

# Introduction to Artificial Intelligence

## Spring 2015

CS 490-B3/680-A5

MW 6:30–7:45 PM  
(office hours updated 1/23/2015)

PM 251

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*Office hours:* PM 558, Wed 1:30-3:15, MW 8-9 PM, or by appointment

*Course web site:* <http://www.cs.niu.edu/~freedman/csai/>  
Most course materials will be on Blackboard  
Sample code will be on turing at ~t90rkf1/dpy/

### *Course description:*

This course contains an introduction to the basic concepts and algorithms of artificial intelligence, including the A\* algorithm, recommender systems, neural networks, machine learning, the alpha-beta game-playing algorithm, and related material. Students will learn Python3 and write programs implementing programs implementing and/or using these algorithms.

### *Course objectives:*

- 1) To understand the most important concepts in contemporary artificial intelligence.
- 2) To be able to use these concepts in well-structured Python3 code.
- 3) To learn related useful material such as regex and dynamic programming.

*Contacting the instructor:* The best way to contact me is in person, followed by email. I do not retrieve messages from my phone voice mailbox. I will be happy to talk to you about questions or concerns at any time. I encourage you to address small problems before they become big problems, not the day before the exam.

I try to respond to email by the next business day, but there are occasional exceptions. Questions that can be answered from reference material may not be answered. Questions requiring major debugging are best handled in person.

Late-breaking news, e.g., errors in assignments and weather emergencies, will be posted on Blackboard. I suggest you check it every morning.

*Class attendance:* You are responsible for all material covered in class. If you miss a class, you must get notes from another student before the next class, *not from the instructor*. Research has shown that students who attend class regularly do better regardless of other behaviors. Class participation is encouraged and will make the class more interesting for you and for the other students. If you have a question, there are probably three other people with the same question who are even more shy than you.

Although many or most class materials will be posted on Blackboard, that is for your

convenience. This is *not* an online class, and there is no assumption that you can learn everything without coming to class.

*Class decorum:* In classes for freshmen, I state the following rule on the syllabus: “No activity that interferes with learning, i.e., one that may distract other students or the instructor, is permitted in class. For example, eating, talking (whether in person or on the phone), newspaper reading, and regularly being late or leaving early are not permitted.” In a class for seniors and graduate students, I assume it is not necessary to state such a rule explicitly; however, the rule remains in force.

Research has shown that activities such as texting and checking your email interfere with *your* retention of the material, however, they in general do not interfere with other people’s ability to concentrate. Therefore these are permitted in case of emergency. Please do not sit in the front row if you intend to engage in these activities, as it is distracting.

*Exams:* There will be three exams. Exams will be closed-book, closed-notes. Dates of the first two exams will be announced in advance. The final will be Mon., May 4, 6-7:50 PM. The final will not be comprehensive. Exams will be conducted in accordance with the department’s academic integrity policy.

Exams will include material from the lecture notes, written assignments and programs. For each exam, a review sheet will be posted listing all the possible conceptual questions (in a somewhat different format) and examples for the programming questions, unless examples have already been posted online. The slides will also be posted, generally within a few days after the lecture.

You are expected to take the exams on the assigned time and date. Missing an exam is an extremely serious matter: makeup exams will only be given if either (a) or *all* of (b), (c) and (d) are satisfied: (a) an unavoidable reason (e.g. car accident) with notice as soon as possible, (b) advance notification, (c) written documentation, (d) permission of instructor. For the final exam, permission of the department is also required.

Please notify me ASAP if you meet the university’s criterion for rescheduling a final exam, i.e., you have three finals on the same day and this course is the highest-numbered of the three, or if you have another final exam at the same time. The university deadline for scheduling a makeup final is Monday of the last week of classes. Documentation will be required.

*Assignments:* There will be approximately 6 programs and an occasional written assignment or short oral presentation. Most or all of the assignments will be well-structured Python3 programs that will run on turing/hopper. Graduate students are required to do an additional assignment, which may have a different format.

Unless otherwise specified, the following rules apply to all assignments. Assignments must be submitted as defined in the assignment writeup. You will receive 10% extra points for assignments submitted 24 hours before the deadline. Non-programming assignments will not be accepted late. There will be a penalty of 10% of the points for the assignment for each day or portion of a day for late programs, and no programs will be accepted more than 48 hours late. There may be a penalty if you do not follow directions for the assignment, e.g., do not submit the correct format, do not submit all the files, submit extra files, etc.

Programs must run as specified in the assignment. Programs must follow the coding, layout and documentation standards given out in class. To receive full credit, programs must (a) work, (b) follow the specifications, (c) be comprehensible to humans, (d) be accompanied by the requested writeup. If multiple versions (e.g., source, object, and/or output) are required, they must be consistent.

If you believe your assignment has been graded incorrectly, you must see the instructor within a week after the assignments have been returned.

*Working together:* You are encouraged to study together, however, that does not mean doing assignments together. Practice on problems from class, from the slides, or your own problems. Do the programs and any written assignments yourself.

*Academic integrity:* You are expected to do your own work on the homework, programs and exams. Cheating includes, but is not limited to, copying work from other students, copying work from other textbooks, copying work from the Internet, or allowing others to do the same, whether deliberately or not.

All cheating will result in the filing of an academic misconduct form and will affect your course grade, with the possibility of failing the course. Note that a second academic misconduct offense may result in your expulsion from the university.

We may use mechanized source comparison on the programs.

*Grading:* The course grade will be based on the exams and assignments. The exams will count 60% of your grade (20% each). The assignments will count 40% of your grade. The assignments will be weighted according to length and difficulty. Pre-announced in-class activities will count as regular assignment points. Unannounced in-class assignments may allow you to collect extra credit points. The grading scheme will be as follows (grades will not be curved or rounded):

Grade	Average
A	$\geq 90$
B	$\geq 80$
C	$\geq 70$
D	$\geq 60$
F	$< 60$

*Special circumstances:* Students with special needs (disability accommodation, religious observances, required military service, major illness or other unexpected events) are encouraged to contact the instructor as soon as possible. Having a lot of work for your other classes, being busy at your job, and network problems are *not* special circumstances; they are normal circumstances that everyone has.

*Disability accommodations:* The instructor will provide all of the accommodations to which you are entitled by law. If you need an accommodation for this class, you must provide a notification letter from the Disability Resource Center. If you wish to take your exams at the DRC office, you must also follow DRC regulations with regard to exam scheduling. Therefore you should

contact the DRC as soon as possible. They are located on the 4th floor of the Health Services Building, and can be reached at 815-753-1303 or [drc@niu.edu](mailto:drc@niu.edu). Also, please contact me privately as soon as possible to discuss possible accommodations – there is no need to wait until you have received the notification letter.