COMP-4475: Topics in Artificial Intelligence (Winter 2023, Lakehead University)

Course Information Sheet

Professor: **Xing Tan (Ph.D.)**
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TA: **TBD**

1 TIMES

	Day	Time	Location
1	Monday	10am - 11:30am	Lecture (OA2017/Zoom)
2	Wednesday	10am - 11:30am	Lecture (OA2017/Zoom)

2 General Course Description

Introduction to artificial intelligence (AI) and its applications. Candidate topics may include several of the following: logic and reasoning, AI languages, state-space search, heuristics, constraints-satisfaction problem, game-problem solving, planning, agent and multi-agents programming, neural networks, genetic algorithms and reasoning about uncertainty.

3 Zoom Online Lectures

Online live sessions would be run at the time starting from 10am using Zoom integrated in the course website.

4 Grading

- **Assignments 15%**
  - Assignment One (Due date Feb. 8th, 5%, before class)
  - Assignment Two (Due date Mar. 8th, 5%, before class)
  - Assignment Three (Due date Apr. 5th, 5%, before class)
- **Midterm 35% (Online, Date: Feb. 15th)**
- **Final 50% (Online, Date: TBD)**

5 Late Policy

Late assignments will NOT be accepted. A make-up midterm will NOT be provided. If you miss the assignments or midterm for medical reasons (with valid document provided), the weight will be added to the weight of the final exam. The final exam is to be held during the university examination period. Exact date is to be announced. It is your responsibility writing the exam at the announced time.

6 Major References

- Brachman and Levesque. *Knowledge Representation and Reasoning*, Morgan Kaufmann, 2004.
- Russell and Norvig. *Artificial Intelligence: A Modern Approach*, 4^{th} Edition, Pearson, 2021.

7 Course Topics (Tentative)

1. Introduction
2. Search
3. Logic and Automated Reasoning
4. Logic Programming
5. Reasoning about Time, Actions
6. AI Planning
7. Midterm (**Feb. 15th**)
8. Reasoning about Uncertainties
9. Defaults
10. Abductive Diagnosis
11. Rule-based Systems
12. Structurally-Described Systems

8 Course Policies

Students are referred to the departmental course pages with official policies and directions regarding exam deferrals, special accommodations etc.

9 On Academic Honesty

The instructor has been requested to employ a variety of measures, tools and heuristics to identify possible breaches of academic integrity, and to immediately bring identified cases to the attention of the department's administration for further investigation and consideration of the full range of disciplinary measures. Possible penalties for violating academic honesty policies may include zero on the test or assignment without an option to rewrite, failure in the course, a permanent grade of record, and/or a transcript notation. Subsequent violations may result in suspension or expulsion from the University. By taking this course and participating in its evaluation activities, you confirm that you have read and understood the above and that you will at all times adhere to the academic honesty rules and policies laid by the instructor, the Department and the University Senate's Academic Integrity Policy.