PURDUE GRADUATE COURSE
COURSE SYLLABUS
ECE 57000 - Artificial Intelligence

Course Title:	**ECE 57000 - Artificial Intelligence**
Credit and contact hours:	(3 cr.)
Course description:	*The course covers the application of Artificial Intelligence techniques and algorithms for problem solving. Students will learn to apply different machine learning approaches to solve real life problems related to searching, parsing, identification, prediction, clustering, feature selection, etc... The concepts of reasoning an inference will be discussed and used as an approach to reason about difficult problems and derive suitable algorithms for these problems.* *Students are expected to discuss, critique and extend current AI research papers as well as implement the algorithms discussed in class using their programming language of choice.*
Prerequisite or corequisite:	*ECE 30200 and 35900 (or graduate standing)*
Prerequisites by topic:	none
Textbook:	*Artificial Intelligence: A Modern Approach, 4th Edition, Stuart Russell & Peter Norvig, Pearson Education Inc.*
Course Instructor:	Zina Ben Miled
Outcomes:	*Upon successful completion of the course, students should be able to* • *design and implement deterministic, heuristic and optimization algorithms [1]* • *represent and analyse knowledge [6]* • *use inference and reasoning to solve real-life problems [7]* • *develop and implement machine learning approaches [1]* • *apply machine learning approaches to different applications and contexts. [6,7]*
Topics:	**Course Outline:** - Agents (3 Lectures) - Solving Problems by Searching (5 Lectures) - Game Playing (2 Lectures) - Constraint Satisfaction (2 Lectures) - Logical Agents (2 lectures) - First Order Logic and Inference (2 Lectures) - Uncertainty (2 Lectures) - Bayesian Networks (2 Lectures) - Learning from Examples and Statistical learning (4 Lectures) - Neural Networks (2 Lectures) - Emerging topics (2 Lectures) - Midterms (2 Lectures)
Computer usage:	Yes
Laboratory projects:	None

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Evaluation methods:	*There will be two midterms and a final exam. Students will also complete a project that will be assigned in the form of sub-projects throughout the semester.* *Mid-term (2): 40 %* *Project (s): 35%* *Final-exam: 25 %*
Prepared by:	Zina Ben Miled
Date:	**12/16/2021**