Course Syllabus
CAP 4630 - Introduction to Artificial Intelligence

Spring 2018

Course Information

Course Section	11563
Course Dates	01/08/18 - 04/27/18
Class Times	Tue and Thu 6PM - 7:15PM
Class Location	Building 15, Room 1205
Class Website	This class uses Canvas (`http://www.unf.edu/canvas/`)
Tutoring	`http://www.unf.edu/ccec/computing/Facilities/SOC_Computer_Lab___Tutor_Schedule.aspx`

Instructor Information

Instructor	Xudong Liu, Ph.D.
Office	Building 15, Room 3211
Office Hours	Tue and Thu 2pm-4:30pm, and/or by appointment
Phone	(904)620-2554
Email	xudong.liu@unf.edu
Personal Website	`http://www.unf.edu/~xudong.liu/`

Required Textbook

- Stuart Russell and Peter Norvig, **Artificial Intelligence: A Modern Approach**, Third edition, Prentice Hall, 2009, ISBN-10: 0136042597, ISBN-13: 978-0136042594.

It is available in the UNF bookstore, Amazon.com, half.com, and many other web sites that sell text books. Other than this required textbook, the following are the sources helpful to this course:

- Python learning: **MIT Python Course** (`https://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-0001-introduction-to-computer-science-and-programming-in-python-fall-2016/lecture-slides-code/`), and **The Python 2.7 Tutorial**, `https://docs.python.org/2.7/tutorial/index.html`
- Toby Segaran, **Programming Collective Intelligence: Building Smart Web 2.0 Applications**, 1st Edition, O'Reilly Media, 2007, ISBN-10: 0596529325.
- Souhila Kaci, **Working with Preferences: Less Is More**, Springer-Verlag, 2011, ISBN: 978-3-642-17279-3.
- Felix Brandt, Vincent Conitzer, Ulle Endriss, Jerome Lang and Ariel D. Procaccia, **Handbook of Computational Social Choice**, 1st Edition, Cambridge University Press, 2016, ISBN-10: 1107060435.

Course Description

Prerequisite: COP 3530 or COP 3538. Course topics include heuristic techniques for problem solving and decision making, control and search strategies, knowledge representation, logic, and AI languages and tools. Applications such as expert systems, natural language understanding, planning, and computer vision will be included.

Our course will focus on searching, logical agents, preferences, recommender systems, social choice and welfare, probabilistic reasoning, and machine learning.

At the end of this course, the student will be able to

1. Analyze and apply the current algorithms used in intelligent systems.
2. Formally define real-world problems from the artificial intelligence perspective.
3. Propose and/or choose appropriate artificial intelligence algorithms for problem-solving.
4. Create and implement software systems using artificial intelligence algorithms.
5. Understand the variety and the broad scope of artificial intelligence.

Classes will include lecture, in class demonstrations, and hands-on in-class exercises. Reading will be assigned in the textbook. In addition, there will be programming projects assigned that will be completed primarily outside of class. All course materials will be posted on the Canvas.

Tentative Course Schedule

The schedule is subject to change based on the progression of the course. Check the course Canvas site for the latest schedule.

Week	Topics	Reading	Comments
1 (1/8-1/12)	Syllabus, Introduction, Python	R&N Ch1	Attendance to first class required!
2 (1/15-1/19)	More Python	Python learning	
3 (1/22-1/26)	Intelligent Agents, Searching	R&N Chs2&3	Project 1 Due - 1/26
4 (1/29-2/2)	Searching, Beyond Classical Search	R&N Chs3&4	
5 (2/5-2/9)	Exam Review, Exam 1 - 2/8		
6 (2/12-2/16)	Adversarial Search, Logical Agents	R&N Chs5&6	Project 2 Due - 2/16
7 (2/19-2/23)	Preference Models	Kaci Chs2&3	
8 (2/26-3/2)	Recommender Systems	Segaran Chs1&2	Homework 1 Due - 3/2
9 (3/5-3/9)	Social Choice and Welfare	Brandt et al. Ch2	
10 (3/12-3/16)	Exam Review, Exam 2 - 3/15		Project 3 Due - 3/16
11 (3/19-3/23)	**Spring Break**		
12 (3/26-3/30)	Uncertainty and Probabilistic Reasoning	R&N Chs13&14	
13 (4/2-4/6)	Learning from Examples	R&N Ch18	Homework 2 Due - 4/6
14 (4/9-4/13)	Natural Language Processing	R&N Ch22	
15 (4/16-4/20)	Project Workshop, Exam Review		Project 4 Due - 4/20
16 (4/23-4/27)	Final Exam - 4/24		6pm - 7:50pm

Important Dates (`https://www.unf.edu/catalog/academic-calendar/academic_calendar/`):

- 1/8: Classes begin.

- 1/12: Last day to Add/Drop.
- 1/15: Martin Luther King Day (University Closed).
- 2/2: Deadline to Withdraw (25% refund).
- 3/19-25: Spring Break (University Closed).
- 4/6: Deadline to Withdraw (NO refund).
- 4/20: Classes end.

Before you consider withdrawing, read the Satisfactory Progress Policy at `http://www.unf.edu/ccec/computing/` on the Policies & Procedures page to review the "one repeat" rule for all School of Computing courses.

Supplies and Equipment

In general, projects are submitted electronically through the **turnin utility in your osprey account and/or Canvas**, no special supplies are needed.

It is recommended that you use a cloud storage (e.g., your email accounts), flash drive, or some other method, to backup your files so that you have them in at least two places. Loss of your computer files is not an acceptable excuse for turning in your projects late.

Class Communication

The best way to contact me is via email to **xudong.liu@unf.edu**. I will check my email daily. Feel free to email me with questions or other matters at any time.

You are expected to review emails sent to your UNF account regularly. If I need to contact you or send a notice to the class, I will do so via your UNF email address. It is your responsibility to check and use this account regularly. The Canvas site will also be used to post information and announcements and will also be used to post grades and collect assignments.

Please keep in mind:

1. I will only be sending all email messages about this course only to your UNF email address.
2. If you choose to forward your UNF mail to another system (e.g. AOL, BellSouth, HotMail, etc.), UNF cannot guarantee delivery and if you do not receive important news because that other mail system was not working you will not be excused.
3. It is important that you respond to my email messages using only your UNF email account. If you send email from another email system you will not receive a reply.
4. When sending me any email, you encouraged to include CAP4630 in the subject line so that I can prioritize those emails.
5. I plan on responding to your emails within 24 hours, except on weekends or holidays.

Grading

Your grade will be based on five projects and three exams.

Components	**Points**
Attendance (10×10)	100
Homeworks (2×50)	100
Projects (4×100)	400
Exams ($1 \times 100 + 2 \times 150$)	400
Total	1000

Your letter grades for the class will follow the scale below. (Incomplete grades are rarely given.)

Letter	Percent
A	90% - 100%
B	80% - 89%
C	70% - 79%
D	60% - 69%
F	$\leq 59\%$

Class Attendance

There will be **10** attendances randomly spreadout throughout the course. In case of more than 10 attendance checks, only the **highest 10** will contribute to your final grade. You should plan to attend every class. This is a fast-paced course, missing a single class means that you may miss the coverage of a significant amount of material from the textbook. The material covered in class is generally most important for the projects and the tests.

Project Late Penalties

All projects are individual assignment due by midnight on the days indicated in the course schedule, generally Friday. Late projects will be accepted up to the beginning of the next class with a **20% penalty**. **No** projects will be accepted more than one class period late. **No** extra credit projects or make-up projects will be given.

Exams

Exams may include a combination of multiple choice, matching, fill-in the blanks, short answers or practical exercises. Material covered in the reading assignments, whether covered in class or not, and any material discussed in class may be included in the exams.

You are expected to take the exams at the scheduled times. No makeup exams will be given except in cases of documented medical or family emergency. If you expect to miss an exam and have a good reason (examples of acceptable reasons: medical procedure, reserve duty, a university sanctioned event like a sports meet that you are participating in, etc.) you may arrange with the instructor **ahead of time** to take the exam at an alternate time. Exams missed for insufficient reason and without being cleared with the instructor before the exam time will be assigned a score of zero.

Notes: The grade of Incomplete (I) is uncommon and is used only in cases of a verifiable emergency that prevents a student from completing the class. All grades of Incomplete require departmental approval. If a student withdraws from a class by the published withdraw deadline, they receive the grade of W. The grades WP and WF are used if a student petitions to withdraw after the deadline and the petition is granted.

Conduct

You are expected to attend class and use class time to learn the course material. You should treat the professor and the other students in the class with respect, to help create a positive learning environment.

While in class, you should not text, check Facebook, read your email, browse the web or engage in any other non-course related activities. Your cell phones should be set to vibrate or turned off while in class. If you need to take a call or read/send a text, step out of the classroom. **Do not answer your phone while in class.**

UNF is a smoke-free campus, smoking is not allowed anywhere on campus. E-cigarettes are permitted outdoors only.

Food is not allowed in the classrooms during a class session. Beverages are permitted, but must be carried in covered containers, such as coffee cups with lids, bottles, or cans. Please do not bring open mugs or glasses to class.

Please refer to the Student Conduct Code in the student handbook for more details about how you are expected to conduct yourself while at UNF. `http://www.unf.edu/deanofstudents/student_handbook.aspx`

Academic Integrity

Your grade in this class is based on three exams, six projects, and in-class activities. The exams will be taken in class and you are expected to complete the exam without help from others. While there may be some time provided in class to work on the projects, they are completed primarily outside of class. You are encouraged to learn from each other and discuss the projects; however, you are expected to create each project yourself. **Do not share your source code or project files with others and do not use somebody elses source code or project files, including code found on the Internet. If that occurs, the person who provided the files and the person(s) who used them will receive the score of zero for that project and will be reported for an academic integrity violation.**

End of every chapter there are problems designed to help you learn the material. You are encouraged to work together on these if it will help you to learn the material. Please review the complete UNF Academic Integrity Code found at `http://www.unf.edu/catalog/policies/Policies_and_Regulations/` and the Florida Computer Crimes Act found at `https://www.unf.edu/its/polproc/Computer_Crimes.aspx`.

Disability Resource Center (DRC)

Students with disabilities who seek reasonable accommodations in the classroom or other aspects of performing their coursework must first register with the UNF Disability Resource Center (DRC) located in Building 57, Room 1500. DRC staff members work with students to obtain required documentation of disability and to identify appropriate accommodations as required by applicable disability laws including the Americans with Disabilities Act (ADA). After receiving all necessary documentation, the DRC staff determines whether a student qualifies for services with the DRC and if so, the accommodations the student requires will be provided. DRC staff then prepares a letter for the student to provide faculty advising them of approved accommodations. For further information, contact the DRC by phone (904) 620-2769, email (drc@unf.edu), or visit the DRC website (`http://www.unf.edu/drc/`).

Military and veteran students who return from combat exposure may be utilizing the post 9/11 GI bill to continue post-secondary education goals and may need both physical and academic accommodations. Contact the Military and Veterans Resource Center (`http://www.unf.edu/military-veterans/`), by phone at (904) 620-2655 or by email at mvrc@unf.edu.

Student Technology

Information Technology Services provides online information about technology topics including, Canvas, email, computer labs, etc. For more information, visit `http://www.unf.edu/its/For_Students.aspx`.

Continuity of Instruction Plan

In the event of disruption of normal classroom activities due to an emergency such as hurricane, pandemic, zombie apocalypse, or other unforeseen events, the format of this course may be modified

in order to enable completion of the course requirements. In that event, you will be provided an addendum to this syllabus that will supersede this version. It is your responsibility as a student participant to be proactive during any emergency to find instructions that I will post on Canvas and send via email which you should check daily.

Non-Discrimination, Equal Opportunity and Diversity Statement

The University of North Florida (UNF) is committed to providing an inclusive and welcoming environment for all who interact in our community. Please read the Non-Discrimination, Equal Opportunity and Diversity Statement at `https://www.unf.edu/eod/Non-Discrimination,_Equal_Opportunity_and_Diversity_Statement.aspx`.