

1. COUSE INFORMATION

BCHM 61000-001 LEC - Regulation of Eukaryotic Gene Expression

Course Credit Hours: 3.00

Spring 2026

CRN: 15944

Instructional Modality: Face-to-Face

Prerequisites: BCHM 56100 and 56200, or BCHM 60501. Lack of these prerequisites will require approval by the instructor.

2. COURSE DESCRIPTION

This course will provide students with a basic understanding of gene expression mechanisms involving past and newly emerging topics and tools. This course will be taught from primary literature and reviews, using the textbook as a background resource. Topics will include transcription, histone modifications and chromatin, non-coding RNAs, RNA processing, export and translation, and DNA repair. Students will learn the basic steps in eukaryotic gene expression. In addition, students will learn how to read, communicate, and interpret scientific literature. Emphasis will be placed on reading and interpreting scientific literature and applying knowledge through class presentations, discussions, and written assignments.

3. LEARNING RESOURCES, TECHNOLOGY AND TEXTS

There is no requirement for textbooks.

The course uses two textbooks as a resource:

1. Lewin's Genes XII, 12th edition

Jocelyn E. Krebs, Elliott S. Goldstein, Stephen T. Kilpatrick
Jones and Bartlett Learning, LLC, an Ascend Learning Company, c. 2018

2. Molecular Biology of the Cell

Bruce Alberts, Alexander Johnson, Julian Lewis, Martin Raff, Keith Roberts, and Peter Walter
New York, Garland Science

Additional Readings:

Some of the material from this course may also be covered by primary scientific literature and scientific reviews. These are accessible free of charge and electronically through the Purdue Library or made available via Brightspace.

Software/web resources:

MS Word, PowerPoint (MS Office is free for all students:

<https://it.purdue.edu/services/microsoft-office-365.php>)

Tutoring support:

The Academic Success Center (<https://www.purdue.edu/asc/about/index.html>) located in Wiley Hall, Room C215, provides a variety of proactive, practical and approachable academic support services for undergraduate students.

Visit Ask a Librarian (<https://www.lib.purdue.edu/help/askalib>) to connect with helpful resources and services provided by the Purdue Libraries and School of Information Studies for course assignments and projects.

Brightspace learning management system (LMS):

Access the course via Purdue's Brightspace learning management system. Begin with the Start Here tab, which offers further insight into the course and how you can be successful in it. It is strongly suggested that you explore and become familiar not only with the site navigation, but also with content and resources available for this course. See the Student Services widget on the campus homepage for resources such as Technology Help, Academic Help, Campus Resources, and Protect Purdue.

3A. Use of artificial intelligence (AI) or Large Language Models (LLM) in this course

Responsible Use of AI in Completing Coursework

Advancements in Artificial Intelligence (AI) provide students with unparalleled access to information and problem-solving capabilities. However, with these advantages come the responsibilities of ethical use and academic integrity. This statement outlines the expectations and guidelines for the responsible use of AI in our course.

Objectives:

By adhering to these guidelines, students aim to:

1. Uphold academic honesty and personal integrity.
2. Ensure equitable access and opportunities for all students.
3. Develop skills for critical thinking and independent reasoning.
4. Understand the strengths and limitations of AI tools.

Guidelines for Responsible Use:

1. **Original Work:** Students should ensure that assignments submitted are original and based on their understanding. While AI can assist in research or provide general

guidance, it should not produce work on behalf of the student.

2. **Citation:** Any content, ideas, or assistance obtained through AI tools must be appropriately cited, similar to any other reference or source. You will need to go and find the relevant citations from the primary literature (journal articles)!
3. **Collaboration:** If a student collaborates with AI tools, (And you are encouraged to do so in this course!) they must specify the nature and extent of this collaboration in their submission. This includes providing details of the prompts used to generate the AI responses.
4. **Prohibited Uses:** AI should not be used to complete quizzes, exams, or any other assessments unless explicitly permitted by the instructor.
5. **Accessibility:** All students must have equal access to AI tools. If a particular tool is used in a course, it should be free of cost for all users.
6. **Data Privacy:** Students must be cautious when sharing personal or sensitive information with AI platforms and should be familiar with the terms of service of any third-party AI tools.

Consequences for Misuse:

Misuse of AI tools in coursework, which includes but is not limited to producing unoriginal work, uncited use of AI-generated content, or unauthorized assistance on assessments, will be considered a breach of academic integrity. Consequences will follow Purdue's policies on academic dishonesty as detailed in this syllabus, which may include grade penalties, course failure, or more severe disciplinary actions.

Reflection & Discussion:

Students are encouraged to reflect on their experiences using AI tools and to discuss openly any ethical or academic concerns. Periodic class discussions or forums might be held to address advancements in AI and their implications in academia.

The promise of AI in enhancing learning and research is vast, but it must be used judiciously. Responsible use not only ensures academic honesty but also maximizes genuine learning and skill development. Students are urged to approach AI as a supplementary tool, not a replacement for their unique intellectual capacities and insights.

3B. Hardware requirements

A computer/tablet

4. LEARNING OUTCOMES

Foundation knowledge

- understanding and remembering learned information

Comprehension

- developing a full understanding of concepts to a degree that allows explanations and prediction.

Application/Analysis

- apply knowledge to actual situations

- break down objects (data) and ideas into simple parts and find evidence to support generalizations (i.e., data interpretation)

Oral communication

5. ASSESSMENTS

Your achievement of course learning outcomes will be assessed through a combination of participation, projects, and in-class exams spread throughout the academic period. Details on these assignments and exams, including a schedule of due dates, rubrics to guide evaluation, and guidelines on discussion participation and evaluation will be posted on the course website.

Assignments	Format	Number	Points/Each	Points
Quiz	10 multiple-choice questions	3	5	15
Presentations	Power Point	1	5	5
Literature Discussions	In-class participation	4	5	20
Mid-term Exam	In-class (paper)	1	20	20
Final exam	In-class (paper)	1	40	40
				Total: 100

In-class presentations and discussions:

Grades will be assessed based on exams, discussions/class participation, and presentations. There will be multiple opportunities for students to present or discuss literature or topics on gene expression during this semester. Class participation points will be determined through engaged discussions, contribution to student presentations, asking relevant questions, etc. Students are responsible for reading material prior to class. Dr. Hall will provide guidance regarding objectives for each reading assignment and key 'take home' messages or concepts.

6. GRADING SCALE

In this class, grades reflect the sum of your achievement of learning outcomes throughout the semester. You will accumulate points as described in the assignments portion above, with each assignment graded according to rubric. At the end of the semester, final grades will be calculated by adding the total points earned and translating those numbers (out of 100) into the following letters.

A: 100 - 90

B: 89 - 80

C: 79 - 70

D: 69 - 60

F: 59 or below

Each student will be provided with up-to-date graded feedback at least two times during the term – before the final date to withdraw from the course with a W and at least one week prior to the term's final exam period. In a 16-week Spring 2026 course, each student will have **up-to-date graded feedback before Thurs., April 16, and again before Mon., April 27.**

7. ATTENDANCE POLICY

There are two important resources related to class attendance to which you may refer as you outline your course policies: the University Academic Regulations regarding class attendance and the Office of the Dean of Students (ODOS) webpage on class absences, which outlines the types of notifications to instructors that ODOS may provide.

The General Guidelines state that **attendance is a shared responsibility**, with instructors establishing and clearly communicating attendance policies in the course syllabus and students responsible for class-related work missing because of an unavoidable absence. This course follows the University Academic Regulations regarding class attendance, which states that students are expected to be present at every meeting of the classes in which they are enrolled. When conflicts or absences can be anticipated, such as for many University-sponsored activities

and religious observations, you should inform me of the situation as far in advance as possible. For unanticipated or emergency absences when advance notification is not possible, contact me as soon as possible by email or phone. For absences that do not fall under excused absence regulations (see below), this course follows the following procedures:

1. Do not come to class if you are feeling ill, but **DO** email me, with the subject line: **BCHM610_absence**. I do not need details about your symptoms. Just let me know you are feeling ill and cannot come to class. If it is an emergency, please follow the University regulations on emergent medical care (see below).
2. Unless it falls under the University excused absence regulations (see below*), any work due should be submitted on time via our course Brightspace.
3. If that day's class involves assessed work such as an exam or presentation, you and I will plan if and how you can make up the work, following the assignment/exam guidelines. This plan must be done before the next class period, so again, email me immediately when you know that you will miss class.
4. The most important consideration in any absence is how it will affect your achievement of the assignment objectives and the course learning outcomes.

*The excused absence regulations that go through ODOS such as grief/bereavement, military service, jury duty, parenting leave, or certain types of medical care.

(<https://www.purdue.edu/advocacy/students/index.html>), to complete appropriate forms for instructor notification. Under academic regulations, excused absences may be granted by ODOS for cases of grief/bereavement, military service, jury duty, parenting leave, or emergent medical care. The processes are detailed, so plan ahead.

A hyperlink to Purdue's Academic Regulations: Attendance is included in our course Brightspace under University Policies and Statements.

8. ACADEMIC INTEGRITY

Academic integrity is one of the highest values that Purdue University holds. Individuals are encouraged to alert university officials to potential breaches of this value by either emailing integrity@purdue.edu or by calling 765-494-8778. While information may be submitted anonymously, the more information is submitted the greater the opportunity for the university to investigate the concern. More details are available on our course Brightspace under University Policies and Statements.

9. NONDISCRIMINATION STATEMENT

Purdue University is committed to maintaining a community which recognizes and values the inherent worth and dignity of every person; fosters tolerance, sensitivity, understanding, and mutual respect among its members; and encourages everyone to strive to reach his or her own potential. The University believes that intellectual and cultural diversity among its many members strengthens the institution, stimulates creativity, promotes the exchange of ideas, and enriches campus life.

Purdue University views, evaluates, and treats all persons in any University related activity or circumstance in which they may be involved, solely as individuals on the basis of their own personal abilities, qualifications, and other relevant characteristics.

Purdue University prohibits discrimination against any member of the University community on the basis of race, religion, color, sex, age, national origin or ancestry, genetic information, marital status, parental status, sexual orientation, gender identity and expression, disability, or status as a veteran. The University will conduct its programs, services and activities consistent with applicable federal, state and local laws, regulations and orders and in conformance with the procedures and limitations as set forth in Purdue's Equal Opportunity and Equal Access policy which provides specific contractual rights and remedies.

Any question of interpretation regarding this Nondiscrimination Policy Statement shall be referred to the Vice President for Ethics and Compliance for final determination.

10. ACCESSIBILITY

Purdue University strives to make learning experiences accessible to all participants. If you anticipate or experience physical or academic barriers based on disability, you are encouraged to contact the Disability Resource Center at: drc@purdue.edu or by phone: 765-494-1247, as soon as possible.

If the Disability Resource Center (DRC) has determined reasonable accommodations that you would like to utilize in my class, you must send me your Course Accommodation Letter. Instructions on sharing your Course Accommodation Letter can be found by visiting: <https://www.purdue.edu/drc/students/course-accommodation-letter.php> Additionally, you are strongly encouraged to contact me as soon as possible to discuss implementation of your accommodations.

Students with disabilities whose DRC Course Accommodation Letter (CAL) includes test accommodation must first release their CAL to me and then schedule to take their exams with Purdue Testing Services. You must schedule at least four days (96 hours) before the exam date listed on the syllabus.

In the case of finals week, you must schedule by the Friday before Quiet Period. I will provide Purdue Testing Services with your exam, and they will proctor it and provide the result to me for grading. Students must inform me immediately of cases when Purdue Testing Services is at capacity or otherwise unable to proctor the exam so that I can make other arrangements. Students who fail to follow this process and meet stated deadlines risk not being able to have their accommodation for that exam.

I, or my department, will arrange to provide test accommodation for those who have them as a part of their DRC Course Accommodation Letter (CAL). It is imperative that students release their CALs to me as soon as they are available so that arrangements can be made well in advance of exams. We may be unable to implement test accommodation if we do not have access to your CAL.

11. MENTAL HEALTH/WELLNESS STATEMENT

If you find yourself beginning to feel some stress, anxiety and/or feeling slightly overwhelmed, try Therapy Assistance Online (TAO); <https://www.purdue.edu/caps/students/resources/self-help/digital/tao.php>), a new web and app-based mental health resource available courtesy of Purdue Counseling and Psychological Services (CAPS). TAO is available to students, faculty, and staff at any time. If you need support and information about options and resources, please contact or see the Office of the Dean of Students. Call **765-494-1747**. Hours of operation are M-F, 8 a.m.- 5 p.m.

If you find yourself struggling to find a healthy balance between academics, social life, stress, etc., sign up for free one-on-one virtual or in-person sessions with a Purdue Wellness Coach at RecWell. Student coaches can help you navigate through barriers and challenges toward your goals throughout the semester. Sign up is free and can be done on BoilerConnect.

If you're struggling and need mental health services: Purdue University is committed to advancing the mental health and well-being of its students. If you or someone you know is feeling

overwhelmed, depressed, and/or in need of mental health support, services are available. For help, such individuals should contact Counseling and Psychological Services (CAPS) at **765-494-6995** during and after hours, on weekends and holidays, or by going to the CAPS office on the **second floor of the Purdue University Student Health Center (PUSH) during business hours**

12. STUDENT-RELATED POLICIES

The Vice President for Ethics & Compliance website includes a list of Student Policies. Among those is the Violent Behavior policy, which explains that Purdue is committed to providing a safe and secure campus environment for members of the university community. Purdue strives to create an educational environment for students and a work environment for employees that promote educational and career goals. Violent behavior impedes such goals. Therefore, violent behavior is prohibited in or in any University facility or while participating in any university activity.

13. BASIC NEEDS SECURITY

If you are facing challenges securing basic needs such as food, housing, transportation, health services, or access to technology or childcare resources and believe this may affect your performance in the course, please contact the Office of the Dean of Students (ODOS) to help coordinate with community resources. These services vary by location. In **West Lafayette**, see the Basic Needs Program website, or email basicneeds@purdue.edu.

14. COURSE EVALUATION

A hyperlink to Purdue's Mental health, Wellness and Basic needs security is included in our co Toward the end of this semester, you will be provided with an opportunity to give feedback on this course and your instructor. Purdue uses an online course evaluation system, and I will not have access to this anonymous feedback until after final grades are submitted. You will receive an official email from evaluation administrators with a link to the online evaluation site and will receive a prompt to complete the survey when you log in to Brightspace. The subject line will be: *Please take 2-5 minutes to complete the survey*. Check your "Junk E-mail" folder occasionally to be sure the evaluation emails were not accidentally routed there. Your participation is an integral part of this course, and your feedback is vital to improving education at Purdue University. I strongly urge you to participate in the evaluation system.

Disclaimer sample language

This syllabus is subject to change. You will be notified of any changes as far in advance as possible via an announcement on Brightspace. Monitor your Purdue email daily for updates.

15. EMERGENCY PREPAREDNESS

In the event of a major campus emergency, course requirements, deadlines and grading percentages are subject to changes that may be necessitated by a revised semester calendar or other circumstances beyond the instructor's control. Relevant changes to this course will be posted onto the

course website or can be obtained by contacting the instructors or TAs via email or phone. You are expected to read your [purdue.edu email](mailto:your.purdue.edu.email) on a frequent basis.

On the first day of class, I will review the **Emergency Preparedness plan for our specific classroom**. Please make note of items like:

- The location to where we will proceed after evacuating the building if we hear a fire alarm.
- The location of our Shelter in Place in the event of a tornado warning.
- The location of our Shelter in Place in the event of an active threat such as a shooting.

A link to Purdue's Information on [Emergency Preparation and Planning](#) is located on our Brightspace under "University Policies and Statements." This website covers topics such as Severe Weather Guidance, Emergency Plans, and a place to sign up for the Emergency Warning Notification System. I encourage you to download and review the Emergency Preparedness for Classrooms document (**PDF**) or (**Word**).

Emergency preparedness is your personal responsibility. Purdue University is actively preparing for natural disasters or human-caused incidents with the goal of maintaining a safe and secure campus. Let's review the following procedures:

- For any emergency call or text **911**.
- There are nearly 300 **Emergency Telephone Systems** throughout campus that connect

directly to the [Purdue University Police Department](#) (PUPD). If you feel threatened or need help, push the button and you will be connected to the PUPD.

- If we hear a fire alarm, we will immediately evacuate the building and proceed to the **Food Science Bldg**.
 - **Do not use the elevator!**
 - Go over evacuation route...see specific Building Emergency Plan.
- If we are notified of a Shelter in Place requirement for a tornado warning, we will shelter in the lowest level of this building away from windows and doors. Our preferred location is **our classroom**.
- If we are notified of a Shelter in Place requirement for an active threat such as a shooting, we will shelter in a room that is securable preferably without windows. Our preferred location is **our classroom**.
- If we are notified of a Shelter in Place requirement for hazardous materials release, we will shelter in our classroom by shutting any open doors and windows.

(NOTE: Each building will have different evacuation & shelter locations. The specific Building Emergency Plan will provide specific locations and procedures). See

http://www.purdue.edu/ehps/emergency_preparedness/emergency/building-plan.html

Attached to the syllabus is an “Emergency Preparedness for Classrooms” sheet that provides additional preparedness information. Please review the sheet and the Emergency Preparedness website for additional emergency preparedness information.



EMERGENCY PREPAREDNESS for Classrooms

EMERGENCY NOTIFICATION PROCEDURES are based on a simple concept – if you hear a fire alarm inside, proceed outside. If you hear a siren outside, proceed inside.

- **Indoor Fire Alarms** mean to stop class or research and immediately **evacuate** the building.
 - Proceed to your Emergency Assembly Area away from building doors. **Remain outside** until police, fire, or other emergency response personnel provide additional guidance or tell you it is safe to leave.
- **All Hazards Outdoor Emergency Warning Sirens** mean to immediately seek shelter (**Shelter in Place**) in a safe location within the closest building.
 - “Shelter in place” means seeking immediate shelter inside a building or University residence. This course of action may need to be taken during a tornado, an active threat such as a shooting or release of hazardous materials in the outside air. Once safely inside, find out more details about the emergency*. **Remain in place** until police, fire, or other emergency response personnel provide additional guidance or tell you it is safe to leave.

**In both cases, you should seek additional clarifying information by all means possible...Purdue Emergency Status page, text message, email alert, TV, radio, etc; review the Purdue Emergency Warning Notification System multi-communication layers at http://www.purdue.edu/ehps/emergency_preparedness/warning-system.html*

EMERGENCY RESPONSE PROCEDURES:

- Review of the **Emergency Procedures Guidelines**
https://www.purdue.edu/emergency_preparedness/flipchart/index.html
- Review the **Building Emergency Plan** (available on the Emergency Preparedness website or from the building deputy) for:
 - evacuation routes, exit points, and emergency assembly area

- when and how to evacuate the building.
- shelter in place procedures and locations
- additional building specific procedures and requirements.

EMERGENCY PREPAREDNESS AWARENESS VIDEO

- **"Run. Hide. Fight. ®"** is a 6-minute active shooter awareness video that illustrates what to look for and how to prepare and react to this type of incident. See:
https://www.youtube.com/watch?v=5mzl_5aj4Vs

MORE INFORMATION

Reference the Emergency Preparedness web site for additional information:

http://www.purdue.edu/ehps/emergency_preparedness