Genetics (Biol 3400K, section 1) Spring 2017

I got a hundred bucks says my baby beats Pete's baby. I just think genetics are in my favour. ~Andre Agassi

Instructor: Prof. Elizabeth Lucht  Office: 213 Peeples Hall  E-mail: elucht@daltonstate.edu

*please include course name and number in the subject line of all email correspondence

Office Hours: On GAView and office door, by appointment

Class Meets: 01 Mon & Wed, 9:25 - 10:40 a.m. in Peeples Hall 111

Lab Meets: Wed, 1:40-4:30 p.m. in Peeples Hall 318

Textbook: Concepts of Genetics with MasteringGenetics. (Note: You get a free e-book with access to Mastering Genetics, so you do not have to buy the text separately.)

Lab Manual: Labs will be available through GAView and must be printed and read in advance. Bring a copy to lab each week.

Course Description: This course is designed to enhance and develop students understanding and application of genetic principles through problem-solving. Geneticists are concerned with the transmission of genes from one generation to the next, the physical structure of genes, the variation in genes, and the ways in which genes dictate the features of a species. This information will provide the background/foundation students need for upper-level biology courses.

Course Objectives: At the end of this course you should be able to:

1. demonstrate knowledge of how genetic information is stored, organized, maintained, utilized.
2. demonstrate understanding of the mechanisms of genetic inheritance.
3. identify sources of genetic variation and the role this plays in survival and adaptation.
4. identify factors involved in gene expression and the role they play in both normal cellular biology and in developmental biology.
5. read primary research articles, interpret the findings, and give scientific presentations.

Prerequisites: READ 0098 unless exempt.

Evaluation:

<table>
<thead>
<tr>
<th>Item</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 Lecture Exams (100 points each)</td>
<td>400</td>
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<tr>
<td>Final exam (cumulative)</td>
<td>100</td>
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<tr>
<td>Mastering Genetics</td>
<td>100</td>
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<tr>
<td>Research paper</td>
<td>100</td>
</tr>
<tr>
<td>Lab final</td>
<td>100</td>
</tr>
<tr>
<td>TOTAL</td>
<td>800</td>
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Lecture Exams: Exams can be composed of multiple choice, true/false, fill-in, and short answer questions. They can include questions pertaining to appropriate laboratory material.

Final Exam: The exam will be comprehensive plus will include questions about material from the last couple of weeks.

Assignments: You will need to complete Mastering Genetics homework by the due dates listed online.

Research Paper: Instructions will be posted on GaView.

Lab: You are expected to prepare for the current lab by reading the introduction and appropriate sections in your lab manual.
Final Grade Assignment:  
90 - 100%  A
80 - 89%  B
70 - 79%  C
60 - 69%  D
Less than 60%  F

Classroom Policies and expectations

Absence/Makeup Policy:

Class: I will try to start and end class on time, so please arrive on time. You are strongly advised, but not required, to attend all class meetings. Most of the material on the exams comes from class lectures, so it is to your benefit to attend all classes. If you miss class, you will be responsible for obtaining material, announcements, and assignments given in class. I post most things on GaView.

Lab attendance is mandatory. If you know in advance that you will miss a lab period, notify me as soon as possible. If you miss a lab exercise, bring in documentation explaining why you were absent the next class period you attend (due to medical issues, jury duty, armed forces duties.). It is your responsibility to contact me. Each absence will lower your final grade by 5 points unless a makeup paper is completed. Only excused absences may be made up. We will begin discussion of the lab promptly. If you are more than 15 minutes late, it is an absence.

Exams The score you earn on your final exam will be used in place of your lowest exam. If you miss an exam, then the final exam will be used in place of the missing exam grade. Make-up exams will not be given. You may not leave the room during an exam.

Syllabus Information Statements

DROP/WITHDRAWAL POLICY: Revised June 25, 2007
Students wishing to withdraw from the course may do so without penalty until the mid-point of the semester, and a grade of W will be assigned. After that point, withdrawal without penalty is permitted only in cases of extreme hardship as determined by the Vice President for Academic Affairs; otherwise a grade of WF will be issued. (Please note: At Dalton State College, the Hardship Withdrawal process requires students to withdraw from all classes at the college.) The proper form for dropping a course is the Schedule Adjustment Form, which can be obtained at the Enrollment Services Office in Westcott Hall. The Schedule Adjustment Form must be submitted to the Enrollment Services Office. Students who disappear, completing neither the official withdrawal procedure nor the course work, will receive the grade of F. This instructor will not withdraw students from the class. Withdrawal from any Dalton State College classes is a student responsibility.

COMPLETE WITHDRAWAL STATEMENT: REVISED JULY 17, 2012
“The proper form for withdrawing from all classes at the college after the official drop/add period but before the published withdrawal date is the Schedule Adjustment Form. All students must meet with a staff member at the Office of Academic Resources in the Pope Student Center to initiate the withdrawal process. After meeting with the staff member, students will then finalize the withdrawal process in the Enrollment Services Office.”

ETHICAL CONDUCT

Academic Dishonesty: Cheating and plagiarism are a part of the Dalton State Code of Student Conduct, which can be found in its most updated form at http://daltoncampuslife.com/student-conduct/. ANY assistance provided or given in any way toward work in a class constitutes cheating, unless such behavior is authorized by your instructor. Additionally, any use of the ideas or words of others should be noted, or this will constitute plagiarism. For more details on what Dalton State considers to be Academic Dishonesty, please review the Code of Student Conduct. Instructors will assign grades based on classroom performance.
Additional sanctions may be provided as a learning experience from the Student Conduct process. Borrowing another students’ work or collaborating on an assignment not designated as collaborative is unacceptable. Furthermore, presenting work that was completed for another class, while not plagiarism technically, is not the same as presenting original work, and is therefore unacceptable. **Cheating on an exam or lab will result in an "F" for the course and referral to the Student Life Academic Misconduct board. Cheating involves using other resources other than your own mind and will not be tolerated. I may use plagiarism detection software to analyze any writing assignments.**

Classroom Behavior: Dalton State is committed to respect via the Roadrunner Respect pledge. To learn more, please visit http://daltoncampuslife.com/roadrunner-respect/.

“I pledge to show my fellow Roadrunner students, faculty, staff, and administration respect by treating others the way they want to be treated and by thinking about others first before making decisions that might affect them.

**OFFICIALLY APPROVED DSC GROUPS AND ACTIVITIES: (Effective Fall 2013)**

When students are engaged in officially approved Dalton State groups or activities that require them to participate in events off campus during school days, they shall be treated similarly to any faculty or staff member acting in that same capacity. Thus, just as faculty and staff have excused absences from their regular work schedules, students shall be excused from class without penalty if they are off campus representing Dalton State College in an approved, official capacity during their regular class time. Examples include presenting a paper or otherwise participating in a conference, attending a University System student affairs event, participating in intercollegiate competition (athletic or academic), participating in an approved field trip, etc. Just as faculty and staff members are required to submit Request to Travel forms for approval, in order to be excused, the student needs to provide the following information to the instructor prior to the date when he/she will be absent from class: notification of the event (in the case of athletics, students should provide each instructor a schedule of away events at the beginning of the semester or as soon as possible after the schedule is available); estimated time of departure from and return to campus (for example, if a student has an away game in the evening and will not be leaving campus until 3:00, he/she will not be excused from classes prior to that time on that day; similarly if the event is in the morning and the student will be returning to campus during the day, he/she is expected to attend any class scheduled after the return trip); and contact information for the person or organization sponsoring/authorizing the student’s participation in the event.

The student shall be allowed to make up any work missed during the time he/she is off campus representing DSC in an official capacity. He/she shall discuss what will be missed with the instructor and make arrangements to make up any assignments, tests, presentations, etc. that were scheduled on that date.

**Inclement Weather/ other emergencies**

See the Dalton State College Webpage/GAView for Announcements about closings or listen to local radio or television stations for information. As all course content is posted online, you will be responsible for the scheduled material. We will review when the campus reopens.

**Access Statement for Students with Disabilities:**

Students with disabilities or special needs are encouraged to contact the Disability Access office. In order to make an appointment or to obtain information on the process for qualifying for accommodations, the student should visit the Disability Access Library Guide at [http://www.libguides.daltonstate.edu/Disability](http://www.libguides.daltonstate.edu/Disability) or contact the Disability Access office.

Contact information:
Andrea Roberson, Associate Director of Disability Access and Student Support Services
Pope Student Center, upper level
706/272-2524
aro@daltonstate.edu
Workforce Development Statement
Questions regarding students receiving financial assistance through the Workforce Innovations Opportunity Act should be directed to 706-295-6840.

Sex Discrimination, Harassment, & Assault
Sexual harassment is unwelcome, gender-based verbal or physical conduct that is sufficiently severe, persistent or pervasive that it has the effect of interfering with, denying or limiting someone’s ability to participate in or benefit from the college’s educational program and/or activities, and is based on power differential (quid pro quo), the creation of a hostile environment, or retaliation. Sexual misconduct is a form of sexual harassment prohibited by Title IX. Sexual misconduct refers to “physical sexual acts perpetrated against a person’s will or where a person is incapable of giving consent due to the victim’s use of drugs or alcohol. An individual also may be unable to give consent due to an intellectual or other disability.” Sexual misconduct includes dating violence, domestic violence, rape, sexual assault, sexual battery, stalking, and sexual coercion.

Reporting Options
Call 911 if you are in an emergency situation

Dalton State Public Safety (this report is not confidential)
Tech Building- Upper Level - 706-272-4461
Online Sexual Assault Report -
https://dynamicforms.ngwebsolutions.com/ShowForm.aspx?RequestedDynamicFormTemplate=3fe5724c-a8bd-4a31-9c25-1a3d35110a51

If you would like to report to Dalton State Administration: (this report is not confidential)

Report Title IX complaint online - http://daltonstate.edu/campus_life/student-conduct-about.cms
Report Student-on-Student Title IX complaint in person:
Brittnie Lee, Office of Student Life
Coordinator for Student Responsibility & Service/ Deputy Title IX Coordinator
Pope 113
balee@daltonstate.edu, 706-272-2999
Report Title IX complaint involving Faculty or Staff in person:
Faith Miller, Human Resources
Director of Human Resource/ Title IX Coordinator
Memorial 122
fmiller@daltonstate.edu 706-272-2034

If you would like to talk with someone confidentially:
Dalton State Counseling & Career Services, Academic Resources
Lower Pope
706-272-4429
counseling@daltonstate.edu
http://libguides.daltonstate.edu/Counseling
A Few Odds and Ends:

- Please silence/turn off cell phones in class. Texting is not allowed in lecture or lab because it is distracting to me and other students. No social networking, etc during class. If you use your technology during class for purposes unrelated to this class (such as, but not limited to, checking email, browsing Facebook, surfing the internet, watching YouTube, Tweeting, Yik Yak or doing work for other classes), your technology will be banned from class for the semester. If you continue misusing technology, then it will reflect poorly on your participation in class and may prevent your grade from being bumped up if you are borderline for a better grade at the end of the semester. (If you are expecting an emergency call/text, please let me know BEFORE class.)
- Please don’t leave class or lab early, unless you have notified me of your need to do so. Also, please do your best to arrive to class on time & I’ll do my best to begin and end the class on time.
- Questions and discussion in class and lab are encouraged – this is your class and I want you to participate! On the other hand, private conversations are distracting to others, so please refrain.

Tips for Succeeding in Biology

1) Keep up!! One of the challenging aspects of the course is volume of material to be covered. Do the end of chapter problems after class to test your understanding of concepts covered. If a question stumps you, talk with me right away. If you fall behind, it will be difficult to catch up.

2) Study Hints

   A) Think big picture. Don’t sit down to memorize facts as if the material is just a random list of items. Fit each detail into a larger framework. Concept maps are your friends, note cards are not. You will remember things much better if they are in the context of a bigger whole rather than isolated pieces.

   B) Before Class: Spend some time skimming the chapter to be covered; do not let my class be the first time you hear about the material. Don’t get bogged down in detail – just get the big picture, cover major points and become familiar with the terminology (the chapter summary at the end of the chapter will be helpful here). Carefully review notes from the previous lecture. What is unclear? What don’t you understand? Ask a classmate for help, check the relevant section in the book, or ask me before/after class. Many concepts stump multiple students, so your question will help other students! Take care of problems as they arise or they may pile up and ambush you the night before an exam.

   C) In Class: Be awake and aware! Many students write frantically everything I say during class thinking they will “learn it later.” If your attention wanes– we can move –get up and do some jumping jacks next to your seat.

   D) Exams: My questions are designed to test Blooms levels of learning. The most elemental kind of learning is remembering. In science, memory is important, not as an end in itself, but primarily in the sense that knowing vocabulary is important for learning a foreign language. Science is its own language. A second level of learning is understanding. Do you really understand the material and can you take information in one form and explain it in another form. Test your comprehension by trying to explain concepts to another person. A third level of learning is applying. Can you solve problems using required skills or knowledge? Keep these levels of learning in mind as you study.

   E) General advice on multiple choice questions: 1) Read the problem, read all answers. 2) The correct answer is both true and relevant. 3) Don’t make mechanical mistakes. Check to see that if you want answer A, answer A is what you marked. 4) Don’t read more into the question than what is there. Some questions are easy, some are harder; you’ll have to decide which is which.
### Tentative Course Schedule Spring 2017: (Subject to change.)

Monday & Wednesday, 9:25 - 10:40 a.m. in Peeples Hall 111

<table>
<thead>
<tr>
<th>Date</th>
<th>Topics</th>
<th>Readings</th>
<th>Exams</th>
<th>Lab #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan 9, 11</td>
<td>Introduction to Genetics</td>
<td>Chapter 1</td>
<td></td>
<td></td>
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<tr>
<td>Jan 16, 18</td>
<td><strong>No class Monday MLK; Mitosis and Meiosis</strong></td>
<td>Chapter 2</td>
<td>1 Mitosis &amp; Meiosis</td>
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<tr>
<td>Jan 23, 25</td>
<td>Mitosis and Meiosis; Mendelian Inheritance</td>
<td>Chapter 2</td>
<td>2 Mendelian inheritance</td>
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<tr>
<td>Jan 30, Feb 1</td>
<td><strong>EXAM 1:</strong> Extensions to Mendelian Genetics</td>
<td>Chapter 4</td>
<td><strong>Exam 1, Jan 30</strong></td>
<td>3 Human Traits</td>
</tr>
<tr>
<td>Feb 6, 8</td>
<td>Extensions to Mendelian; Chromosome Mapping</td>
<td>Chapter 4</td>
<td>4 Linkage mapping</td>
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<tr>
<td>Feb 13, 15</td>
<td>Chromosome Mapping; DNA Structure and Analysis</td>
<td>Chapter 5</td>
<td>5 Sordaria mapping</td>
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<tr>
<td>Feb 20, 22</td>
<td><strong>Puzzle pieces:</strong> DNA Structure; DNA Organization -Chromosomes</td>
<td>Chapter 10</td>
<td>5 Sordaria mapping</td>
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<tr>
<td>Feb 27, Mar 1</td>
<td><strong>EXAM 2:</strong> DNA replication</td>
<td>Chapter 11</td>
<td><strong>Exam 2, Feb 27</strong></td>
<td>6 Chromosome DNA</td>
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<tr>
<td>Mar 6, 8</td>
<td>DNA replication; Genetic Code and Transcription</td>
<td>Chapter 11</td>
<td>7 Plasmid DNA</td>
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<tr>
<td>**Mar 13, 15</td>
<td><strong>SPRING BREAK—no class</strong></td>
<td>Chapter 13</td>
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<tr>
<td>**Mar 20, 22</td>
<td>Genetic Code and Transcription; Translation and Proteins</td>
<td>Chapter 13</td>
<td>7 Plasmid DNA</td>
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<tr>
<td>Mar 27, 29</td>
<td>Translation and Proteins</td>
<td>Chapter 14</td>
<td>8 SNP</td>
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<tr>
<td>April 3, 5</td>
<td><strong>EXAM 3:</strong> Gene regulation in Prokaryotes</td>
<td>Chapter 16</td>
<td><strong>Exam 3, Apr 3</strong></td>
<td>8 SNP</td>
</tr>
<tr>
<td>April 10, 12</td>
<td>Gene regulation in Prokaryotes; and Eukaryotes</td>
<td>Chapter 16</td>
<td>9 Bioinformatics</td>
<td></td>
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<tr>
<td>April 17, 19</td>
<td>Gene regulation in Eukaryotes; Pop and Evolutionary Genetics</td>
<td>Chapter 17</td>
<td>Lab Final</td>
<td></td>
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<tr>
<td>April 24, 26</td>
<td>Pop and Evolutionary Genetics; EXAM 4</td>
<td>Chapter 25</td>
<td><strong>Exam 4, April 26</strong></td>
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<tr>
<td>May 1</td>
<td>Review</td>
<td></td>
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<tr>
<td><strong>May 3</strong></td>
<td><strong>Final Exam (comprehensive)</strong></td>
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<td>Final Exam, May 3 8-10am</td>
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** Last date to withdraw with W: March 24 **
Lab Schedule Spring 2017 (tentative)

Wednesday, 1:40-4:30 p.m. in Peeples Hall 318

<table>
<thead>
<tr>
<th>Dates</th>
<th>Topic</th>
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<tbody>
<tr>
<td>January 18</td>
<td>Lab 1 Mitosis &amp; Meiosis</td>
</tr>
<tr>
<td>January 25</td>
<td>Lab 2 Mendelian inheritance</td>
</tr>
<tr>
<td>February 1</td>
<td>Lab 3 Human traits and pedigrees</td>
</tr>
<tr>
<td>February 8</td>
<td>Lab 4 Linkage mapping</td>
</tr>
<tr>
<td>February 15</td>
<td>Lab 5 Sordaria mapping week 1</td>
</tr>
<tr>
<td>February 22</td>
<td>Lab 5 Sordaria mapping week 2</td>
</tr>
<tr>
<td>March 1</td>
<td>Lab 6 Isolation of chromosomal DNA</td>
</tr>
<tr>
<td>March 8</td>
<td>Lab 7 Isolation of plasmid DNA week 1</td>
</tr>
<tr>
<td>March 13</td>
<td><strong>NO Lab Spring Break</strong></td>
</tr>
<tr>
<td>March 22</td>
<td>Lab 7 Isolation of plasmid DNA week 2</td>
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<tr>
<td>March 29</td>
<td>Lab 8 SNP detection and analysis week 1</td>
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<tr>
<td>April 5</td>
<td>Lab 8 SNP detection and analysis week 2</td>
</tr>
<tr>
<td>April 12</td>
<td>Lab 9 Bioinformatics</td>
</tr>
<tr>
<td>April 19</td>
<td>Lab Final</td>
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</tbody>
</table>

I have read, understand, and agree to follow the above policies for Biol 3400K Spring 2017.
It is your responsibility to maintain a copy of this syllabus.

Signed: ___________________________  Print name: ___________________________

Date: ______________  Phone: ___________________________

email: ___________________________