BOSTON UNIVERSITY
METROPOLITAN COLLEGE
COMPUTER SCIENCE DEPARTMENT

MET CS 664 ARTIFICIAL INTELLIGENCE

Course Overview

Artificial Intelligence provides the theoretical foundations of the exciting, rapidly expending area of computer science and is a must for the successful information technologist

Prerequisites

MET CS 248 Discrete Mathematics and MET CS 341 or MET CS 342 Data Structures or instructor's consent

Learning Objectives

By the end of this course the student will understand motivation, mechanism, and potential of Artificial Intelligence techniques, and will be ready to apply AI techniques to the practice.

Textbook Stuart Russell, Peter Norvig, "Artificial Intelligence: Modern Approach," 3rd Ed, Pearson, 2010, ISBN-13: 978-0-13-604259-4.

With some Problems from

Ben Coppin Artificial Intelligence Illuminated
1rd Ed., John & Bartlett Publishers, 2004, ISBN: 0-7637-3230-3

Evaluation and Grading

There will be two exams. If any grading criteria event will be missed it will be the responsibility of the student to arrange a mutually agreeable schedule for completion of work.

Grades will be based on:

Class participation	10%
Midterm Exam	50%
Final Exam	40%

Letter Grade:

94 ≤ G:	A	77 ≤ G < 80:	C+
90 ≤ G < 94:	A-	73 ≤ G < 77:	C
87 ≤ G < 90:	B+	70 ≤ G < 73:	C-
83 ≤ G < 87:	B	60<G<70:	D

Assignment

About six homework will be assigned. The number of assignments may change according to actual progress of the class.
Solutions will be discussed in class when graded papers are returned.

Academic Honesty

The course is governed by the Academic Conduct Committee policies regarding plagiarism (any attempt to represent the work of another person as one's own). This includes copying (even with modifications) of a program or segment of code. You can discuss general ideas with other people, but the work you submit must be your own. Collaboration is not permitted

Instructor Information

Dr. Alexander Belyaev
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Boston University, 808 Commonwealth Ave Room 250
Boston, MA 02215
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Office Hours: After each class meeting

Classes are scheduled at

Room MCS B33

Schedule of Classes

Date	Subject	Chapter
4-Sep	Welcome, Administrative Issues, Artificial Intelligence – Foundations, History, Introduction, State of the Art	1
11-Sep	Intelligent Agents, Solving problems by searching. Rationality, Search Agents, Heuristics	2,3
18-Sep	More Searching, Adversarial search, Local Search, Unknown environment, Games, Stochastic Games	4,5
25-Sep	Satisfying Constraints – Defining Constraint, Propagation, Backtracking, Local Search	6
2-Oct	Logical Agents – Knowledge Based Agents, Propositional Logic	7
9-Oct	**Class suspended** (substitute Monday class)	
16-Oct	First Order Logic – Representation, Syntax & Semantics, Usage	8
23-Oct	Inference in First Order Logic – Propositional vs. FOL, Unification, Chaining, Resolution	9
30-Oct	Classical Planning – Definition, Algorithms, Graphs, Planning Analysis	10
6-Nov	Quantify Uncertainty – Acting Under Uncertainty, Basic Probability, Inference, Bayes Rule	13
13-Nov	Learning Probabilistic Methods – Statistical Learning, Complete Data, Hidden Variable	18
20-Nov	Learning from Example - Forms, Supervised, Decision Trees, Evaluating Hypothesis, Neural networks	20
27-Nov	Natural Language Processing, Machine Translation. Speech recognition	22,23
4-Dec	Deep Machine Learning	Notes
11-Dec	**Presentation. Exam Review**	
18-Dec	**Finals**	

NOTE: Syllabus is subject to change as we go

Communication

- All official announcements will be made in the class.
- All assignments will be posted on the class web page.
- **Important:** The primary method of communication is through in-class announcements. So, if you miss a class you need to talk to a friend in the class or contact me to find out whether there was any important announcement.