



Lincoln University

BA 355 – Application of Artificial Intelligence in Modern Information Systems

COURSE SYLLABUS

Spring 2020

Instructor: Prof. Sergey K. Aityan, PhD, DSc
Lecture Schedule: Monday, 3:30 PM – 6:15 PM
Credit: 3 units (45 lecture hours)
Level: Mastery 2 (M2)
Office Hours: Monday, 11:45 AM – 12:30 PM
Wednesday, 11:30 AM – 12:15 PM
Students are advised to schedule appointments by signing their names on the appointment list which is located on the information board next to the professor's office that will ensure exact appointment time without waiting.
e-mail: aityan@lincolnuca.edu
☎: (510) 628-8016

**Assistant to the
Instructor:** TBD

Textbook: **1. Main Textbook:**
Stephen Lucci and Danny Kopec (2015)
Artificial Intelligence in the 21st Century (Computer Science) 2nd
Edition
Publisher: Mercury Learning & Information; 2 edition, 615 pages
ISBN-10: 1942270003
ISBN-13: 978-1942270003
*** previous editions of this book are okay too ***

Last Revision: January 5, 2020

CATALOG DESCRIPTION

The course focuses on important areas of information systems not covered by the regularly offered courses. A specific topic for it is chosen by the instructor and announced in the syllabus. (3 units)

Prerequisites: Instructor's permission and BA 160 or BA 350

COURSE OBJECTIVES

- To introduce students to the basic concepts of Artificial Intelligence (AI), its major challenges and strategies in modern economy.
- To introduce students to a variety of AI and directions.

- To introduce students to strategic and tactical aspects of AI in the modern economy
- To introduce students to technical and social challenges of AI

PROCEDURES AND METHODOLOGY

Lecture method is used in combination with a supervised business case study. The emphasis will be on learning by doing. Every student must participate in an intensive classroom activity.

COURSE PROJECT

Every student must complete and submit a course project. The project includes an idea of an application of AI in information technology, brief specifications, business model, and implementation strategy.

ATTENDANCE

Students are expected to attend each class session. If you cannot attend a class due to a valid reason, please notify the instructor prior to the class.

EXAMS

Both, midterm and final exams are structured as written essay to answer the given questions. Each exam includes six questions. The essay must be written clearly and easy to read, structurally with clear logical presentation of the answers. Graphs, charts, tables, and other supporting illustrations are required if needed. Examples to illustrate the answers are required.

Exams will cover all assigned chapters, any additional readings or supplementary materials covered in class. The final exam is comprehensive, i.e. includes the whole course. The exams are neither “open book” nor “open notes.”

Cheating in exam results in immediate termination of the exam, grade “F” with ZERO points, and report to the dean.

The instructor reserves the right to replace the written exam with a verbal exam if finds appropriate.

GRADING AND SCORING

All activities will be graded according to the points as shown below.

Grade	A	A-	B+	B	B-	C+	C	C-	D+	D	F
Points	94-100	90-93	87-89	83-86	80-82	77-79	73-76	70-72	67-69	60-66	0-59

In exams every answer is graded by points from 0 to 100 and the total points for an exam are calculated as the average of the points received for all answers in the exam.

The final grade for the course will be given as the total weighted score for all activities according to the percentage shown in the table below.

Activity	Time	Percent
Quizzes, home tasks, and classroom activities	Every week	20%
Course project		20%
Mid-term exam	In the middle of the course	30%
Final exam	End of the course	30%

If both grades for the midterm and final exams are “F” the term grade for the course is “F” regardless of the grades for the project and classroom activities.

NO MAKE-UP WORK

Assignments are to be completed on time during the course. Late assignments will result in a reduced grade. Mid-term and final exams and group presentations cannot be made up if missed unless there is a documented emergency.

COURSE SCHEDULE

Lectures		Topic	Chapters
#	Date		
1	27-Jan	About the Course Overview of Artificial Intelligence	Ch. 1
2	3-Feb	(a) Uninformed Search	Ch. 2
3	10-Feb	(a) Informed Search (b) Search Using Games	Ch. 3 Ch. 4
	17-Feb	President’s Day – No classes	
4	24-Feb	(a) Logic in Artificial Intelligence (b) Knowledge Representation	Ch. 5 Ch. 6
5	2-Mar	Production Systems	Ch. 7
6	9-Mar	(a) Uncertainty in AI (b) Expert Systems	Ch. 8 Ch. 9
7	16-Mar	Midterm Exam	Ch. 1-9
8	23-Mar	Inductive Learning with Decision Tree	Ch. 10
9	30-Mar	Machine Learning with Neural Networks	Ch. 11
10	6-Apr	Search Inspired by Mother Nature	Ch. 12
11	13-Apr	Natural Language Understanding	Ch. 13
12	20-Apr	Automated Planning	Ch. 14
13	27-Apr	Robotics	Ch. 15
14	4-May	Comprehensive Final Exam	Ch. 1-15
15	11-May	Course Project Presentations and Defense	

CHEATING AND PLAGIARISM

Cheating is the actual or attempted practice of fraudulent or deceptive acts for the purpose of improving one's grade or obtaining course credit. Acts of cheating include, but are not limited to, the following:

- (a) plagiarism;
- (b) copying or attempting to copy from others during an examination or on an assignment;
- (c) communicating test information with another person during an examination;
- (d) allowing others to do an assignment or portion of an assignment;
- (e) using a commercial term paper service.

Cheating or plagiarism will result in zero points and letter grade F for an assignment, project, or exam and a report of the incident to the Dean of Students, who may place related documentation in a file. Repeated acts of cheating may result in an F in the course and/or disciplinary action.

LETTERS OF RECOMMENDATION

Letters of recommendation will be provided upon request to students, who have completed all course requirements and received grade “A” for the course.

CENTER FOR TEACHING AND LEARNING

Assignments and projects require students to actively use resources of the library. A detailed guide to business resources of the library as well as the description of Lincoln University approach to information literacy are available at the [Center for Teaching and Learning](http://ctl.lincolnuca.edu) website (ctl.lincolnuca.edu).

OTHER COMMENTS

- Please participate. What you put into the class will determine what you get out of it – and what others get out of it.
- Please come on time. Late arrivals disturb everyone else.
- If you miss a class, you are responsible for getting notes/slide printouts on the material covered from a classmate or the instructor.
- To avoid distracting noise in class, cellular phones must be turned off or the ringing mode silenced.
- Questions and comments during the class are welcome. Do not hesitate to ask questions – do not leave anything unclear for you.

COURSE LEARNING OUTCOMES¹

	Course Outcome	Program LO	Institutional LO	Assessment
1	Students are expected to develop, and exhibit applied and theoretical knowledge in the field of Artificial Intelligence	PLO 1	ILO 1b, ILO 2b ILO 7b	Home tasks, quizzes, midterm/final exam
2	Use theoretical knowledge and advanced problem-solving skills to formulate solutions in the field of Artificial Intelligence	PLO 2	ILO 1b, ILO 2b, ILO 4b	Assignments, case studies, quizzes, midterm/final exam
3	Communicate and present critiques	PLO 3	ILO 2b, ILO 7b,	Case studies
4	Demonstrate autonomy, creativity, and responsibility in managing professional practices	PLO 4	ILO 4b ILO 5b ILO 6b	Course Project

MODIFICATION OF THE SYLLABUS

The instructor reserves the right to modify this syllabus at any time during the semester. Announcements of any changes will be made in a classroom.

¹ Detailed description of learning outcomes and information about the assessment procedure are available at the [Center for Teaching and Learning](http://ctl.lincolnuca.edu) website (ctl.lincolnuca.edu).