

**BIOL3315: Genetics**  
**Summer 2016**

**Instructor:** Dr. Matthew K. Fujita

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**Teaching Assistants:** Kyle O'Connell (until 7/22); Drew Schield (from 7/22 to 8/15)

**Office Hours:** Dr. Fujita: Mon 12 noon - 2:00 PM, ERB 470  
Teaching Assistants: Tuesdays and Thursdays 1:00-2:30 PM, ERB470

**Section Information:** BIOL3315-001

**Time and Place of Class Meetings:** SH103 Monday-Thursday 8:00 AM-10:00 AM

**Description of Course Content:** This course will cover the fundamentals of the structure and function of DNA, RNA, and the genome. Topics include DNA and RNA structure, gene structure and regulation, transcription, translation, recombination, genomics, mutation, and genotype-to-phenotype processes.

**Student Learning Outcomes:** At the end of the course, students should have a solid understanding of the foundations of genetics, including the topics mentioned above.

**Required Textbooks and Other Course Materials:** Genetic Analysis: An Integrated Approach by Mark F. Sanders and John L. Bowman. Benjamin-Cummings.; 2nd edition (2014; ISBN 0321732502). The book is available for rent at several locations (including an ebook subscription from the Pearson website) or purchase.

**Descriptions of major assignments and examinations:** This course will consist of four exams (three midterms and a cumulative final) and 5 online quizzes, all of which will be multiple choice.

**Attendance:** Attendance is strongly recommended.

**Prerequisites:** BIOL 1441.

**Grading:** You will be graded based on four components, each of which has equal weight. Three components are your three best exams, and the fourth component is your overall quiz score.

Grading scale (this can change based on the distribution of scores)

A = 90-100

B = 80-89

C = 70-79

D = 60-69

F < 60

**Exams:** For all exams, you will need Scantron Form 4521 (blue form that provides five possible responses). **In order for your exam to be graded, you need to include your name (first and last) and your Student ID number in the sections provided.** You must fill in your answers with a pencil or your exam will not be graded. If you fail to follow these instructions, you will receive a 0 on the exam with no possibility to re-take it.

**Quizzes:** Each quiz will be 10 multiple-choice questions and will be available for a few days on Blackboard. While you are free to use your notes and work together, every person must submit a quiz in order to get credit. Altogether, the five quizzes will be worth 25% of your grade. The

multiple-choice questions will resemble the type and difficulty of questions on the midterms. Because we give you several days to complete a quiz, we will not drop any quizzes.

**Expectations for Out-of-Class Study:** Beyond the time required to attend each class meeting, students enrolled in this course should expect to spend at least an additional 9 hours per week of their own time in course-related activities, including reading required materials and preparing for exams.

**Make-up Exams:** There will be **no make-up exams**. Instead, what we will do is allow everyone to remove their lowest exam score, including any missed exams. **Only one exam will be removed.** If you anticipate missing more than one exam, or if you miss more than one exam, you should consider dropping the course.

**Note that only under extraordinary circumstances do we give Incompletes or withdrawals, and appropriate documentation is required by the College of Science.** Note that these documentations are strict; examples of appropriate documentation include: (1) medical documentation on hospital letterhead that provides a timeline of a serious health-related issue or emotional difficulties, (2) evidence of the death of a close family member substantiated by a death certificate of newspaper obituary stating the date of the death, and (3) travel documentation/receipts related to an emergency trip.

Documentation that **will not be accepted** include: (1) evidence of an event that occurred prior to the last drop date, (2) photocopies of documentation, (3) a doctor's note that does not include a timeline of the medical issue, (4) a note from a family member explaining the extraordinary situation, (5) a written summary of a semester's worth of events that led to poor performance in a class, (6) requests to drop only one course for the semester but not the other courses, (7) requests to drop a course after the student has completed it.

*Please note that we are unable to reschedule final exams. If you are unable to make the final exam time we suggest you drop the class and enroll in a different section.*

**Grade Grievances:** Any appeal of a grade in this course must follow the procedures and deadlines for grade-related grievances as published in the current undergraduate catalog.

**Drop Policy:** Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. Students will not be automatically dropped for non-attendance. Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (<http://www.uta.edu/aao/fao/>).

**Americans with Disabilities Act:** The University of Texas at Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including the Americans with Disabilities Act (ADA). All instructors at UT Arlington are required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of that disability. Any student requiring an accommodation for this course must provide the instructor with official documentation in the form of a letter certified by the staff in the Office for Students with Disabilities, University Hall 102. Only those students who have officially documented a need for an accommodation will have their request honored. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at [www.uta.edu/disability](http://www.uta.edu/disability) or by calling the Office for Students with Disabilities at (817) 272-3364.

**Academic Integrity:** Students enrolled in this course are expected to adhere to the UT Arlington Honor Code:

I pledge, on my honor, to uphold UT Arlington's tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.

I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.

UT Arlington faculty members may employ the Honor Code as they see fit in their courses, including (but not limited to) having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System Regents' Rule 50101, §2.2, suspected violations of university's standards for academic integrity (including the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student's suspension or expulsion from the University.

**Student Support Services:** UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to [resources@uta.edu](mailto:resources@uta.edu), or view the information at [www.uta.edu/resources](http://www.uta.edu/resources).

**Electronic Communication:** UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at <http://www.uta.edu/oit/cs/email/mavmail.php>.

**Student Feedback Survey:** At the end of each term, students enrolled in classes categorized as "lecture," "seminar," or "laboratory" shall be directed to complete an online Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student's feedback enters the SFS database anonymously and is aggregated with that of other students enrolled in the course. UT Arlington's effort to solicit, gather, tabulate, and publish student feedback is required by state law; students are strongly urged to participate. For more information, visit <http://www.uta.edu/sfs>.

**Final Review Week:** A period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week unless specified in the class syllabus. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. During this week, classes are held as scheduled. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.

**Emergency Exit Procedures:** Should we experience an emergency event that requires us to vacate the building, students should exit the room and move toward the nearest exit, which is located west and east of the LS118 entrances (left as you exit the room). When exiting the building during an emergency, one should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist handicapped individuals.

## Course Schedule - Summer 2016

| Lecture | Date      | Day       | Topic   | Reading    |
|---------|-----------|-----------|---|------------|
| 1       | 12 Jul 16 | Tuesday   | Introduction, Transmission Genetics                   | Ch. 1      |
| 2       | 13 Jul 16 | Wednesday | Transmission Genetics                                 | Ch. 2      |
| 3       | 14 Jul 16 | Thursday  | Cell Division and Chromosome Heredity                 | Ch. 3      |
| 4       | 18 Jul 16 | Monday    | Gene Interaction                                      | Ch. 4      |
| 5       | 19 Jul 16 | Tuesday   | Genetic Linkage and Mapping in Eukaryotes             | Ch. 5      |
| 6       | 20 Jul 16 | Wednesday | Genetic Linkage and Mapping in Bacteria and Viruses   | Ch. 6      |
|         | 21 Jul 16 | Thursday  | Midterm 1 (Lectures 1-5)                              |            |
| 7       | 25 Jul 16 | Monday    | DNA Structure and Replication; Chromosome Structure   | Ch. 7, 11  |
| 8       | 26 Jul 16 | Tuesday   | Transcription and RNA Processing                      | Ch. 8      |
| 9       | 27 Jul 16 | Wednesday | Translation   | Ch. 9      |
| 10      | 28 Jul 16 | Thursday  | Chromosomal Aberrations and Transposition             | Ch. 13     |
|         | 1 Aug 16  | Monday    | Midterm 2 (Lectures 6-9)                              |            |
| 11      | 2 Aug 16  | Tuesday   | Mutation  | Ch. 12     |
| 12      | 3 Aug 16  | Wednesday | Regulation of Gene Expression in Bacteria and Viruses | Ch. 14     |
| 13      | 4 Aug 16  | Thursday  | Regulation of Gene Expression in Eukaryotes           | Ch. 15     |
| 14      | 8 Aug 16  | Monday    | Recombinant DNA Technology                            | Ch. 16, 17 |
|         | 9 Aug 16  | Tuesday   | Midterm 3 (Lecture 10-13)                             |            |
| 15      | 10 Aug 16 | Wednesday | Genomics  | Ch. 18     |
| 16      | 11 Aug 16 | Thursday  | Review  |            |
|         | 15 Aug 16 | Monday    | Final Exam (Comprehensive) (8:00-10:00 AM)            |            |

**Course Schedule:** As the instructor for this course, I reserve the right to adjust this schedule in any way that serves the educational needs of the students enrolled in this course. –Dr. Matthew K. Fujita

**Note that this course is fast-paced. I highly recommend you study continuously and not wait until the last minute before exams. I suggest that you read and do the end-of-chapter problems, and master the material of the respective chapters on the day of the lecture.**