



BSC 419-01E

Gene Control

Fall 2025
Texas A&M University at Commerce
Tue, Thu 11:00 AM-12:15 PM
STC 122

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Office Location: NHS 331

Please e-mail me if you have a question. I will try to respond within 24 hours, except for weekends and holidays.

Office Hours: Thursdays 2:00-3:20 PM or by appointment.

I enjoy teaching and talking with you. If you have questions, drop by my office or join the Zoom session (link below) during office hours. If the time does not work for you, feel free to email me, and we can set up a time that does.

Office Hour Zoom link:

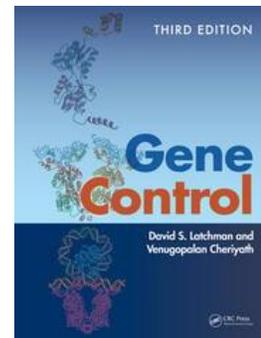
<https://tamuc.zoom.us/j/7032367457?pwd=RkFQZmtkcm90emNnUGNDL0E0Sig0UT09>

Meeting ID: 703 236 7457

Passcode: OH

COURSE INFORMATION

Textbook(s) Required: Gene Control. 2025. 3rd edition, Latchman and Cheriya ISBN-13: 9781032465463, or eBook. This book is available for purchase or rental at the TAMUC bookstore and can be bought or rented from various local and online retailers. Readings from the textbook will be announced and follow the course schedule's topic order. In order for you to get the most out of the lecture, it is important that you complete the assigned readings with each lecture since lectures will build on the reading assignment.



Course Description

BSc 419, Gene Control, is a course for junior or senior biology undergraduate students. This

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course will provide a rigorous knowledge in regulation of gene expression so that students will be ready for graduate-level courses. Although this course will introduce students to prokaryotic gene transcription and gene regulation, the emphasis will be on the molecular biology of gene control in eukaryotes. This course will familiarize the student with current technology and driving principles of the field of gene regulation. Prerequisites: BSC 303 and BSC 304 with a grade of C or higher.

Student Learning Outcomes

Upon completion of this course, you should be able to;

1. Differentiate the key differences between prokaryotic and eukaryotic gene regulation.
2. Understand various molecular mechanisms that control gene transcription and translation.
3. Learn how to critically read, interpret, and summarize the important findings of gene regulation research articles.

COURSE REQUIREMENTS

Minimal Technical Skills Needed

- Proficiency in using the D2L Brightspace Learning Management System in myLEOOnline
- Proficiency in using and access to Microsoft PowerPoint

Instructional Methods

This is a fully in-person course. It is very important to attend all the classes.

Student Responsibilities or Tips for Success in the Course

- ✓ **Checking both D2L and emails for course-related announcements.**
- ✓ Attending all the classes.
- ✓ Dedicated time to learn course materials.
- ✓ Reading assigned textbook materials.
- ✓ Have the required technology (a computer, a secure and reliable internet connection, and other requirements detailed in this syllabus – please read the “Technology Requirements” section.
- ✓ **Take exams on the exam days.**
- ✓ **Submitting the homework and the assignment before deadlines.**
- ✓ If special accommodation is needed, notify the instructor in advance.

Assessments:

There will be three types of assessments that will contribute to the grade. They are:

1. Graded Homework

Online homework assignments will be posted on the D2L course homepage in the form of "Quizzes ". You may use course materials when taking the quizzes; this includes your textbook,

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lecture notes, and your handwritten notes. You should not 'google' or otherwise search the web for answers. You should not ask other students for the answers. These assignments are intended to help YOU learn the material. Send me an email if you are locked out or have other computer difficulties that prevent you from completing the assignments on time.

If your computer is having issues or your Wi-Fi is a problem, **remember that there are computers in the library and elsewhere on campus that you can use.** You will have several days to complete these assignments - do not wait until the last 10 minutes to do them!

Note: Graded homework will not be accepted after the Answer Keys have been posted or given out in class!

2. Exams

There will be three exams during the semester = **Exams 1, 2, and 3.** The exams are **closed-book, in-class, and proctored.**

3. Take-Home Project

The take-home project will include analyzing experimental results of gene expression data, using techniques learned in class. Your answer should be presented in a scientific article format, consisting of the following sections: Results, Discussion, and Conclusion.

4. Research Paper Presentation

In this course, students will work in groups of up to three people to select and present a paper from the assigned list. The presenting group will serve as discussion leaders for their chosen paper. All other students are expected to thoroughly prepare to discuss the experimental procedures and results during the in-class session.

Discussion leaders may use PowerPoint to present background information, the significance of the study, and key figures from the article. To facilitate meaningful discussion, leaders must also post discussion questions on D2L Brightspace at least three days prior to the class session.

To effectively lead and participate in the discussion, everyone must have a clear understanding of the assigned paper. Your performance in discussion, both as a presenter and participant, will contribute to your final grade. Limit the presentation to 20 minutes.

Your presentation should include the following:

1. Background
2. Experimental Procedures.
3. Results
4. Discussion
5. Conclusion

The list of papers we will discuss will be posted after the first week of the class.

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EXAMS ARE SCHEDULED FOR THE FOLLOWING DATES

Assessment	Date/Time
Homework	Various times
Exam 1	Sep. 26 11:00 AM-12:15 PM
Exam 2	Oct. 24 11:00 AM-12:15 PM
Exam 3	Dec. 2 11:00 AM-12:15 PM
Presentation	Various times
Take-Home Exam	Due Dec 9 11:59 PM

GRADING

Final grades in this course will be based on the following scale:

	Percentage of Final Grade
Graded Homework	20%
Exams 1-3	60% (20 % each)
Take Home Exam	10%
Literature Review/Participation	10%

- A = 90%-100%
- B = 80%-89%
- C = 70%-79%
- D = 60%-69%
- F = 59% or below

COURSE OUTLINE / CALENDAR

Week	Lectures	Textbook	
1 8/25	Syllabus & Intro to Gene Control Levels of Gene Control	Chapter 1	
2 9/2	Methods in Gene Regulation	Chapter 1	HW #1
3 9/8	Prokaryotic Transcription	Chapter 2	HW #2
4 9/15	Prokaryotic Transcription Prokaryotic Gene Regulation	Chapter 2 Chapter 3	HW #3
5 9/22	Prokaryotic Gene Regulation	Chapter 3	HW #4
6 9/29	Chromatin Structure Exam 1 (9/25)	Chapter 4	
7 10/6	Epigenome	Chapter 5	HW #5

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8 10/13	Epigenome	Chapter 5	HW #6
9 10/20	Transcription in Eukaryotes	Chapter 6	HW #7
10 10/27	Transcriptional control in Eukaryotes Exam 2 (10/30)	Chapter 7	
11 11/3	Post Transcriptional Process	Chapter 8	HW #8
12 11/10	Post Transcriptional Control	Chapter 9	HW #9
13 11/17	Signaling and Gene Control	Chapter 10	HW#10
14 11/24	Signaling and Gene Control Thanksgiving	Chapter 10	
15 12/1	Gene Regulation and Cancer Exam 3 (12/4)	Chapter 13	
12/9	Take Home Exam due		

TECHNOLOGY REQUIREMENTS

LMS

All course sections offered by Texas A&M University-Commerce have a corresponding course shell in the myLeo Online Learning Management System (LMS). Below are technical requirements

LMS Requirements:

<https://community.brightspace.com/s/article/Brightspace-Platform-Requirements>

LMS Browser Support:

https://documentation.brightspace.com/EN/brightspace/requirements/all/browser_support.htm

Zoom Video Conferencing Tool

https://inside.tamuc.edu/campuslife/CampusServices/CITESupportCenter/Zoom_Account.aspx?source=universalmenu

ACCESS AND NAVIGATION

You will need your campus-wide ID (CWID) and password to log into the course. If you do not know your CWID or have forgotten your password, contact the Center for IT Excellence (CITE) at 903.468.6000 or helpdesk@tamuc.edu.

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Note: Personal computer and internet connection problems do not excuse the requirement to complete all course work in a timely and satisfactory manner. Each student needs to have a backup method to deal with these inevitable problems. These methods might include the availability of a backup PC at home or work, the temporary use of a computer at a friend's home, the local library, office service companies, Starbucks, a TAMUC campus open computer lab, etc.

COMMUNICATION AND SUPPORT

If you have any questions or are having difficulties with the course material, please contact your Instructor.

Technical Support

If you are having technical difficulty with any part of Brightspace, please contact Brightspace Technical Support at 1-877-325-7778. Other support options can be found here:

<https://community.brightspace.com/support/s/contactsupport>

COURSE AND UNIVERSITY PROCEDURES/POLICIES

Syllabus Change Policy

The syllabus is a guide. Circumstances and events, such as student progress, may make it necessary for the instructor to modify the syllabus during the semester. Any changes made to the syllabus will be announced in advance.

University Specific Procedures

Student Conduct

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. The Code of Student Conduct is described in detail in the [Student Guidebook](#).

<http://www.tamuc.edu/Admissions/oneStopShop/undergraduateAdmissions/studentGuidebook.aspx>

Students should also consult the Rules of Netiquette for more information regarding how to interact with students in an online forum: <https://www.britannica.com/topic/netiquette>

TAMUC Attendance

For more information about the attendance policy please visit the [Attendance](#) webpage and [Procedures 13.99.99.R0.01](#)

<http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx>

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<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/academic/13.99.99.R0.01.pdf>

Academic Integrity

Students at Texas A&M University-Commerce are expected to maintain high standards of integrity and honesty in all of their scholastic work. For more details and the definition of academic dishonesty see the following procedures:

[Undergraduate Academic Dishonesty 13.99.99.R0.03](#)
[Undergraduate Student Academic Dishonesty Form](#)

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/documents/13.99.99.R0.03UndergraduateStudentAcademicDishonestyForm.pdf>

[Graduate Student Academic Dishonesty Form](#)

<http://www.tamuc.edu/academics/graduateschool/faculty/GraduateStudentAcademicDishonestyFormold.pdf>

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/undergraduates/13.99.99.R0.03UndergraduateAcademicDishonesty.pdf>

Students with Disabilities-- ADA Statement

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services

Texas A&M University-Commerce

Velma K. Waters Library Rm 162

Phone (903) 886-5150 or (903) 886-5835

Fax (903) 468-8148

Email: studentdisabilityservices@tamuc.edu

Website: [Office of Student Disability Resources and Services](#)

<http://www.tamuc.edu/campusLife/campusServices/studentDisabilityResourcesAndServices/>

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Nondiscrimination Notice

Texas A&M University-Commerce will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

Campus Concealed Carry Statement

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in Texas A&M University-Commerce buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and A&M-Commerce Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations.

For a list of locations, please refer to the [Carrying Concealed Handguns On Campus](#) document and/or consult your event organizer.

Web url:

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf>

Pursuant to PC 46.035, the open carrying of handguns is prohibited on all A&M-Commerce campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.

A&M-Commerce Supports Students' Mental Health

The Counseling Center at A&M-Commerce, located in the Halladay Building, Room 203, offers counseling services, educational programming, and connection to community resources for students. Students have 24/7 access to the Counseling Center's crisis assessment services by calling 903-886-5145. For more information regarding Counseling Center events and confidential services, please visit www.tamuc.edu/counsel

AI use policy [Draft 2, May 25, 2023]

Texas A&M University-Commerce acknowledges that there are legitimate uses of Artificial Intelligence, ChatBots, or other software that has the capacity to generate text, or suggest replacements for text beyond individual words, as determined by the instructor of the course.

Any use of such software must be documented. Any undocumented use of such software constitutes an instance of academic dishonesty (plagiarism).

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Individual instructors may disallow entirely the use of such software for individual assignments or for the entire course. Students should be aware of such requirements and follow their instructors' guidelines. If no instructions are provided the student should assume that the use of such software is disallowed.

In any case, students are fully responsible for the content of any assignment they submit, regardless of whether they used an AI, in any way. This specifically includes cases in which the AI plagiarized another text or misrepresented sources.

13.99.99.R0.03 Undergraduate Academic Dishonesty

13.99.99.R0.10 Graduate Student Academic Dishonesty

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