

BIOL 3401.001/BIOL3401.201
GENETICS CLASS and SECONDARY LECTURE
The University of Texas at Dallas
Spring 2025 (Jan 21, 2025 – May 9, 2025)

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

BIOL 3401.001 – LECTURE: Mon & Wed 1PM – 2:15PM @ SCI 1.220

BIOL 3401.201 – SECONDARY LECTURE: Tue 5:30PM – 6:20AM @ECSW 1.315

INSTRUCTORS

	Office	Email	Office Hours
Dr. Jing Pan	FN 3.110	jing.pan1@utdallas.edu	Wednesday 2:30 – 3:30pm
Dr. Uma Srikanth	FN 3.108	ukrish@utdallas.edu	Tuesdays 3 – 5 PM

* Please use your UTD email address for communications with the instructors.

COURSE MODALITY AND EXPECTATIONS

Instructional Mode	In-person for both BIOL3401.001 and BIOL3401.201. All course material will be posted on eLearning, including lecture PDFs, assignments, homework, announcements, etc.
Recommendations and Expectations	It is highly recommended that students attend all in-person lectures and secondary lectures Student attendance at lectures is mandatory on certain days. Dates of these lectures will be announced in lectures or in eLearning. Please find details in the section “ MANDATORY ATTENDANCE DURING BIOL3401.001 LECTURES ”.
Homework/Assignments	Homework/assignments will be posted on eLearning. They will become available on Sundays at 12AM and are due the following Saturday @11:59 PM.
Exams	Exams will be at the Testing Center. All grades will be posted on eLearning.

REQUIRED ACCESS AND e-BOOK

Here's the ISBN info:

Brooker, Genetics: Analysis & Principles 8e

Connect Access Card ISBN: 9781265417055 (discounted price of \$78) // Check the bookstore or the Connect website.

Loose leaf and Connect ISBN: 9781265417253 (\$112)// Check the bookstore or the connect website.

OLA (online access) ISBN: 9781265416706 (\$78)

COURSE DESCRIPTION

BIOL 3401 Genetics (4 semester credit hours)

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 Introduction to Modern Biology

BIOL 2281 Introductory Biology Laboratory or **CHEM 2401** Introductory Quantitative Methods in Chemistry or equivalent

CHEM 2323 Introductory Organic Chemistry or equivalent

COREQUISITE

BIOL 3401.201 Secondary Lecture

LEARNING OUTCOMES

Upon completing this course, students will

1. Be able to diagram the different patterns of inheritance.
2. Be able to understand molecular aspects of replication, transcription, and translation.
3. Be able to understand different current genetic technologies.
4. Be able to explain concepts such as gene regulation in bacteria.
5. Be able to explain concepts such as gene regulation in eukaryotes.
6. Be able to understand experimental design and analysis in landmark experiments.

MANDATORY ATTENDANCE DURING BIOL 3401.001 LECTURES

Student attendance is mandatory on certain days. These dates will be announced during lectures or on eLearning. Attendance will be recorded, and points will be given.

Absences on mandatory attendance days - These are excused at the discretion of the instructor.

Absences will be considered if they are due to emergencies, health, etc. Please contact the instructor with appropriate paperwork.

LECTURE SCHEDULE BIOL 3401.001

Please be advised that the schedule of lectures in the table below is a tentative outline. It is subject to change at the discretion of the instructor. The changes will be posted on eLearning.

TENTATIVE SCHEDULE OF LECTURES - BIOL3401.001

Dates		Session	Topics	Chapters
			Dr. Pan's half	
Wed	Jan 22	1	Introduction	Chapter 1
Mon	Jan 27	2	Mendelian inheritance I	Chapter 3
Wed	Jan 29	3	Mendelian inheritance II	Chapter 3
Mon	Feb 3	4	Extension of Mendelian Genetics	Chapter 4
Wed	Feb 5	5	Linkage, recombination, genetic mapping I	Chapter 6
Mon	Feb 10	6	Linkage, recombination, genetic mapping II	Chapter 6
Wed	Feb 12	7	Exam review	
Mon Tue	Feb 17, Feb 18	8	EXAM 1 – Pan – Testing center	
Wed	Feb 19	9	Molecular mechanism of recombination	Chapter 19
Mon	Feb 24	10	Genetic variation	Chapter 22
Wed	Feb 26	11	Chromosomal rearrangements and changes in chromosome number	Chapter 8
Mon	Mar 3	12	Population genetics	Chapter 27
Wed	Mar 5	13	Population genetics	Chapter 27
Mon	Mar 10	14	Organelle inheritance	Chapter 5
Wed Thu Fri	Mar 12 Mar 13 Mar 14	15	EXAM 2 – Pan – Testing center	
Mon Wed	Mar 17 Mar 19		SPRING BREAK HOLIDAY	
			Dr. Srikanth's half	
Mon	Mar 24	16	DNA Discovery	Chapter 9
Wed	Mar 26	17	Molecular Structure of DNA and RNA	Chapter 9
Mon	Mar 31	18	DNA Replication - Bacteria	Chapter 11
Wed	Apr 2	19	DNA Replication - Eukaryotic	Chapter 11
Mon	Apr 7	20	Transcription in Bacteria	Chapter 12
Wed	Apr 9	21	Transcription in Bacteria and Eukaryotes	Chapter 12
Mon	Apr 14	22	Transcription in Eukaryotes (cont'd)	Chapter 12
Wed	Apr 16	23	EXAM 3 -Srikanth -Testing center (Lectures 16-22)	
Mon	Apr 21	24	Translation in Eukaryotes	Chapter 13

Wed	Apr 23	25	Translation comparison	Chapter 13
Mon	Apr 28	26	Gene Regulation in Bacteria	Chapter 14
Wed	Apr 30	27	Gene Regulation in Eukaryotes I: Transcriptional regulation	Chapter 15
Mon	May 5	28	Gene Regulation in Eukaryotes II: Epigenetics Mutations	Chapters 16 and parts of 19
	May 7	29	Mutations and Medical genetics	Parts of 19 and 24
	May 12- May 14		EXAM 4 Testing Center (Lectures 24-29)	

** The above schedule is subject to change at the discretion of the instructor.*

BIOL 3401-201 GENETICS SECONDARY LECTURE

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

BIOL 3401.201	Tuesdays 5:30 -6:20 PM ECSW 1.315	Undergraduate and Graduate Teaching Assistants
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- 1. These will begin the second week of the semester – Jan 28, 2025**
- 2. All students enrolled in BIOL3401.001 must also enroll in the Secondary Lecture BIOL3401.201. If you drop the course, please be sure to drop both Lecture and Secondary Lecture.**
- 3. Secondary Lecture will be conducted by graduate teaching assistants in-person. The instructor may be present in these sessions as well. The contact of graduate/undergraduate teaching assistants will be announced during secondary lecture.**
- 4. Please make your best effort to attend the secondary lectures - these are breakout sessions, aimed at helping you understand difficult concepts. The secondary lectures will feature application problems based on concepts taught in lectures the previous week. These will enhance your problem-solving and critical thinking skills. The topics covered in workshops will be decided by instructor meetings with teaching assistants every week.**

UNDERGRADUATE TEACHING ASSISTANT – Laura Hua

GRADUATE TEACHING ASSISTANTS – Olufemi Afolami, Prarthana Suresh, Hamza Lalami, and Dibyo Maiti

GRADING POLICY

	<i>Total #</i>	<i>Points for each</i>	<i>Dropped</i>	<i>Maximum possible points</i>	<i>% of final grade</i>
EXAMS	4	Varied	0	Varied	80% (weighted)
CONNECT REGISTRATION	1	1	-	1	1%
ASSESSMENTS/HOMEWORKS-CONNECT - Dr. Pan's section	8 or >	Varied	1	Varied	8% (weighted)
ASSESSMENTS/HOMEWORKS-CONNECT - Dr. Srikanth's section	10 or >	Varied	1	Varied	8% (weighted)
TEAM ACTIVITY and MANDATORY ATTENDANCE (lectures only)	Varied	Varied	-	Varied	3% (weighted)
			Total		100% (weighted)

** All grades will be posted on eLearning.*

TEAM ACTIVITY

Dates for team activity will be announced during lectures and posted on eLearning.

ASSIGNMENTS AND HOMEWORK/ASSESSMENTS

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 on Sundays at 12AM. These assignments and homework are due the following Saturday @11:59 PM.

IT IS YOUR RESPONSIBILITY TO CHECK FOR ASSIGNMENTS and HOMEWORK EVERY WEEK.

EXAMS

- The exams will be available at the testing center.*** Details about exam availability at the testing center will be posted on eLearning. You will sign up for your exam time slot at <https://ets.utdallas.edu/testing-center>
- No exam will be dropped*** from the final grade calculation. No exam is cumulative.
- Exams may be a mixture of multiple choice, T/F, fill-in the blanks, mix and match, and a few free response questions.*
- Each exam will cover all the material presented in class since the previous exam (lectures, handouts, and assigned reading).*

5. Once the exam is graded, the instructor will post an announcement about office hours for discussion of exams.
6. **Make up exams.** Make up exams are granted only under extenuating circumstances. Make up 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.

IMPORTANT POINTERS TO REMEMBER AND FOLLOW ABOUT ONLINE EXAMS

1. ***It is expected that you follow the code of conduct and ethical rules described in your undergraduate catalog when taking exams at the TESTING CENTER.***
2. ***You are not allowed to take pictures/screenshots of the exam and share it with your fellow students or others outside the class.***
3. ***Once you are done taking the exam, discussion of questions and/or answers to those questions on the exam, are thoroughly discouraged, until the entire class has taken the exam. Discussing the exam in any manner with anyone prior to the end of the exam taking window will be considered cheating. Such instances will be referred to the Office of Community Standards and Conduct.***

GRADING OF EXAMS

Scoring short answer questions on the exams is done by the graduate teaching assistants based on the standard answer key provided by the instructors.

If you have questions about the grading or your performance in an exam, please see the instructor during office hours.

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).

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 instructors 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.

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 AND 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 appropriate accommodation based on the situation. Students should immediately report any problems to the instructor and contact the online [eLearning Help Desk](#). The instructor and the eLearning Help Desk will work with the students to resolve any issues at the earliest possible time.

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

The instructor may record meetings for 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 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

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

Student conduct and syllabus

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

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

Comet Cupboard

Provides food and personal care items to all UTD students. 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 are 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

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