Introduction to Intelligent System

Course Outline

GENERAL INFORMATION

Course Code CIS*3700 Section # 1 Term Winter Year 2019

Course Pre-requisite(s)	(CIS*3750 or CIS*3760) (CIS*2460 or STAT*2040)
Lecture schedule	Tuesday, Thursday 2:30- 3:50 pm; Mackinnon 224
Lab schedule	Thursday 1:30PM – 2:20PM; Rozanski Hall 105

Instructor:	Le Nguyen		TA: Qian Wang
Email:	le@uoguelph.ca		E-mail: Qwang10@uoguelph.ca
Office:	Tue, Thu 4:30 – 5:30PM	Reynolds 2206	Time and location

COURSE DESCRIPTION & TOPIC

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.

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 decisions trees
- Regression, classification by linear models, gradient descent, and neural networks
- Assignments require programming in Java

TEXT BOOK

S. Russell and P. Norvig.
Artificial Intelligence: A Modern Approach, (3rd Ed), Prentice Hall, 2010

LEARNING OUTCOMES

1. Identify key properties of environment for intelligent system application
2. Implement uniformed 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

ASSIGNMENTS AND EVALUATIONS

Assessment Item Name	Due Date	Weight
Assignment 1	Friday, February 1, 2019	12%
Assignment 2	Friday, March 15, 2019	12%
Assignment 3	Friday, March 29, 2019	12%
Midterm	Tuesday, March 5, 2019	24%
Final exam	Thursday, April 18, 2019 Time: 7:00 – 9:00 PM	40%
A student passes the course if the weighted sum of all components ≥ 50%		

POLICIES

Academic Integrity

Guelph university values academic integrity. Therefore, all students must understand the meaning and consequences of academic offenses. For more information, refer to Section VIII of the Undergraduate Calendar on “Academic Misconduct”

E-mail Policy

E-mail is one of the official means of communication between Guelph university and its student. It is student’s responsibility to ensure that email is read and acted upon in a timely fashion. Students are required to use Guelph university emails for this course.

Re-Grading Policy

Any problems in marking should be reported to the instructor within 48 hours after receiving the mark. Otherwise, the mark will be finalized.

Assignment Policy

All assignments of this course are to be completed individually.

Assignment Submission

All assignments should be submitted to CourseLink Dropbox by 11:50PM on the due date. Late submissions are subject to 20% deduction of the total mark per day up to 2 days.