Department of Computing Science

805 TRU Way
Kamloops, BC
V2C 0C8, Canada

COMP 4980-03
Fall 2020

COMP 4980: Introduction to Bioinformatics

Course Project Description

This course requires completion of a single team project (1 to 2 students) which has several marked deliverables throughout the last a few weeks of the term. The goal is to provide students with practical experience in researching, designing, implementing, and evaluating research topics in the field of bioinformatics. Students will participate in the same team for the duration of the project. The project topic must be relevant to bioinformatics, chosen by the student and approved by the instructor.

Grading Scheme and Schedule

There will be several deliverables of this project. Requirements and marking details of each part will be discussed in details in the next subsections. The weights and deadlines of the three parts are as follows:

Deliverable	Due date	Weight
Choice of Project Topic (send to instructor)	Oct 28	
Proposal	Nov 4	4%
Showcase / Presentation	Week 12 and 13	7%
Participation on Q&A	Dec 6	3%
Two-page Research Paper	Dec 9	6%
Total of the project		20%

Note: before you start working on the project, please make sure that your choice of project topic is approved by the instructor.

Milestone 1: Project Proposal

Write a document of no more than 3 pages of single spaced 12 point text, with 1″ margins, including a cover page. Up to 2 additional pages may be added at the end of the text for figures and diagrams.

Your proposal should have the following sections:

1. Cover page: project title, the name of your group (i.e. Team Awesome), the members' names and student IDs.

2. Topic description and motivations (why is this topic important?).

3. Objectives and research methods (research questions to answer; your goals; suggested improvements; how you intend to answer the questions / achieve the goals).

4. Timeline and plan for each objective, along with workload distribution between team members.

5. References.

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Submission

An electronic copy of your proposal must be submitted in <u>PDF format</u> by the due date, as listed on the grading and schedule section. Only one deliverable document per team should be submitted. Choose one team member to submit the electronic copy of the proposal. Use moodle for submission. Put your team name in the filename (e.g. teamAwesome_showcase).

Milestone 1 Marking Criteria

You will be marked on the basis of:

- completion of required items,

- insight into problem definition and statement of goals,

- maturity of the work (i.e., clearly thought through rather than "tossed together" ideas),

- quality of writing, clarity of exposition, and usefulness of supporting figures (if needed),

- penalties will be assessed for not adhering to the proposal submission criteria (e.g., page length, font size, components, file format, etc.).

- Late submissions will receive no credit.

Milestone 2: Project Showcase

Each team will, as a group, provide a **short video** and upload it to Moodle during the last two weeks of course (week 12 and 13) as a showcase of the project. Detailed schedule for each group will be posted later. The video is limited to 5 minutes, and preferred format is .mp4. Put your team name in the filename (e.g. teamAwesome_showcase).

Coverage

- Project overview (motivation, problem being addressed and other objectives).

- Introduction to the project topic and the research questions you proposed.

- Demonstrate how you used computer science and bioinformatics skills to answer the questions.

- Overview of results.

- What you learn from this project. What can be the future work of the project.

    Tips: Use the C.R.A.P. principles to help you design an excellent presentation (https://www.instructables.com/id/CRAP-principles/).

Submission

- Presentation slides or notes, if you have one in your showcase video.

- Showcase video.

Upload your documents on Moodle according to your assigned schedule (will be determined later).

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Milestone 2 Marking Criteria

You will be marked both on style and content of the showcase. The marking criteria for the presentation include:

- communication skills

- organization and preparation

- presentation layout and visuals

- adherence to the topic in the proposal

- clarity of your work

Milestone 3: Participation on Q&A

Students are expected to watch all other teams' showcase videos. After watching, you will need **ask questions to four teams/projects** (at least, if you have more questions and want to ask, feel free to do so). For the rest teams that you don't have any question, you will need post a comment on their videos as your participation. Post on Moodle site under each team's showcase video.

Each team will need to address all received questions at their best knowledge. Reply each question on Moodle as well.

Milestone 4: Two-page Research Paper

Each team will, as a group, write a two-page research paper as the final report of the project. The paper must follow the ACM SIG Proceedings Templates. The templates are available in both Word and LaTex. You are encouraged to use LaTex to write the paper (bonus mark will be given if you use Latex to write the paper). Here is a tutorial to get started with LaTex using free online editor Overleaf: https://www.overleaf.com/learn/latex/Tutorials

Your paper should have the following sections:

1. Abstract.

2. Introduction: the overall purpose and motivation (why is the topic important?)

3. Methodology: research methods (for example: how you conduct the research to answer the questions, implementation of specific bioinformatics tools).

4. Research results: body of the report – this will correspond to your research presentation.

5. Conclusions: comments on your methods, approach, contribution of this work.

6. References: at least 5 sources from books, research articles, and web.

For the groups of two students, a list of responsibilities (for example: student 1 – part 1-3, student 2 –references, part 4-5) is required to submit along with the paper.

Submission

An electronic copy of your paper must be submitted in PDF format by the due date, as listed on the grading and schedule section. Only one deliverable document per team should be submitted. Choose one team member to submit the electronic copy of the paper. Use moodle for submission. Put your team name in the filename (e.g. teamAwesome_showcase).

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Milestone 4 Marking Criteria

You will be marked on the basis of:

- Completion of required items.

- Insight into problem definition and statement of goals.

- Maturity, amount and quality of the work.

- Quality of writing, clarity of exposition, and usefulness of supporting figures.

- Penalties will be assessed for not adhering to the ACM SIG Proceedings format.

- Late submissions will receive no credit.