

## **Bioinformatics 401 Syllabus - 2025**

### **Instructors:**

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**Office Hours:** If you wish to discuss course-related issues, please schedule an appointment with one of the instructors by email.

**Lecture Time & Room:** Tuesdays and Thursdays from 12:30 pm to 1:50 pm in CAB 357 which is located in the Central Academic Building (3<sup>rd</sup> floor). *If the class size is <10 we will consolidate to a single class day (Tuesdays) and meet for 3 hours and move to a different room in the Biosci Building (exact times can be discussed and adjusted as necessary). If the class size is >10 we will likely split the class into 2 groups in the second week of the term and meet separately on Tuesdays and Thursdays in CAB 357.*

**eClass site:** <https://eclass.srv.ualberta.ca>

### **Course Objectives:**

The purpose of this course is to cap the Bioinformatics Program with a project course in which the students get experience in a) working in groups on projects, b) working on problems of current interest in bioinformatics and c) finding and implementing state-of-the-art approaches to answering significant questions in bioinformatics.

### **Course Description:**

Bioinf 401 is a project-based course with no formal labs or lectures. Generally students are expected to work alone or in pairs to complete a defined bioinformatics software project. The first class will be devoted to outlining a set of “current” or “interesting” bioinformatics problems or projects that the instructor has identified that are appropriate for the project component of the course. Students are welcome to suggest their own projects. Within the first two weeks of the course, students are expected to decide on a project and, if they wish, identify a partner (or partners) to work with on their chosen project. From January to April students will work (on their own time) to complete the project. Each student is expected to make 10-15 min. weekly presentations (Powerpoint or Acrobat) about his or her progress. The progress reports will serve as discussion points for the instructor or students to provide feedback, suggestions or to make appropriate project adjustments. Each student will also do a “mid-term” literature-based seminar (20 minutes each). This is typically held in mid February. These seminars should cover the literature relevant to the execution of the student’s project. Topics or papers must be selected in consultation with the instructor. All students are required to

present a final oral presentation (typically in the first week of April), outlining their project, their progress, their “working” program (or server) and possible future directions. A final written report (15-20 pages) with appropriately documented software and appropriately documents results files is due on the last day of classes or a date determined through a class vote.

### **Evaluation:**

- 1) Class participation/attendance during weekly presentations (10%)
- 2) Quality of weekly presentations/updates (15%)
- 3) Mid-term literature presentation (mid Feb – 20%)
- 4) Final oral presentation (25%)
- 5) Final written project report (30%)

**\*\*Students must attend at least 50% of the course classes/meetings to receive a passing grade.**

The quality, completeness and difficulty of the project itself plays an important role in determining the final grade. While students may work in groups, the grade is an individual grade and is based on individual efforts/contributions. The class is designed to give students lots of practice in planning software projects, working in groups, presenting material and critiquing scientific research. While the course is a fair bit of work, most of those who have taken it have found it to be among their most useful and/or interesting classes.

The grading schema (% grade to letter grade) for Bioin 401 is not completely “set in stone” and will depend on the number of students enrolled, the overall quality of the projects and efforts of the students, which can vary considerably from year to year. As a general rule, the final class average will be close to a B+. Likewise, as a general rule, the following % grade to letter grade scheme is used: 90-100%= A+, 85-89.9% = A, 80-84.9%=A-, 75-79.9%=B+, 70-74.9%=B, 65-69.9%=B-, 60-64.9%=C+, 55-59.9%=C, 50-54.9%=C-, <50%=D

## **Student Responsibilities**

**Academic Integrity:** “The University of Alberta is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the [Code of Student Behaviour](#) and avoid any behaviour which could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University.”

All forms of dishonesty are unacceptable at the University. Any offence will be reported to the Associate Dean of Science who will determine the disciplinary action to be taken. Cheating, plagiarism and misrepresentation of facts are serious offences. Anyone who engages in these practices will receive at minimum a grade of zero for the exam or paper

in question and no opportunity will be given to replace the grade or redistribute the weights. As well, in the Faculty of Science the sanction for **cheating** on any examination will include a **disciplinary failing grade** (no exceptions) and senior students should expect a period of suspension or expulsion from the University of Alberta.

Further information on issues related to cheating and plagiarism can be found at [Academic Integrity](#). Some of the major forms of inappropriate student behaviour are defined in the [Code of Student Behaviour](#):

### **30.3.2 Inappropriate Academic Behaviour**

30.3.2(1) **Plagiarism:** No Student shall submit the words, ideas, images or data of another person as the Student's own in any academic writing, essay, thesis, project, assignment, presentation or poster in a course or program of study.

30.3.2(2) **Cheating:** 30.3.2(2)a No Student shall in the course of an examination or other similar activity, obtain or attempt to obtain information from another Student or other unauthorized source, give or attempt to give information to another Student, or use, attempt to use or possess for the purposes of use any unauthorized material.

30.3.2(2)b No Student shall represent or attempt to represent him or herself as another or have or attempt to have himself or herself represented by another in the taking of an examination, preparation of a paper or other similar activity. See also misrepresentation in 30.3.6(4).

30.3.2(2)c No Student shall represent another's substantial editorial or compositional assistance on an assignment as the Student's own work.

30.3.2(2)d No Student shall submit in any course or program of study, without the written approval of the course Instructor, all or a substantial portion of any academic writing, essay, thesis, research report, project, assignment, presentation or poster for which credit has previously been obtained by the Student or which has been or is being submitted by the Student in another course or program of study in the University or elsewhere.

30.3.2(2)e No Student shall submit in any course or program of study any academic writing, essay, thesis, report, project, assignment, presentation or poster containing a statement of fact known by the Student to be false or a reference to a source the Student knows to contain fabricated claims (unless acknowledged by the Student), or a fabricated reference to a source.

**30.3.2(3) Misuse of Confidential Materials:** No Student shall procure, distribute, or receive any confidential academic material such as pending examinations, laboratory results or the contents thereof from any source without prior and express consent of the Instructor.

30.3.6(4) **Misrepresentation of Facts:** No Student shall misrepresent pertinent facts to any member of the University community for the purpose of obtaining academic or other advantage. See also 30.3.2(2) b, c, d and e.

30.3.6(5) **Participation in an Offence:** No Student shall counsel or encourage or knowingly aid or assist, directly or indirectly, another person in the commission of any offence under this Code.

**Cell Phones:** As a courtesy to others, cell phones must be turned to silent mode during lectures. Cell phones and other electronic devices are not permitted during exams, and must be either left at the front of the room or turned off and securely stowed inside a bag out of reach.

**Recording and/or Distribution of Course Materials:** Audio or video recording, digital or otherwise, of lectures, labs, seminars or any other teaching environment by students is allowed only with the prior written consent of the instructor or as a part of an approved accommodation plan. Student or instructor content, digital or otherwise, created and/or used within the context of the course is to be used solely for personal study, and is not to be used or distributed for any other purpose without prior written consent from the content author(s).

## **Additional Resources**

**Students Eligible For Accessibility-Related Accommodations (students registered with Accessibility Resources - AR):** Students who require accommodation in this course due to a disability are advised to discuss their needs with Accessibility Resources. Eligible students have both rights and responsibilities with regard to accessibility-related accommodations. Consequently, scheduling exam accommodations in accordance with AR deadlines and procedures is essential. Please note adherence to procedures and deadlines is required for U of A to provide accommodations. Contact [Accessibility Resources](#) for further information.

**Academic Success Centre:** Students who require additional help in developing strategies for better time management, study skills or examination skills should contact the [Academic Success Centre](#) (1-80 Students' Union Building).

**Disclaimer:** Any typographical errors in this Course Outline are subject to change and will be announced in class. The date of the final examination is set by the Registrar.

Policy about course outlines can be found in [Course Requirements, Evaluation Procedures and Grading](#) of the University Calendar.