Service Desk at 614-688-4357 (HELP) and IT support staff will work out a solution with you.

## GRADING

### How your grade is calculated

| ASSIGNMENT CATEGORY                                 | POINTS     |
|---|------------|
| <b>1. Module 1-5 Mastering Genetics assignments</b> | 110        |
| <b>2. Submitted Class Activities/Projects</b>       | 240        |
| <b>3. Module 1-4 Exam (60 points each)</b>          | 240        |
| <b>4. Packback Course Engagement</b>                | 60         |
| <b>5. Final Exam</b>                                | 150        |
|   |            |
| Total   | <b>800</b> |

## 1. Mastering Genetics Assignments (110 points)

We will use the Mastering Genetics web-based tools for assignments and activities. After you buy your book (or ebook) and get the Mastering Genetics access code, you can now go directly to the Mastering Genetics site using the “MyLab and Mastering” link on the new Canvas version of Carmen for MolGen4500. Instructions to activate your course are in the announcements page of the MolGen4500 site. Starting week 1 you will have textbook specific assignments and activities that you need to complete for course credit. The site will also provide you with additional resources to better understand the course material.

There will be pre-lecture quizzes for each chapter that we will be exploring in each module (4 points per chapter, 60 points total). Before each module exam there will be a mastering genetics assignment covering the material from all of the chapters on that module exam.

### Mastering Genetics Module Assignments (10 Points for each module)

- A.** Interaction with instructor and/or teaching assistants in office hours to address/resolve difficulties with course content.
- B.** Complete the Mastering Genetics assignments for the chapters associated with each module to develop proficiency of module concepts.
- C. Each module’s Mastering Genetic assignment is due at 11pm the day before the exam day. If it is not completed by that date and time, those points will be lost permanently.**

**DEADLINES WILL BE STRICTLY ENFORCED. IF YOU SUBMIT LATE YOU WILL LOSE ALL POINTS ASSOCIATED WITH THAT ASSIGNMENT.**

## **2. Submitted Class Activities/Projects (240 points)**

Over the course of the semester there will be a variety of assignments that are submitted via Carmen associated with each of the modules. Details on these assignments and due dates will be found on the Carmen assignments and module pages for the course. The total points value of these assignments over the course of the semester will be 240 points.

### 3. Module 1-4 Exams (240 points)

Online using Carmen. Modules 1- through 4 exams are 60 Points each for a total of 240 points.

### 4. Packback Course Engagement App (60 points)

Participation is a requirement for this course, and the Packback Questions platform will be used for online discussion about class topics. Packback Questions is an online curiosity community where you can be fearlessly curious and ask BIG questions about how what we're studying relates to life and the real world. This interaction and connection with your peers is especially important in an online course so that all students can feel that they are part of the class community, and have the opportunity to interact, and learn from others.

Further, writing amazing questions and answers on Packback will:

- Help you develop writing skills necessary for any career path
- Reinforce the imperative skill of justifying thoughts and claims with credible evidence- and then citing the evidence!
- Enhance critical thinking sought out by employers
- Deepen your understanding of the course content by gaining diverse insights and perspectives from your peers

Molecular Genetics is an exciting field, and breakthroughs with potential to aid in treating and curing diseases are revealed on a nearly weekly basis. In addition, many of the techniques that we will explore in this class are not without their controversial aspects. I enjoy highlighting and discussing these sorts of events and news in the field as they unfold. I feel the Packback application will be a great way for all of us to discuss these sorts of emerging technologies, techniques, and potential controversies as they arise, and as you think about these issues throughout the semester. I plan on posting news items, emerging events or techniques etc, on the Packback site for the course and I encourage you to engage here as well. I think this will be a great way to exchange ideas and expand what we will all get out of the course.

Packback participation will be worth 60 points of the 800 total points available to you in the course. In order to receive your points per week, you must **post 1 question and 1 response per week relevant to our class subject matter or about one of the emerging molecular genetics techniques or news stories that I, or a classmate, posts about per week.**

Before you start posting, be sure to read the [Community Guidelines](#) found in the tutorial on Packback. If your post doesn't follow the Packback Community Guidelines, there is a chance it will be removed and you won't receive points for that post. There will be a **Sunday**

**11:59 PM deadline** for submissions in your community each week. **Note:** it takes 24 hours for the Packback team to moderate a post and send a coaching email. In order to get credit for a moderated post, you must edit and re-publish by the deadline. This is why it is important that you complete your Packback questions and responses far before the deadline in case your post is moderated

You will receive a welcome email from [holla@packback.co](mailto:holla@packback.co) prompting you to finish registration and payment. Packback has already created an account for you with your school email, all you need to do is reset your password. This email may be directed to spam or filtered out, so make sure you do a thorough scan of your inbox if you can't find the email.

- If you search your inbox and still can't find the welcome email, or if you are new to the course, you may manually register by following the instructions below:

Navigate to <https://Packback.co/questions> and click “Register as a new student”. Note: If you already have an account on Packback you can login with your credentials. Packback app registration cost is \$25 (fee decreases if you are using, or have used, Packback in multiple courses)

- Make sure to register with your SCHOOL email address and real first name and last name.

Enter our class community’s access code into the “Join a new Community” module on your dashboard.

Our Community access code: XXXXXXXX-XXXX-XXXX-XXXX-XXXXXXXXXXXX

- Follow the instructions on your screen to finish your registration.

If you have ANY questions or concerns regarding Packback throughout the semester, please contact the Packback customer support team at [holla@packback.co](mailto:holla@packback.co) or at the following webpage: <https://help.packback.co/hc/en-us>

For a brief introduction to Packback Questions and why we are using it in class, watch this video: [vimeo.com/packback/Welcome-to-Packback-Questions](https://vimeo.com/packback/Welcome-to-Packback-Questions)

The Packback privacy policy is found here: <https://www.packback.co/site/privacy/>

Information regarding Packback commitment to accessibility for all students can be found here: <https://www.packback.co/product/accessibility/>



## **5. Comprehensive Final Exam (150 Points)**

Computer based comprehensive final exam covering material from the entire course (5 core modules). **Note: Module 5 content will be evaluated (40 points worth) into the final exam.**

## **Late Assignments**

Late submissions will not be accepted. ***Please refer to the Carmen site for the course for specific assignment due dates.***

### **Grading scale**

93 – 100: A

90 -< 93: A-

85 -< 90: B+

80 -< 85: B

75 -< 80: B-

70 -< 75: C+

65 -< 70: C

60 -< 65: C-

55 -< 60: D

-< 55: E

## **Faculty response time**

I am providing the following list to give you an idea of my intended availability throughout the course. (Remember that you can call **614-688-HELP** at any time if you have a technical problem.)

- **Grading and feedback:** For large weekly assignments, you can generally expect feedback within **7 days**.

- **Email:** I will reply to emails within **24 hours on days when class is in session at the university.**

## OTHER COURSE POLICIES

### Discussion and communication guidelines

The following are my expectations for how we should communicate as a class. Above all, please remember to be respectful and thoughtful. I am committed to promoting a welcoming climate for all students. Please contact me if you are concerned about diversity issues in the course and in your exchanges with other students as a part of class activities. Any conversations with me will be conducted with confidentiality, safety and respect and within university guidelines.

- **Tone and civility:** Let's maintain a supportive learning community where everyone feels safe and where people can disagree amicably. Remember that sarcasm doesn't always come across online.
- **Citing your sources:** When we have academic discussions, please cite your sources to back up what you say. For the textbook or other course materials, list at least the title and page numbers. For online sources, include a link.

### Academic integrity policy

#### POLICIES FOR THIS ONLINE COURSE

- **Quizzes and exams:** You must complete the chapter pre-lecture, mastering genetics assignments, module exams and final exam yourself, without any external help or communication. Practice self-evaluation quizzes are included on Carmens as self-checks, and preparation for module exams without points attached.
- **Written assignments:** Your written assignments, projects, etc (including Packback posts), should be your own original work. In formal assignments, you should follow **[MLA/APA]** style to cite the ideas and words of your research sources. You are encouraged to ask a trusted person to proofread your assignments before you turn them in—but no one else should revise or rewrite your work.
- **Reusing past work:** In general, you are prohibited in university courses from turning in work from a past class to your current class, even if you modify it. If you want to build on past research or revisit a topic you've explored in previous courses, please discuss the situation with me.

- **Falsifying research or results:** All research you will conduct in this course is intended to be a learning experience; you should never feel tempted to make your results or your library research look more successful than it was.
- **Collaboration and informal peer-review:** The course includes many opportunities for formal collaboration with your classmates. While study groups and peer-review of major written projects is encouraged, remember that comparing answers on a quiz or assignment is not permitted. If you're unsure about a particular situation, please feel free just to ask ahead of time.
- **Group projects:** This course may include group projects, which can be stressful for students when it comes to dividing work, taking credit, and receiving grades and feedback. I have attempted to make the guidelines for group work as clear as possible for each activity and assignment, but please let me know if you have any questions.

## OHIO STATE'S ACADEMIC INTEGRITY POLICY

Academic integrity is essential to maintaining an environment that fosters excellence in teaching, research, and other educational and scholarly activities. Thus, The Ohio State University and the Committee on Academic Misconduct (COAM) expect that all students have read and understand the university's [\*Code of Student Conduct\*](#), and that all students will complete all academic and scholarly assignments with fairness and honesty. Students must recognize that failure to follow the rules and guidelines established in the university's *Code of Student Conduct* and this syllabus may constitute "Academic Misconduct."

The Ohio State University's *Code of Student Conduct* (Section 3335-23-04) defines academic misconduct as: "Any activity that tends to compromise the academic integrity of the university or subvert the educational process." Examples of academic misconduct include (but are not limited to) plagiarism, collusion (unauthorized collaboration), copying the work of another student, and possession of unauthorized materials during an examination. Ignorance of the university's *Code of Student Conduct* is never considered an excuse for academic misconduct, so I recommend that you review the *Code of Student Conduct* and, specifically, the sections dealing with academic misconduct.

**If I suspect that a student has committed academic misconduct in this course, I am obligated by university rules to report my suspicions to the Committee on Academic Misconduct.** If COAM determines that you have violated the university's *Code of Student Conduct* (i.e., committed academic misconduct), the sanctions for the misconduct could include a failing grade in this course and suspension or dismissal from the university.

If you have any questions about the above policy or what constitutes academic misconduct in this course, please contact me.

Other sources of information on academic misconduct (integrity) to which you can refer include:

- The Committee on Academic Misconduct web pages ([COAM Home](#))
- *Ten Suggestions for Preserving Academic Integrity* ([Ten Suggestions](#))
- *Eight Cardinal Rules of Academic Integrity* ([www.northwestern.edu/uacc/8cards.htm](http://www.northwestern.edu/uacc/8cards.htm))

## Copyright disclaimer

The materials used in connection with this course may be subject to copyright protection and are only for the use of students officially enrolled in the course for the educational purposes associated with the course. Copyright law must be considered before copying, retaining, or disseminating materials outside of the course.

## Student Academic support

The goal of this course is that students will succeed and enhance their knowledge level in genetics. If you would like to explore information on student academic services please visit the following website: <http://advising.osu.edu/welcome.shtml>

For further information for other student services offered at the OSU main campus, please visit the following website: <http://ssc.osu.edu>

## Statement on Title IX

All students and employees at Ohio State have the right to work and learn in an environment free from harassment and discrimination based on sex or gender, and the university can arrange interim measures, provide support resources, and explain investigation options, including referral to confidential resources.

If you or someone you know has been harassed or discriminated against based on your sex or gender, including sexual harassment, sexual assault, relationship violence, stalking, or sexual exploitation, you may find information about your rights and options at [titleix.osu.edu](http://titleix.osu.edu) or by contacting the Ohio State Title IX Coordinator at [titleix@osu.edu](mailto:titleix@osu.edu). Title IX is part of the Office of Institutional Equity (OIE) at Ohio State, which responds to all bias-motivated incidents of harassment and discrimination, such as race, religion, national origin and disability. For more information on OIE, visit [equity.osu.edu](http://equity.osu.edu) or email [equity@osu.edu](mailto:equity@osu.edu).

## Your mental health

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. The Ohio State University offers services to assist you with addressing these and other concerns you may be experiencing. If you find yourself feeling isolated, anxious or overwhelmed, please know that there are resources to help: [ccs.osu.edu](https://ccs.osu.edu). You can reach an on-call counselor when CCS is closed at (614) 292-5766 and 24 hour emergency help is also available through the 24/7 National Prevention Hotline at 1-(800)-273-TALK or at [suicidepreventionlifeline.org](https://suicidepreventionlifeline.org). The Ohio State Wellness app is also a great resource available at [go.osu.edu/wellnessapp](https://go.osu.edu/wellnessapp).

## **ACCESSIBILITY ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES**

### **Requesting accommodations**

The university strives to make all learning experiences as accessible as possible. Students with disabilities (including mental health, chronic or temporary medical conditions) that have been certified by the Office of Student Life Disability Services will be appropriately accommodated and should inform the instructor as soon as possible of their needs. The Office of Student Life Disability Services is located in 098 Baker Hall, 113 W. 12th Avenue; telephone 614- 292-3307, [slds@osu.edu](mailto:slds@osu.edu); [slds.osu.edu](https://slds.osu.edu).

### **Accessibility of course technology**

This online course requires use of Carmen (Ohio State's learning management system) and other online communication and multimedia tools. If you need additional services to use these technologies, please request accommodations with your instructor.

- [CarmenCanvas accessibility](#)

- Streaming audio and video
- [CarmenZoom accessibility](#)
- Packback course engagement app

## COURSE SCHEDULE

| Week | Dates     | Topics, Readings, Assignments, Deadlines  |
|------|-----------|---|
| 1    | 8/23-8/27 | <p><b><u>Module 1: Transmission Genetics</u></b></p> <p>Chapter 2: Mitosis and Meiosis<br/><i>Chp. 2 Mastering Genetics assignment</i></p>  |
| 2    | 8/30-9/3  | <p>Chapter 3: Mendelian Genetics<br/><i>Chp. 3 Mastering Genetics assignment</i></p>  |
| 3    | 9/6-9/10  | <p>Chapter 4: Extensions of Mendelian Genetics<br/>Chapter 7: Sex Determination and Sex Chromosomes<br/><i>Chp. 4 Mastering Genetics assignment</i><br/><i>Chp. 7 Mastering Genetics assignment</i></p> |
| 4    | 9/13-9/17 | <p>Chapter 5: Chromosome Mapping in Eukaryotes<br/><i>Chp. 5 Mastering Genetics assignment</i></p>  |

| Week | Dates       | Topics, Readings, Assignments, Deadlines   |
|------|-------------|--|
|      |             | Module 1 Mastering Genetics Review assignment due  |
| 5    | 9/20-9/24   | <p><b><u>Module 2: The Central Dogma or DNA to Phenotype</u></b></p> <p>Chapter 10: DNA Structure and Analysis<br/>           Chapter 11: DNA Replication and Recombination<br/> <i>Chp. 10 Mastering Genetics assignment</i><br/> <i>Chp. 11 Mastering Genetics assignment</i></p>                  |
| 6    | 9/27-10/1   | <p>Chapter 13: The Genetic Code and Transcription<br/> <i>Chp. 13 Mastering Genetics assignment</i></p>  |
| 7    | 10/4-10/8   | <p>Chapter 14: Translation and Proteins<br/> <i>Chp. 14 Mastering Genetics assignment</i><br/>           Module 2 Mastering Genetics Review assignment due</p>   |
| 8    | 10/11-10/15 | <p><b><u>Module 3: Biotechnology</u></b></p> <p>Chapter 20: Recombinant DNA Technology &amp; Gene Cloning<br/> <i>Chp. 20 Mastering Genetics assignment</i></p>  |
| 9    | 10/18-10/22 | <p>Chapter 21: Genomic Analysis<br/> <i>Chp. 21 Mastering Genetics assignment</i></p>  |
| 10   | 10/25-10/29 | <p>Chapter 22: Applications of Genetic Engineering and Biotechnology<br/>           Module 3 Mastering Genetics Review assignment due</p>  |
| 11   | 11/1-11/5   | <p><b><u>Module 4: Regulation of Gene Expression</u></b></p> <p>Chapter 16: Regulation of Gene Expression in Prokaryotes<br/>           Chapter 17: Transcriptional Regulation in Eukaryotes<br/> <i>Chp. 16 Mastering Genetics assignment</i><br/> <i>Chp. 17 Mastering Genetics assignment</i></p> |
| 12   | 11/8-11/12  | <p>Chapter 18: Posttranscriptional Regulation in Eukaryotes<br/>           Chapter 19: Epigenetic Regulation in Eukaryotes<br/> <i>Chp. 18 Mastering Genetics assignment</i></p>   |

| Week | Dates       | Topics, Readings, Assignments, Deadlines   |
|------|-------------|--|
|      |             | <i>Chp. 19 Mastering Genetics assignment</i>   |
| 13   | 11/15-11/19 | <p>Chapter 15: Gene Mutation, DNA Repair, and Transposition</p> <p>Chapter 23: Developmental Genetics</p> <p><i>Chp. 15 Mastering Genetics assignment</i></p> <p><i>Chp. 23 Mastering Genetics assignment</i></p> <p><i>Module 4 Mastering Genetics Review assignment due</i></p>  |
| 14   | 11/22-12/3  | <p>Module 5: Quantitative and Population Genetics</p> <p>Chapter 25: Quantitative Genetics and Multifactorial Traits</p> <p>Chapter 26: Population and Evolutionary Genetics</p> <p><i>Chp. 25 Mastering Genetics assignment</i></p> <p><i>Chp. 26 Mastering Genetics assignment</i></p> <p><i>Module 5 Mastering Genetics Review assignment due</i></p> |



## Arts and Sciences Distance Learning Course Component Technical Review Checklist

**Course: Molecular Genetics 4500.01**

**Instructor: Gregory Booton**

**Summary: General Genetics**

| Standard - Course Technology  | Yes | Yes with Revisions | No | Feedback/<br>Recomm.  |
|---|-----|--------------------|----|---|
| 6.1 The tools used in the course support the learning objectives and competencies.  | X   |                    |    | <ul style="list-style-type: none"> <li>• Office 365</li> <li>• Carmen</li> <li>• Packback</li> </ul>  |
| 6.2 Course tools promote learner engagement and active learning.  | X   |                    |    | <ul style="list-style-type: none"> <li>• Carmen Discussion Board</li> <li>• Carmen Wiki</li> <li>• Zoom</li> </ul>  |
| 6.3 Technologies required in the course are readily obtainable.   | X   |                    |    | All are available for free.   |
| 6.4 The course technologies are current.  | X   |                    |    | All are updated regularly.  |
| 6.5 Links are provided to privacy policies for all external tools required in the course.   | X   |                    |    | Please add privacy policy for Packback.   |
| Standard - Learner Support  |     |                    |    |   |
| 7.1 The course instructions articulate or link to a clear description of the technical support offered and how to access it.  |     | X                  |    | Links to 8HELP are provided. Please add Packback support links.   |
| 7.2 Course instructions articulate or link to the institution's accessibility policies and services.  | X   |                    |    | a   |
| 7.3 Course instructions articulate or link to an explanation of how the institution's academic support services and resources can help learners succeed in the course and how learners can obtain them. |     | X                  |    | Please add statement b  |
| 7.4 Course instructions articulate or link to an explanation of how the institution's student services and resources can help learners succeed and how learners can obtain them.                        |     | X                  |    | Please add statement c  |
| Standard – Accessibility and Usability  |     |                    |    |   |
| 8.1 Course navigation facilitates ease of use.  | X   |                    |    | Recommend using the Carmen Distance Learning "Master Course" template developed by ODEE and available in the Canvas Commons to provide student-users with a consistent user experience in terms of navigation and access to course content. |
| 8.2 Information is provided about the accessibility of all technologies required in the course.   |     | X                  |    | University accessibility policy is present. Please add accessibility policy for Packback  |
| 8.3 The course provides alternative means of access to course materials in formats that meet the needs of diverse learners.   | X   |                    |    | Statement is included with contact information on how to make accommodations.   |
| 8.4 The course design facilitates readability   | X   |                    |    |   |
| 8.5 Course multimedia facilitate ease of use.   | X   |                    |    | All assignments and activities that use the Carmen LMS with embedded multimedia facilitates ease of use. All other multimedia resources facilitate ease of use by being available through a standard web browser                            |

## Reviewer Information

- Date reviewed: 7/14/20
- Reviewed by: Ian Anderson

**Notes: Please make required changes above and submit to curricular committee!**

<sup>a</sup>The following statement about disability services (recommended 16 point font):  
Students with disabilities (including mental health, chronic or temporary medical conditions) that have been certified by the Office of Student Life Disability Services will be appropriately accommodated and should inform the instructor as soon as possible of their needs. The Office of Student Life Disability Services is located in 098 Baker Hall, 113 W. 12th Avenue; telephone 614- 292-3307, [slds@osu.edu](mailto:slds@osu.edu); [slds.osu.edu](http://slds.osu.edu).

<sup>b</sup>Add to the syllabus this link with an overview and contact information for the student academic services offered on the OSU main campus.  
<http://advising.osu.edu/welcome.shtml>

<sup>c</sup>Add to the syllabus this link with an overview and contact information for student services offered on the OSU main campus. <http://ssc.osu.edu>. Also, consider including this link in the “Other Course Policies” section of the syllabus.