



## COURSE OUTLINE

### 1. **Course:** BCEM 431, Proteins and Proteomics - Fall 2023

Lecture 01 : MWF 14:00 - 14:50 in ST 143

| Instructor            | Email                         | Phone | Office  | Hours |
|-----------------------|-------------------------------|-------|---------|-------|
| Dr Omid Haji-Ghassemi | omid.hajighassemi@ucalgary.ca | TBA   | BI 430B | TBA   |

To account for any necessary transition to remote learning for the current semester, courses with in-person lectures, labs, or tutorials may be shifted to remote delivery for a certain period of time. In addition, adjustments may be made to the modality and format of assessments and deadlines, as well as to other course components and/or requirements, so that all coursework tasks are in line with the necessary and evolving health precautions for all involved (students and staff).

#### **In Person Delivery Details:**

All classes will be held in-person. Lecture notes/slides will be provided before each class.

#### **Email Response Time and Etiquette:**

- **Weekdays:** I strive to respond to emails within 24 hours on weekdays. If you send an email after 5:00 PM, you may not receive a reply until the next business day.
- **Weekends and Holidays:** Please note that I may not be available to respond to emails over weekends and on public holidays. If you email me during these times, you can expect a response on the next business day.
- **Subject Line:** Always include "BCEM 431" in the subject and add clear and specific subject line that pertains to your query or concern. For example, "BCEM 431, Question about Assignment" is more helpful than "Question." I also sort emails from the class based on subject line so if the key word BCEM 431 is missing then it will not go into my course folder.
- **Content:** Be concise and to the point. Clearly state your question or concern, and include any relevant details such as assignment numbers or lecture dates.
- **Signature:** Please sign your emails with your full name and mention the course name or code for easier identification.

#### **Course Site:**

D2L: BCEM 431 L01-(Fall 2023)-Proteins and Proteomics

**Note:** Students must use their U of C account for all course correspondence.

#### **Equity Diversity & Inclusion:**

The University of Calgary is committed to creating an equitable, diverse and inclusive campus, and condemns harm and discrimination of any form. We value all persons regardless of their race, gender, ethnicity, age, LGBTQIA2S+ identity and expression, disability, religion, spirituality, and socioeconomic status. The Faculty of Science strives to extend these values in every aspect of our courses, research, and teachings to better promote academic excellence and foster belonging for all.

The Biological Sciences Equity Committee acknowledges there are persistent barriers that prevent such accessibility and hinder our progress towards EDI. Our representatives (faculty, staff, postdocs, graduate and undergraduate students) are committed to addressing any concerns and work towards proactive solutions that enact necessary change within the department. To submit anonymous questions, comments or concerns regarding EDI related issues, please reach out to our Chair, Arshad Ayyaz ([\\_arshad.ayyaz@ucalgary.ca](mailto:_arshad.ayyaz@ucalgary.ca)), or a committee representative of your choice at <https://science.ucalgary.ca/biological-sciences/about/equity-diversity-and-inclusion>

## 2. **Requisites:**

See section [3.5.C](#) in the Faculty of Science section of the online Calendar.

### **Prerequisite(s):**

Biology 331; Biochemistry 341 or 393; and Chemistry 353 or 355.

### **Antirequisite(s):**

Credit for Biochemistry 431 and 531 will not be allowed.

Biology 331; Biochemistry 341 or 393; and Chemistry 353 or 355.

## 3. **Grading:**

The University policy on grading and related matters is described in [F.1](#) and [F.2](#) of the online University Calendar.

In determining the overall grade in the course the following weights will be used:

| Course Component               | Weight | Due Date (duration for exams)   | Modality for exams | Location for exams  |
|--------------------------------|--------|---|--------------------|---|
| Midterm 1                      | 25%    | Oct 04 2023 at 07:00 pm (2 Hours)   | in-person          | TBD   |
| Midterm 2                      | 25%    | Nov 09 2023 at 07:00 pm (2 Hours)   | in-person          | TBD   |
| Assignment <sup>1</sup>        | 10%    | Dec 01 2023   |                    |   |
| Registrar Scheduled Final Exam | 40%    | Will be available when the final exam schedule is released by the Registrar | in person          | Will be available when the final exam schedule is released by the Registrar |

<sup>1</sup> Details will be posted on D2L

Each piece of work (reports, assignments, quizzes, midterm exam(s) or final examination) submitted by the student will be assigned a grade. The student's grade for each component listed above will be combined with the indicated weights to produce an overall percentage for the course, which will be used to determine the course letter grade.

The conversion between a percentage grade and letter grade is as follows.

|                    | A+   | A    | A-   | B+  | B   | B-   | C+   | C   | C-  | D+   | D    |
|--------------------|------|------|------|-----|-----|------|------|-----|-----|------|------|
| Minimum % Required | 92 % | 86 % | 82 % | 78% | 74% | 70 % | 66 % | 62% | 58% | 54 % | 50 % |

This course will have a Registrar Scheduled Final exam that will be delivered in-person and on campus. [The Final Examination Schedule](#) will be published by the Registrar's Office approximately one month after the start of the term. The final exam for this course will be designed to be completed within 3 hours.

The University of Calgary offers a [flexible grade option](#), Credit Granted (CG) to support student's breadth of learning and student wellness. Faculty units may have additional requirements or restrictions for the use of the CG grade at the faculty, degree or program level. To see the full list of Faculty of Science courses where CG is not eligible, please visit the following website: <https://science.ucalgary.ca/current-students/undergraduate/program-advising/flexible-grading-option-cg-grade>

## 4. **Missed Components Of Term Work:**

In the event that a student legitimately fails to submit any online or in-person assessment on time (e.g. due to illness, domestic affliction, etc...), please contact the course coordinator, or the course instructor if this course does not have a coordinator to arrange for a re-adjustment of a submission date, or possible exemption and reweighing of components. Absences not reported within 48 hours will not be accommodated. Students may be asked to provide supporting documentation ([Section M.1](#)) for an excused absence, See [FAQ](#).

If an excused absence is approved, options for how the missed assessment is dealt with is at the discretion of the coordinator or course instructor. Some options such as an exemption and pro-rating among the components of the course may not be a viable option based on the design of this course.

## 5. Scheduled Out-of-Class Activities:

The following out of class activities are scheduled for this course.

| Activity  | Location                 | Date and Time                         | Duration |
|-----------|--------------------------|---------------------------------------|----------|
| Midterm 1 | On Campus - Location TBD | Wednesday, October 4, 2023 at 7:00 pm | 2 Hours  |
| Midterm 2 | On Campus - Location TBD | Thursday, November 9, 2023 at 7:00 pm | 2 Hours  |

**REGULARLY SCHEDULED CLASSES HAVE PRECEDENCE OVER ANY OUT-OF-CLASS-TIME-ACTIVITY.** If you have a conflict with the out-of-class-time-activity, please contact your course coordinator/instructor no later than **14 days prior** to the date of the out-of-class activity so that alternative arrangements may be made.

## 6. Course Materials:

Recommended Textbook(s):

PETSKO, GREGORY A. AND RINGE, DAGMAR, *PROTEIN STRUCTURE AND FUNCTION*: SINAUER.

In order to successfully engage in their learning experiences at the University of Calgary, students taking online, remote and blended courses are required to have reliable access to the following technology:

- A computer with a supported operating system, as well as the latest security, and malware updates;
- A current and updated web browser;
- Webcam/Camera (built-in or external);
- Microphone and speaker (built-in or external), or headset with microphone;
- Current antivirus and/or firewall software enabled;
- Stable internet connection.

For more information please refer to the UofC [ELearning](#) online website.

## 7. Examination Policy:

No aids are allowed on tests or examinations. Calculators can be used on the final exam, but not on the midterm tests. **Exams must be written in pen.**

I do not offer makeup exams. In the case of a missed midterm, your grade will be shifted towards the second midterm and Final with a heavier emphasis on the Final exam. **If you miss both midterms, your final exam is worth 90%!**

Final exam is cumulative.

Students should also read the Calendar, [Section G](#), on Examinations.

## 8. Approved Mandatory And Optional Course Supplemental Fees:

There are no mandatory or optional course supplemental fees for this course.

## 9. Writing Across The Curriculum Statement:

For all components of the course, in any written work, the quality of the student's writing (language, spelling, grammar, presentation etc.) can be a factor in the evaluation of the work. See also Section [E.2](#) of the University Calendar.

## 10. Human & Living Organism Studies Statements:

Students will not participate as subjects or researchers in human studies.

See also [Section E.5](#) of the University Calendar.

**STUDIES IN THE BIOLOGICAL SCIENCES INVOLVE THE USE OF LIVING AND DEAD ORGANISMS.** Students taking laboratory and field-based courses in these disciplines can expect involvement with and experimentation on such materials. Students perform dissections on dead or preserved organisms in some courses. In particular courses, students experiment on living organisms, their tissues, cells, or molecules. Sometimes field work requires students to collect a variety of living materials by many methods, including humane trapping.

All work on humans and other animals conforms to the Helsinki Declaration and to the regulations of the Canadian Council on Animal Care. The Department strives for the highest ethical standards consistent with stewardship of the environment for organisms whose use is not governed by statutory authority. Individuals contemplating taking courses or majoring in one of the fields of study offered by the Department of Biological Sciences should ensure that they have fully considered these issues before enrolling. Students are advised to discuss any concern they might have with the Undergraduate Program Director of the Department.

Students are expected to be familiar with [Section SC.4.1](#) of the University Calendar.

## 11. Reappraisal Of Grades:

A student wishing a reappraisal, should first attempt to review the graded work with the Course coordinator/instructor or department offering the course. Students with sufficient academic grounds may request a reappraisal. Non-academic grounds are not relevant for grade reappraisals. Students should be aware that the grade being reappraised may be raised, lowered or remain the same. See [Section I.3](#) of the University Calendar.

- a. **Term Work:** The student should present their rationale as effectively and as fully as possible to the Course coordinator/instructor within **ten business days** of either being notified about the mark, or of the item's return to the class. If the student is not satisfied with the outcome, the student shall submit the Reappraisal of Graded Term work [form](#) to the department in which the course is offered within 2 business days of receiving the decision from the instructor. The Department will arrange for a reappraisal of the work within the next ten business days. The reappraisal will only be considered if the student provides a detailed rationale that outlines where and for what reason an error is suspected. See sections [I.1](#) and [I.2](#) of the University Calendar
- b. **Final Exam:** The student shall submit the request to Enrolment Services. See [Section I.3](#) of the University Calendar.

- Grades for midterms and the assignment will be posted on D2L within two weeks of receipt. It is your responsibility to review your posted mark and notify Dr. Haji-Ghassemi within 48 hours of posting. Documentation will be required, including email receipt of your submission to D2L or via email submission and your submission with a time-stamp dated before the due date.

- If you would like to have your work re-appraised after the posting of your mark, please contact Dr. Haji-Ghassemi for an appointment to review and discuss your work **24hr after** your grade was received. Note: your GTAs cannot reappraise your grade. If you would like to request a reappraisal. Please be aware that the grade can be raised, lowered, or remain the same. See Section I.3 of the University Calendar for more information on grade reappraisals.

**- All exams must be written with a pen!**

## 12. Other Important Information For Students:

- a. **Mental Health** The University of Calgary recognizes the pivotal role that student mental health plays in physical health, social connectedness and academic success, and aspires to create a caring and supportive campus community where individuals can freely talk about mental health and receive supports when needed. We encourage you to explore the mental health resources available throughout the university community, such as counselling, self-help resources, peer support or skills-building available through the SU Wellness Centre (Room 370, MacEwan Student Centre, [Mental Health Services Website](#)) and the Campus Mental Health Strategy website ([Mental Health](#)).
- b. **SU Wellness Services:** For more information, see their [website](#) or call [403-210-9355](#).
- c. **Sexual Violence:** The Sexual Violence Support Advocate, Carla Bertsch, can provide confidential support and information regarding sexual violence to all members of the university community. Carla can be reached by email ([syva@ucalgary.ca](mailto:syva@ucalgary.ca)) or phone at [403-220-2208](#). The complete University of Calgary policy on sexual violence can be viewed [here](#).

- d. **Student Ombuds Office:** A safe place for all students of the University of Calgary to discuss student related issues, interpersonal conflict, academic and non-academic concerns, and many other problems.
- e. **Student Union Information:** [SU contact](#), Email your SU Science Reps: [science1@su.ucalgary.ca](mailto:science1@su.ucalgary.ca), [science2@su.ucalgary.ca](mailto:science2@su.ucalgary.ca), [science3@su.ucalgary.ca](mailto:science3@su.ucalgary.ca),

f. **Academic Accommodation Policy:**

It is the student's responsibility to request academic accommodations according to the University policies and procedures listed below. The student accommodation policy can be found at: <https://www.ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Student-Accommodation-Policy.pdf>

Students needing an accommodation because of a disability or medical condition should communicate this need to Student Accessibility Services in accordance with the Procedure for Accommodations for Students with Disabilities: <https://www.ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Accommodation-for-Students-with-Disabilities-Procedure.pdf>.

Students needing an accommodation in relation to their coursework or to fulfil requirements for a graduate degree, based on a Protected Ground other than Disability, should communicate this need, by filling out the [Request for Academic Accommodation Form](#) and sending it to Lisa Gieg by email [imgieg@ucalgary.ca](mailto:imgieg@ucalgary.ca) preferably 10 business days before the due date of an assessment or scheduled absence.

- g. **Misconduct:** Academic integrity is the foundation of the development and acquisition of knowledge and is based on values of honesty, trust, responsibility, and respect. We expect members of our community to act with integrity. Research integrity, ethics, and principles of conduct are key to academic integrity. Members of our campus community are required to abide by our institutional [Code of Conduct](#) and promote academic integrity in upholding the University of Calgary's reputation of excellence. Some examples of academic misconduct include but are not limited to: posting course material to online platforms or file sharing without the course instructor's consent; submitting or presenting work as if it were the student's own work; submitting or presenting work in one course which has also been submitted in another course without the instructor's permission; borrowing experimental values from others without the instructor's approval; falsification/fabrication of experimental values in a report. Please read the following to inform yourself more on academic integrity:

[Student Handbook on Academic Integrity](#)  
[Student Academic Misconduct Policy](#) and [Procedure](#)  
[Faculty of Science Academic Misconduct Process](#)  
[Research Integrity Policy](#)

Additional information is available on the [Student Success Centre Academic Integrity page](#)

- h. **Copyright of Course Materials:** All course materials (including those posted on the course D2L site, a course website, or used in any teaching activity such as (but not limited to) examinations, quizzes, assignments, laboratory manuals, lecture slides or lecture materials and other course notes) are protected by law. These materials are for the sole use of students registered in this course and must not be redistributed. Sharing these materials with anyone else would be a breach of the terms and conditions governing student access to D2L, as well as a violation of the copyright in these materials, and may be pursued as a case of student academic or [non-academic misconduct](#), in addition to any other remedies available at law.
- i. **Freedom of Information and Privacy:** This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPP). Students should identify themselves on all written work by placing their name on the front page and their ID number on each subsequent page. For more information, see [Legal Services](#) website.
- j. **Surveys:** At the University of Calgary, feedback through the Universal Student Ratings of Instruction ([USRI](#)) survey and the Faculty of Science Teaching Feedback form provides valuable information to help with evaluating instruction, enhancing learning and teaching, and selecting courses. Your responses make a difference - please participate in these surveys.

**Course Outcomes:**

- Explain the stability of proteins, describing the interactions that lead to their structures and functions and explaining how proteins gain their structures
- Interpret diagrams showing different representations of proteins
- Contrast the techniques used to determine the structures of proteins
- Compare the physicochemical properties of native and non-native conformations of proteins

- Describe the general structures and mechanisms of chaperones and enzymes important for promoting the folding of proteins in vivo
- Describe the roles of different metal ions in the biological functions of metalloproteins
- Describe how proteins are regulated by post-translational modifications
- Explain techniques commonly used in proteomics
- Predict the structures of chemical modifications and explain the resulting effects on protein structure and function by recognizing the structure and reactivity profiles of reagents commonly used to covalently modify proteins
- Critically analyze a research paper describing experiments conducted on proteins

Electronically Approved - Sep 01 2023 09:57

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**Department Approval**

Electronically Approved - Sep 05 2023 20:39

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**Associate Dean's Approval**