UNIVERSITY OF GUELPH (Main Campus)
School of Computer Science
Course Outline

Course Code: CIS*3700 **Credits:** 0.5	**Course Title:** Introduction to Intelligent Systems	**Date of Offering:** Winter 2023
Instructor: Kelly Moylan **Office Hours:** Tues/Thur 2:00-3:00 PM	**Office:** Reynolds 2221 **Email**: kmoylan@uoguelph.ca **Office Hours:** MCLN 213A	**TA:** Vaideeshwaran Saravanan saravanv@uoguelph.ca

Calendar Description: This course covers the core topics of Artificial Intelligence, namely: agents and environment, search, knowledge representation, reasoning, and learning. The last three topics are covered using logic as the common formalism for coherence. The course introduces a broad range of basic concepts, terminology, and applications, in addition to providing some specific, widely applicable methodologies. **Prerequisite(s):** (CIS*3750 or CIS*3760), (CIS*2460 or Stat*2040)	**Topics:** • Intelligent agents • Properties of agent environment • Solving problems by uninformed search and heuristic search • Knowledge representation with logic • Inference with model checking, resolution, and chaining • Inductive learning and decision trees • Regression, classification by linear models, gradient descent, and neural networks • Assignments require programming in Java **or** Python.
Lectures: (Jan 9, 2023 - Apr 6, 2023) Tues, Thur 10:00-11:20 AM; MCKN 223	**Labs**: **(Jan 16, 2023 - Apr 3 2023)** Mon 9:00 - 9:500 AM; Online

Text:
S. Russell and P. Norvig, Artificial Intelligence: A Modern Approach, (4th Ed.), Prentice Hall, 2020.

Method of Evaluation:

Course Work	Date	Weight
Assignment 1	**Due:** February 3, 2023	15%
Assignment 2	**Due:** February 24, 2023	15%
Assignment 3	**Due:** March 17, 2023	15%
Assignment 4	**Due:** April 6, 2023	15%
Final Exam	April 22, 2023 : 08:30 - 10:30 AM	40%

A student passes the course if the weighted sum of all components ≥ 50% **AND** earns a grade of ≥ 30% on the final exam

Learning Outcomes

1. Identify key properties of environments for intelligent system applications.
2. Implement uninformed search and A* search.
3. Encode domain knowledge in propositional logic.
4. Implement logic inference by resolution.
5. Understand inference by forward and backward chaining.
6. Understand inductive learning and information measure.
7. Implement decision tree learning.
8. Understand regression, classification by linear models.
9. Understand simple artificial neural networks.

Instructor's Role and Responsibility to Students

The instructor's role is to develop and deliver course material in ways that facilitate learning for a variety of students. Lecture PowerPoint slides will be made available to students on the course website but are not intended to be stand-alone. During lectures, the instructor will expand and explain the content of slides and provide example problems that supplement posted slides. Scheduled classes will be the principal venue to provide information and feedback for exams and assignments.

Students' Learning Responsibilities

Students are expected to take advantage of the learning opportunities provided during lectures and lab sessions. Students, especially those having difficulty with the course content, should also make use of other resources recommended by the instructor. Students who fall behind due to illness, work, or extra-curricular activities are advised to keep the instructor informed as early as possible. This will allow the instructor to recommend extra resources in a timely manner and/or provide consideration if appropriate.

Assignment Submission

Assignment Submission Procedure in the course website should be followed. Assignments should be submitted to CourseLink Dropbox by 11:59 PM on specified due dates. Late submissions are subject to 25% of the total mark per day up to 2 calendar days (grace period). For instance, the latest time to submit an assignment due on a Friday is 11:59 PM on Sunday, with the highest possible mark of 50%.

Re-Grading Policy

For each assignment, a mark report will be posted on CourseLink for each student. Problems in marking should be reported to the instructor (in person or to kmoylan@uoguelph.ca) within 72 hours after receiving the mark report. After 72 hours without a re-grade request, the reported mark will be finalized.

Email Policy

As per university regulations, all students are required to check their e-mail account regularly: e-mail is the official route of communication between the University and its students.

All emails for the instructor should be sent to kmoylan@uoguelph.ca. In particular, mark reports to students will be sent from accounts other than kmoylan@uoguelph.ca. Reporting problems in marking should NOT be sent by replying to the marking reports.

Electronic Recording

The electronic recording of class lectures is expressly forbidden without the prior consent of the instructor. When recordings are permitted they are solely for the use of the authorized student and may not be reproduced, or transmitted to others, without the express written consent of the instructor.

Academic Integrity

The University of Guelph is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards, and must abide by the applicable policies (Section VIII of the Undergraduate Calendar on "Academic Misconduct").

For educational purposes, assignments of this course are to be completed individually. Any utilization of external sources must be done with proper references. Work that shows significant unnatural similarity, or that appears to be copied from unacknowledged sources, will be investigated as potential academic misconduct. "Aiding and abetting" is also a punishable offence, and students must be careful not to help others commit offences by giving out their files or allowing others to access their computer accounts.