THE UNIVERSITY OF BRITISH COLUMBIA
Department of Computer Science, Mathematics, Physics and Statistics
Okanagan Campus

COSC 322 - Introduction to Artificial Intelligence

(W2020/2021 – Term 2)

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Course Information

Textbook: S. Russell and P. Norvig, Artificial Intelligence: A Modern Approach, 2021 (4th Edition)
Classroom Schedule: M (14:30 – 15:30) W (14:00 – 15::00) F (9:30 – 10:30)
Location: Zoom Meeting (ID: 66193488396, Passcode: 964782)
Office Hours (on Zoom): 0.5 hour following each lecture

Software and Communication Tools: Lectures and seminars will be delivered online and synchronously, using the video communications platform Zoom. In order to fully engage in the course activities, students are required to have a laptop or desktop computer and a stable Internet connection. It is important to have a Zoom account and the Zoom Client installed on your computer. For more information on available tools, students are encouraged to check out this link: https://keeplearning.ubc.ca/setting-up/

Virtual Access to Campus Labs: Instructions at https://knowit.ok.ubc.ca/article/how-to-remotely-access-a-ubc-okanagan-lab-computer-using-remotelabs-1064.html

Calendar Course Descriptions

COSC 322 (3) Introduction to Artificial Intelligence
AI and intelligent agents; state space search; game playing agents; logic and knowledge-based agents; constraint programming; planning; reasoning and decision making under uncertainty; machine learning; natural language understanding. Credit will be granted for only one of COSC 322 or COSC 522. [3-2-0] ***Prerequisite:*** All of COSC 221, COSC 222.

Objectives

This course introduces students to the theoretical aspects and programming techniques for building artificial intelligence systems, i.e., software agents that act "rationally" based on available information and computing resources. We will be focusing on search-based agents, logic-based agents, agents that make decisions under uncertain environment, and agents that learn from observations.

Upon successful completion of this course, students are expected to (1) obtain a thorough understanding about the fundamental problems and basic techniques in artificial intelligence; (2) acquire significant AI programming skills; and (3) have the ability to apply the discussed techniques in practice. Topics to be covered include (but not limited to) heuristic state-space search; adversarial search and game playing; constraint programming; logic inferences, knowledge representation, and automatic planning; and basics of probabilistic reasoning and machine learning.

Evaluations

Overall grades will be the (weighted) average percentage of those achieved in the evaluation component listed below. To pass the class, a student needs to have an overall grade of 50% or higher. The final grade will be assigned according to the standardized grading system outlined in the UBC Okanagan Calendar.

1. Individual Assignments (15%): 2-3 programming and/or written assignments
2. Team Activities (50%)
    - Group Assignment (10%): 4 – 5 in-class/lab written exercises
    - Reading Project (10%): Article from a suggested list
    - Programming Project (30%): Software Player for the Game of the Amazons
    - Group of three - five.
5. Final Exam (35%)

Submission and Late Policy

You are required to submit a **hard-copy** of your solution in class on the due date. Late submissions are acceptable with the following penalty: 1 to 24 hours late (20% mark deduction); 25 to 48 hours late (40% mark deduction); more than 48 hours: no mark. All appeals to marks, except to that of the final exam, must be registered with the instructor before the scheduled date of the final examination. Students who miss a class examination or assignment due to short-term illness or other legitimate reasons should contact the instructor immediately to make an alternate arrangement.

Collaboration Policy

The assignments are designed to help students solidify their understanding of the course material. You are encouraged to collaborate with your peers on the assignment problems; even more desirable is to form your own study group of two to three people. However, **the write-up has to be in your own words**. You are also required to identify your collaborators and acknowledge any help from the TA, the instructor, and the Web. You should also be able to explain to the instructor the details of any solution you have submitted.

Note: Any requests for changes to final exams must be sent to the office of the Associate Dean of Students (bsasdeansoffice.ubco@ubc.ca).

Important Dates

Monday, 11 January 2021: First Class
Friday, 22 January 2021: Last day for early withdrawal
Monday, 15 February 2021: Family Day, no class
Wednesday, 17 February 2021: Midterm Break, no class
Friday, 19 February 2021: Midterm Break, no class
Friday, 26 March 2021: Last day for late withdrawal
Friday, 2 April 2021: Good Friday, no class
Monday, 5 April 2021: Easter Monday, no class
Monday, 12 April 2021: Last class

Grading Practices

Faculties, departments, and schools reserve the right to scale grades in order to maintain equity among sections and conformity to University, faculty, department, or school norms. Students should therefore note that an unofficial grade given by an instructor might be changed by the faculty, department, or school. Grades are not official until they appear on a student's academic record.

http://www.calendar.ubc.ca/okanagan/index.cfm?tree=3,41,90,1014

Final Examinations

The examination period for **W2020 T-2 is April 16 - 29 2021**. Except in the case of examination clashes and hardships (three or more formal examinations scheduled within a 24-hour period) or unforeseen events, students will be permitted to apply for out-of-time final examinations only if they are representing the University, the province, or the country in a competition or performance; serving in the Canadian military; observing a religious rite; working to support themselves or their family; or caring for a family member. Unforeseen events include (but may not be limited to) the following: ill health or other personal challenges that arise during a term and changes in the requirements of an ongoing job.
Further information on **Academic Concession** can be found under **Policies and Regulation in the *Okanagan Academic Calendar*** http://www.calendar.ubc.ca/okanagan/index.cfm?tree=3,48,0,0

Writing Examinations in a Virtual Environment
The examinations in this course are all closed-book. During the exam, you are NOT permitted to access any of the course materials, including your notes, to use any search engines or other programs except for the program required to complete the exam, and to communicate with anyone about the exam. Students will be asked to acknowledge the academic integrity pledge prior to completing the examination. **The exams and tests will be invigilated using Zoom --- this means that you are required to join the Zoom session (with an identifiable login name) and keep your camera on all the time during the scheduled examination time.**

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 may result in a mark of zero on the assignment or exam and more serious consequences may apply if the matter is referred to the President's Advisory Committee on Student Discipline. Careful records are kept in order to monitor and prevent recurrences.

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.

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. If you provide your solution for others to use, you are also cheating.

Copyright Disclaimer

Diagrams and figures included in lecture presentations adhere to Copyright Guidelines for UBC Faculty, Staff and Students http://copyright.ubc.ca/requirements/copyright-guidelines/ and UBC Fair Dealing Requirements for Faculty and Staff http://copyright.ubc.ca/requirements/fair-dealing/. Some of these figures and images are subject to copyright and will not be posted to ***Canvas.*** All material uploaded to ***Canvas*** that contain diagrams and figures are used with permission of the publisher; are in the public domain; are licensed by Creative Commons; meet the permitted terms of use of UBC's library license agreements for electronic items; and/or adhere to the UBC Fair Dealing Requirements for Faculty and Staff. Access to the ***Canvas*** course site is limited to students currently registered in this course. Under no circumstance are students permitted to provide any other person with means to access this material. Anyone violating these restrictions may be subject to legal action. Permission to electronically record any course materials must be granted by the instructor. Distribution of this material to a third party is forbidden.

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 e-mail the Associate Head, Dr. Yves Lucet at yves.lucet@ubc.ca or the Department Head, Dr. John Braun at john.braun@ubc.ca

Student Service Resources

Disability Assistance

The Disability Resource Centre ensures educational equity for students with disabilities, injuries or illness. If you are disabled, have an injury or illness and require academic accommodations to meet the course objectives, e-mail us or visit our website for more information.
Web: http://students.ok.ubc.ca/drc/welcome.html **E-mail** DRC at: drc.questions@ubc.ca

Equity, Human Rights, Discrimination and Harassment

UBC Okanagan is a place where every student, staff and faculty member should be able to study and work in an environment that is free 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**
Web: https://equity.ok.ubc.ca/ **E-mail:** equity.ubco@ubc.ca

Health & Wellness - UNC 337

At UBC Okanagan health services to students are provided by Health and Wellness. Nurses, physicians and counsellors provide health care and counselling related to physical health, emotional/mental health and sexual/reproductive health concerns. As well, health promotion, education and research activities are provided to the campus community. If you require assistance with your health, please contact Health and Wellness for more information or to book an appointment.
Web: www.students.ok.ubc.ca/health-wellness **Email:** healthwellness.okanagan@ubc.ca

Sexual Violence Prevention and Response Office (SVPRO)

A safe and confidential place for UBC students, staff and faculty who have experienced sexual violence regardless of when or where it took place. Just want to talk? We are here to listen and help you explore your options. We can help you find a safe place to stay, explain your reporting options (UBC or police), accompany you to the hospital, or support you with academic accommodations. You have the right to choose what happens next. We support your decision, whatever you decide. Visit svpro.ok.ubc.ca or call us at 250-807-9640

Independent Investigations Office (IIO)

If you or someone you know has experienced sexual assault or some other form of sexual misconduct by a UBC community member and you want the Independent Investigations Office (IIO) at UBC to investigate, please contact the **IIO**. Investigations are conducted in a trauma informed, confidential and respectful manner in accordance with the principles of procedural fairness. You can report your experience directly to the **IIO by** calling 604-827-2060.
Web: https://investigationsoffice.ubc.ca/ **E-mail:** director.of.investigations@ubc.ca

The Hub

The Student Learning Hub (LIB 237) is your go-to resource for free math, science, writing, and language learning support. The Hub welcomes undergraduate students from all disciplines and year levels to access a range of supports that include **tutoring in math, sciences, languages, and writing, as well as help with study skills and learning strategies**. **Web:** (https://students.ok.ubc.ca/student-learning-hub/) **Ph:** 250-807-9185.

SAFEWALK - Download the UBC SAFE – Okanagan app.
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: https://security.ok.ubc.ca/safewalk/