

BIOL 3401.OU1/BIOL3401.2U1: GENETICS CLASS and SECONDARY LECTURE
The University of Texas at Dallas
SUMMER 2025 (In-person classes and workshops)
(June 2, 2025 – August 13, 2025)

TEXT: Genetics: Analysis and Principles by Brooker, 8th edition (ISBN – 978-1-265-41705-5)

BIOL 3401.OU1 - LECTURES MWF 1:00 – 2:15 PM@ SLC 1.102

Instructor - Dr. Uma Srikanth

Email: ukrish@utdallas.edu

BIOL 3401.2U1 – LECTURES MONDAYS at 8:30 AM -9:45 AM (conducted by graduate teaching assistants)

Office hours: Room # FN 3.108 Mondays 10:30 AM -12 noon or by appointment. Office hours will begin on June 9th.

All communications with the instructor must be sent to her primary email address: ukrish@utdallas.edu

Course Modality and Expectations

Instructional Mode	In-person lectures and workshops. All course material will be posted on eLearning – lecture pdfs’, assignments, homework, announcements etc.
Recommendations and Expectations	<u>It is highly recommended that students attend lectures. Student attendance is mandatory on</u> certain days. Please be sure to look for announcements during lectures or on eLearning. See <u>Mandatory Attendance.</u>
Homework/Assignments	<u>Homework/assignments will be posted on eLearning. They will become available on Sundays at 12AM and are due the following Saturday @11:59 PM.</u>
EXAMS	<u>EXAMS will be at the Testing Center. All grades will be posted on eLearning.</u>
Textbook	<u>Genetics: Analysis and Principles by Brooker, 8E with CONNECT ACCESS</u>

CONNECT ACCESS details:

Brooker, Genetics: Analysis & Principles 8e

Connect Access Card ISBN: 9781265417055 // Check the bookstore or the Connect website.

Loose leaf and Connect ISBN: 9781265417253 (\$105)// Check the bookstore or the connect website.

OLA (online access) ISBN: 9781265416706

Course description:

The phenomenon of heredity, its cytological and molecular basis; gene expression and transfer of genetic information, with major focus on bacterial and model eukaryotic systems; genetic recombination and chromosome mapping; mutations and mutagenesis; genetic interactions; application of recombinant DNA techniques to genetic analysis.

Prerequisites: BIOL 2311 and (BIOL 2281 or CHEM 2401 or equivalent) and (CHEM 2323 or equivalent).

Corequisite: BIOL 3401.2U1(secondary lecture)

Learning outcomes: Upon completing this course, students should know and understand:

1. Principles and patterns of inheritance.
2. Structure and functions of chromosomes
3. Molecular aspects of replication, transcription, and translation.
4. Gene expression and gene regulation in bacteria, and eukaryotes
5. Understand experimental design and analysis of landmark experiments.
6. Modern genome technologies

Technical Requirements

In addition to a confident level of computer and Internet literacy, certain minimum technical requirements must be met to enable a successful learning experience. Please review the important technical requirements on the [Getting Started with eLearning](#) webpage.

Course Access and Navigation

This course can be accessed using your UT Dallas NetID account on the [eLearning](#) website.

Please see the course access and navigation section of the [Getting Started with eLearning](#) webpage for more information.

To become familiar with the eLearning tool, please see the [Student eLearning Tutorials](#) webpage.

UT Dallas provides eLearning technical support 24 hours a day, 7 days a week. The [eLearning Support Center](#) includes a toll-free telephone number for immediate assistance (1-866-588-3192), email request service, and an online chat service.

Communication

This course utilizes online tools for interaction and communication. Some external communication tools such as regular email and a web conferencing tool may also be used during the semester. For more details, please visit the [Student eLearning Tutorials](#) webpage for video demonstrations on eLearning tools.

Server Unavailability or Other Technical Difficulties

The University is committed to providing a reliable learning management system to all users. However, in the event of any unexpected server outage or any unusual technical difficulty which prevents students from completing a time sensitive assessment activity, the instructor will provide an appropriate accommodation based on the situation. Students should immediately report any problems to the instructor and also contact the online [eLearning Help Desk](#). The instructor and the eLearning Help Desk will work with the student to resolve any issues at the earliest possible time.

Biology 3401.2U1 – Secondary Lectures

Workshops will be conducted by teaching assistants, in-person. The instructor may be present in these sessions as well.

BIOL 3401.2U1	Mondays 8:30 – 9:45 AM	Graduate Teaching Assistants
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Workshops will have a delayed start – they will begin on June 9th.

Important:

All students enrolled in BIOL 3401.0U1 must also enroll in secondary lecture – BIOL 3401-2U1. Do not miss the workshops as these are breakout sessions, aimed at helping you understand difficult concepts. The workshops will feature application problems based on concepts taught in lecture. These will enhance your problem-solving and critical thinking skills. The topics covered in secondary lectures are decided by Dr. Srikanth in meetings that she has with her teaching assistants every week.

GRADUATE TEACHING ASSISTANTS – Olufemi Afolami, Ibrahim Salaudeen, Sharon Kwende, Dibyo Maiti, Subhajit Maity, Umar Patel, Hamza Lalami, and Jessica Gomez

UNDERGRADUATE TEACHING ASSISTANT – LANA SLIM

Please be advised that the schedule of lectures posted is a tentative outline. It is subject to change at the discretion of the instructor.

SCHEDULE OF LECTURES

Bio 3401, Summer 2025

Dates	Session	Topics	Chapters
Mon, Jun 2	1	Introduction and Overview of Genetics	Chapter 1
Wed, Jun 4	2	Mendelian Genetics	Chapter 2
Fri, Jun 6	3 M	Extensions of Mendelian Inheritance	Chapter 4
Mon, Jun 9	4	Extensions of Mendelian Inheritance	Chapter 4

Wed, Jun 11	5 M	Non-Mendelian Inheritance	Chapter 5
Fri, Jun 13	6	Non-Mendelian Inheritance	Chapter 5
Mon, Jun 16	7 M	Linkage and Mapping in Eukaryotes	Chapter 6 (6.1, 6.2, 6.3)
Wed, Jun 18	8 M	Linkage and Mapping in Eukaryotes	Chapter 6 (6.5)
JUNETEENTH HOLIDAY JUNE 19			
Fri, Jun 20	9 T	Genetic transfer and Mapping in Bacteria	Chapter 7
Mon, Jun 23	10	EXAM 1 (Concepts covered in session #s'1-9)	
Wed, Jun 25	11 M	Molecular Structure of DNA and RNA	Chapter 9
Fri, Jun 27	12	DNA Replication	Chapter 11
Mon, Jun 30	13 M	DNA Replication	Chapter 11
Wed, Jul 2	14	Molecular Structure of Chromosomes and Transposable elements	Chapter 10
INDEPENDENCE DAY - HOLIDAY			
Mon, Jul 7	15 M	Transcription in Bacteria	Chapter 12
Wed, Jul 9	16	Transcription in Bacteria	Chapter 12
Fri, Jul 11	17	Transcription in Eukaryotes	Chapter 12
Mon, Jul 14	18 M	RNA modification	Chapter 12
Wed, Jul 16	19 T	Translation of mRNA	Chapter 13
Fri, Jul 18	20	EXAM II (Concepts covered in Session #s' 11-19)	
Mon, Jul 21	21 M	Translation of mRNA	Chapter 13
Wed, Jul 23	22	Gene Regulation in Bacteria	Chapter 14
Fri, Jul 25	23 M	Gene Regulation in Eukaryotes I	Chapter 15
Mon, Jul 28	24	Gene Regulation in Eukaryotes II	Chapter 16
Wed, Jul 30	25	Non-coding RNAs'	Chapter 17
Fri, Aug 1	26	Genetics of Viruses	Chapter 18
Mon, Aug 4	27 M	Mutations and DNA repair	Chapter 19
Wed, Aug 6	28	DNA repair and recombination	Chapter 19

Fri, Aug 8	29 M	Medical Genetics	Chapter 24
Mon, Aug 11	30 T	Biotechnology/Molecular Technology/Genomic analysis	Parts of 20, 21, and 22
Wed, Aug 13		EXAM III (Concepts covered in Session #s' 21-30)	

WORKSHOP SESSIONS:

<u>MANDATORY WORKSHOPS (MARKED WITH A M in RED)</u>	<u>DATE</u>	<u>TOPICS</u>	<u>Graduate Teaching Assistants</u>
M	June 9	Topics covered in lectures on June 2 -6	TBA
	June 16	Extensions of Mendel and Non-Mendelian Inheritance	TBA
M	June 23	Linkage and Review	TBA
	June 30	DNA Replication	
M	Jul 7	Molecular Structure of Chromosomes and Transposable elements	TBA
M	Jul 14	Transcription and Review	TBA
	Jul 21	No workshop	
M	Jul 28	Translation and Gene Regulation	TBA
	Aug 4	Mutations, non-coding RNAs, Eukaryotic gene regulation	TBA
M	Aug 11	Medical genetics and Review	TBA

GRADING POLICY:

There will be three exams given in BIOL 3401. The exam questions will be a combination of multiple-choice plus brief short-answer questions. Each of the three exams will cover all the material presented in class since the previous exam (lectures, handouts, and assigned reading), for a total of **60%**

EXAMS:

1. There are three exams in this course, and they are given in the lecture hall. Please see dates on the schedule of lectures table – highlighted in yellow.
2. Note that you must take all THREE EXAMS. No exam will be dropped from the final grade calculation. No exam is cumulative.
3. All EXAMS will cover chapters taught in prior lectures.
4. EXAMS may be a mixture of multiple choice, T/F, Fill-in the blanks, mix and match, and a few free response questions.
5. The instructor will post an announcement about dedicated office hours for discussion of exams.
6. Please see below for MAKE-UP Exam rules.

7. NO EXAM GRADE WILL BE DROPPED FROM THE FINAL GRADE CALCULATION.

Homework (posted on CONNECT):

These will account for 20% of your final grade. These are available through the online tool **CONNECT**. Connect registration and details will be discussed on the first day of class.

Links for these assignments and Homework will be available on the eLearning course page under the assignments tab. Use the links here to finish these assignments and homework.

They will become available on Sundays at 12AM. Please use the links provided on eLearning to complete your assessments and homework. These assignments and homework are due the following Saturday @11:59 PM. IT IS YOUR RESPONSIBILITY TO CHECK FOR ASSIGNMENTS and HOMEWORK EVERY WEEK.

Quizzes (workshops)

These are administered on the mandatory days during workshops. These will be graded for correctness. These are 10 points each.

GRADING RUBRIC FOR THE COURSE:

	<i>Total #</i>	<i>Points for each</i>	<i>Total points</i>	<i>Dropped</i>	<i>Maximum possible points</i>	<i>% of final grade</i>
EXAMS	3	100 or >	300 or >	0	300 or >	60% (weighted)
Homework assignments	20 or more	15	300	1	280	20% (weighted)
Connect Registration	1	-		-	-	1 extra point added to final total
Quizzes (workshops)	6	10	60	1	50	5% (weighted)
Mandatory attendance in workshops	6	10	60	1	50	5% (weighted)
Mandatory attendance in lectures	12	10	120	2	100	5% (weighted)
Team activity	3	10	30	0	30	4% (weighted)
					Total	100% (weighted)

All course material and grades will be posted on eLearning.

MANDATORY ATTENDANCE DURING WORKSHOPS – see WORKSHOP SCHEDULE table marked with a M

Attendance will be recorded, and points are given. These points will be used towards the MANDATORY attendance in workshops (see grading rubric).

MANDATORY ATTENDANCE DURING LECTURES – see LECTURE SCHEDULE table marked with a M:
Attendance will be recorded, and points are given. These points will be used towards the MANDATORY attendance in lectures (see grading rubric).

TEAM ACTIVITY – will be marked with a T on the schedule of Lectures table.

GRADING OF EXAMS:

Scoring short answer questions on the exams is done by the graduate Teaching Assistants, but the Instructor determines in advance what key points must be included in each answer to get full credit.

If you have questions about the grading or your performance in an exam, please see the instructor as soon as possible. If letter grades are provided after an exam, these should be treated only as a reflection of your relative performance. **The final course grade will be based not on these individual letter grades, but on the total of the numeric scores (please see grading rubric).**

Make- up EXAMS

Exam availability is at the discretion of the instructor. Please contact the instructor ahead of schedule to talk about alternate times of availability and the instructor will decide based on individual requests.

EXAM OFFICE HOURS (during dedicated (regular) office hours):

There is no viewing of questions on the exam. For the FRQ portion of the exam, you may ask the instructor about individual questions during dedicated office hours only. The instructor will spend extra time going over your answers and clarifying any concerns you may have about the grading or allocation of points.

Class Participation

Students who fail to participate in class regularly are inviting scholastic difficulty. A portion of the grade for this course is directly tied to your participation in this class. It also includes engaging in group or other activities during class that solicit your feedback on homework assignments, readings, or materials covered in the lectures (and/or labs). Class participation may be documented by faculty. Successful participation is defined as consistently adhering to university requirements, as presented in this syllabus. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

Class Recordings

Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Unless the Access Ability resource Center (ARC) has approved the student to record the instruction, students are expressly prohibited from recording any part of this course. Recordings may not be published, reproduced, or shared with those not in the class, or uploaded to other online environments except

to implement an approved ARC accommodation. Failure to comply with these University requirements is a violation of the [Student Code of Conduct](#).

The instructor may record meetings of this course. These recordings may be made available to students on a need only basis. If the instructor or a UTD school/department/office plans any other uses for the recordings, consent of the students identifiable in the recordings is required prior to such use unless an exception is allowed by law. Failure to comply with these University requirements is a violation of the [Student Code of Conduct](#).

Class Materials

The instructor will provide class materials (PowerPoint lectures, readings etc.) that will be made available to all students registered for this class as they are intended to supplement the classroom experience. These materials may be downloaded during the course; however, these materials are for registered students' use only. Classroom materials may not be reproduced or shared with those not in class or uploaded to other online environments except to implement an approved Access Ability resource Center (ARC) accommodation. Failure to comply with these University requirements is a violation of the [Student Code of Conduct](#).

Comet Creed

This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:

“As a Comet, I pledge honesty, integrity, and service in all that I do.”

Academic Support Resources

The information contained in the following link lists the University’s academic support resources for all students.

Please go to [Academic Support Resources](#) webpage for these policies.

Here are the links to UT Dallas policy on student conduct and syllabus:

<https://go.utdallas.edu/syllabus-policies>

<https://www.utdallas.edu/conduct/>

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.

STUDENT RESOURCES

WELCOME BACK!

Comet Cupboard

Provides food and personal care items to all UTD student. Visit website for hours, or contact: cupboard@utdallas.edu

Student Counseling Center

Provides mental health counseling (anything from testing anxiety to self-care) and psychiatric services to all UTD students. All students eligible for 6 free sessions. Visit website for hours, or contact: counselingcenter@utdallas.edu
Or contact UTD crisis hotline for all non-emergency situations: 972-883-8255 (972-UTD-TALK)

OIT

Provides laptops and AV equipment to all UTD centers. Visit website for hours, or contact: assist@utdallas.edu