COSC 419C Learning Analytics

Instructor: Bowen Hui (SCI 257), bowen.hui@ubc.ca
Duration: Winter 2019 term 2, 3 credits
Lectures: W/F 2:00-3:30 in ART 210
Office hours: Thursdays 5-6pm or by appointment

Course Format
The course will be delivered via in-class lectures complemented by out-of-class readings, programming and written assignments, and a course project. Course content will be posted online. Midterm break and other calendar dates can be found at http://okanagan.students.ubc.ca/calendar/

Course Overview, Content and Objectives
The course will introduce students to principles of machine learning as applied to the education domain. Specifically, the topics may include personalized and adaptive learning, learner modeling, probabilistic inference, data gathering and experimentation, natural language processing, graph manipulations, clustering, and recommendations. The objective of this course is to initiate students to a practical side of machine learning and the use of analytics to solve real-world problems.

Learning Outcomes
Upon completion of this course, students will be able to:
- Appreciate design issues in educational software
- Gain hands-on experience in building existing algorithms and working with real-world data
- Design data collection experiments for specific analytics needs
- Integrate third-party data to extrapolate pedagogical implications
- Promote their candidacy for employment opportunities in the field of data analytics

Evaluation Criteria and Grading

Assignments	Between 40 - 60%	(default: 50%)
Quizzes & Readings	Between 10 - 30%	(default: 20%)
Project	Between 20 - 40%	(default: 30%)

The specific percentages will be chosen by the student and submitted to the instructor no later than April 10, 2020. If these preferences are not submitted in time, the default percentages will be used.

Late Policy
Assignments and project can be submitted up to 3 calendar days late. Thereafter, your work will receive a mark of 0. For each day that is late, you will receive a penalty of -5% of the assignment mark. For example, if A1 is one day late, you will get at most 95/100% for it.

There is no late tolerance for quizzes and presentations. Unless a medical note is provided, missed quizzes and presentations that are not delivered on the scheduled day and time will receive a mark of 0.

Passing Criteria
In order to pass the course:
- Students MUST achieve a passing grade in the assignments component.
- Students MUST achieve a passing grade in the quizzes component.
- Students MUST achieve a passing grade in the project component.

Failure to satisfy *all* of the above clauses will result in a maximum of 45% for the course.

Expectations

- Attend **all** classes and prepare before attending class.
- Complete the assigned readings **before** the lecture.
- Learn the material in the course and undertake sufficient effort to produce all the programming assignments and quality projects.
- Enjoy attending class and feel free to participate according to your personality. Feel free to ask questions by raising your hand or speaking out at appropriate times.
- Actively participate in class discussions, questions, and problem solving exercises.
- **I want all students to pass the course, receive a good grade, produce interesting projects, and feel the course was beneficial.**
- For this course, it is expected that you will spend *at least six hours per week* on out-of-class preparation.

Tentative Course Schedule and Required Readings

See the updated schedule on the course website.

Plagiarism and Collaboration

The "default" assumption is that students will work on assignments independently. Students who complete assignments with the aid of collaborators or other sources (e.g. other textbooks) must:

(i) acknowledge this fact (including the name(s) of other sources) at the start of their homework submission (see above),
(ii) produce an independent write-up (copied submissions are not permitted),
(iii) be prepared to explain their solutions in further detail, if asked, and
(iv) be prepared to have the assignment grade adjusted accordingly.

Collaborating in groups of size greater than four is not permitted.

Plagiarism (the submission of work of another person as your own) and other anti-intellectual behaviour will not be tolerated. Your attention is directed to the "Student Discipline" section of the University Calendar as well as the UBC-V computer science Department Policy on "Plagiarism and Collaboration", available through the Undergraduate Web Page at http://www.cs.ubc.ca/our-department/administration/policies/collaboration. In particular, note that **it is not acceptable to make a solution available as an aid to others**.

Cooperation vs. Cheating

Working with others on assignments is a good way to learn the material and we encourage it. However, there are limits to the degree of cooperation that we will permit. Any level of cooperation beyond what is permitted is considered cheating.

When working on programming assignments, you must work only with others whose understanding of the material is approximately equal to yours. In this situation, working together to find a good approach for solving a programming problem is cooperation; listening while someone dictates a solution is cheating. You must limit collaboration to a high-level discussion of solution strategies, and stop short of actually writing down a group answer. Anything that you hand in, whether it is a written problem or a computer program, must be written by you, from scratch, in your own words. If you base your solution on any other written solution, you are cheating.
There will be random audit of assignment solutions through internet-based source code search engine: Any assignment found to be significantly similar to a publicly available source code without the proper

acknowledgment will trigger an investigation for academic dishonesty in addition to any copyright violation.

If you have any doubt that an action you are considering might be construed, by anyone, as cheating, DON'T DO IT. Ask for permission first.

Grievances and Complaints Procedures
A student who has a complaint related to this course should follow the procedures summarized below:
- The student should attempt to resolve the matter with the instructor first. Students may talk first to someone other than the instructor if they do not feel, for whatever reason, that they can directly approach the instructor.
- If the complaint is not resolved to the student's satisfaction, the student should go to the departmental chair John Braun at SCI 388, 807-8032.

Academic Integrity
The academic enterprise is founded on honesty, civility, and integrity. As members of this enterprise, all students are expected to know, understand, and follow the codes of conduct regarding academic integrity. At the most basic level, this means submitting only original work done by you and acknowledging all sources of information or ideas and attributing them to others as required. This also means you should not cheat, copy, or mislead others about what is your work. Violations of academic integrity (i.e., misconduct) lead to the breakdown of the academic enterprise, and therefore serious consequences arise and harsh sanctions are imposed. **For example, incidences of plagiarism or cheating usually result in a failing grade or mark of zero on the assignment or in the course.** Careful records are kept to monitor and prevent recidivism.

A more detailed description of academic integrity, including the University's policies and procedures, may be found in the Academic Calendar at
http://okanagan.students.ubc.ca/calendar/index.cfm?tree=3,54,111,0.

Disability Assistance

If you require disability-related accommodations to meet the course objectives, please contact the Diversity Advisor of Disability Resources located in the University Centre, Room 227. For more information about Disability Resources or academic accommodations, please visit the website at : http://students.ok.ubc.ca/drc/welcome.html

Equity, Human Rights, Discrimination and Harrassment
UBC Okanagan is a place where every student, staff and faculty member should be able to study and work in an environment that isfree from human rights based discrimination and harassment.If you require assistance related to an issue of equity, discrimination or harassment, please contact the Equity Office, your administrative head of unit, and/or your unit's equity representative.

UBC Okanagan Equity Advisor: ph. 250-807-9291; email equity.ubco@ubc.ca
Web: www.ubc.ca/okanagan/equity

Health & Wellness
SAFEWALK
Don't want to walk alone at night? Not too sure how to get somewhere on campus? Call Safewalk at
250-807-8076. For more information, see:
http://www.ubc.ca/okanagan/students/campuslife/safewalk.html