

Syllabus: CS520 Introduction to Intelligent Systems

Course Number: CS520-01

Course Title: Introduction to Intelligent Systems

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Class Times: Mondays 2:00 –3:50 Thursdays 2:00 - 3:50

Class Location: HH 524

Office Hours: Wednesdays 12:30–2:20; Thursdays 4:00-5:50; Other times by appointment.

Texts:

Required *Artificial Intelligence: A Modern Approach* by Stuart Russell and Peter Norvig. Prentice-Hall, 2003 (2nd Edition).

Strongly Recommended *Learn Prolog Now!* by Patrick Blackburn, Johan Bos and Kristina Striegnitz. Available online.

<http://www.coli.uni-sb.de/~kris/prolog-course>

Strongly Recommended Some Java Text. There are many out there. You can buy them online (e.g. amazon.com) or in a bookstore such as Barnes and Nobles. A few suggestions are given below, but other books are fine too.

The following is available in our campus bookstore:

- *Java Concepts* by Cay Horstmann. 4th edition. John Wiley & Sons.

It is an introduction to programming based on Java. I recommend it. Additionally, the following are good serious books:

- *core Java Volume I-Fundamentals* by Cay Horstmann and Gary Cornell. Published by Sun Microsystems Press and Prentice Hall.
- *The Java Programming Language* by Ken Arnold, James Gosling, and David Holmes. Published by Sun Microsystems and Addison-Wesley

The following are also good and take an interesting approach towards presenting the material:

- *Thinking in Java* by Bruce Eckel. Prentice Hall.
- *On to JAVA* by Patrick Winston and Sundar Narasimhan. Addison-Wesley.

There are also a number of online Java tutorials. I will put links to some of these on my web page.

Expected Work: Regular reading assignments, two midterm examinations, a number of homework assignments, and a final examination.

Class Web Page www.monmouth.edu/~rscherl/IIS/

Class Information All computer-generated overheads and handouts will be put on the web.

Grading:

Midterms 25 %

Final 25 %

Homeworks 40 %

Quizes 10 %

Exam Dates Thursday March 2, Monday March 27, Final during exam week.

Class Participation: If you miss a class, it is your responsibility to find out about any announcements made in class, and about the material covered. Similarly you are responsible for all information included in any assignments whether handed out or transmitted online and for all the information in this syllabus. Class participation is strongly encouraged, but you will not be graded for your class participation. Feel free to ask questions. When in doubt, ASK.

Late Policies: Homeworks should be handed in on the date due. The deduction for late homeworks is 5% per day up till 1 week late. Late homeworks may not be handed in by email except by special arrangement under special circumstances. They should be handed in to me directly. If you leave them in my mail box or under my door, you should also send me an email saying that you left it. They may also be mailed in by U.S. mail with the postmark date being used as the date handed in. After the one week has ended, late homeworks can be corrected, but will not receive credit as the solutions will have been discussed in class.

Computer: All students will need an account on **cslab** or **rockhopper**. You may do your assignments on any machine (including your own PC), but I can only guarantee that the software will work as intended on **cslab** or **rockhopper**.

Prerequisites: Graduate Standing. A basic knowledge of C++. Some familiarity with Unix.

Goals of the Course: This is an introductory intelligent systems/artificial intelligence course that will cover theoretical issues, applications and implementation techniques. The purpose of this course is to familiarize you with the basic techniques of artificial intelligence/intelligent systems.

Academic Honesty: Cheating in this course will not be tolerated. The penalty is likely to be an F in the course and may very well lead to expulsion from Monmouth University. All such cases will be handled as outlined in the *Monmouth University Student Handbook*.

Homeworks may NOT be solved in collaboration. You may talk about problems with each other. Where does talking end and cheating start? My rule of thumb is: you may not have a pen/pencil in your hand while you are talking (and no keyboard!).

Special Accommodations Students needing accommodations are encouraged to see me during office hours or to make a specific appointment to discuss their needs. Students with disabilities who need special accommodations for this class are encouraged to meet with me and/or the appropriate disability service provider on campus as soon as possible. In order to receive accommodations, students must be registered with the appropriate disability service provider on campus as set forth in the student handbook and must follow the University procedure for self-disclosure, which is stated in the *University Guide to Services and Accommodations for Students with Disabilities*. Students will not be afforded any special accommodations for academic work completed prior to the disclosure of the disability and prior to completion of the documentation process with the appropriate disability service office.

Regrades All disagreements about grading must be discussed in my office only. A request for an assignment or exam to be regrades must include a written note explaining the disagreement and also the original exam or assignment. These requests may be submitted in class or in my office. Regrade requests for a particular exam or assignment can only be accepted until the next test or assignment is due.

Topics A very tentative schedule, subject to change.

Week 1 Introduction, Beginning Java

- Week 2** Agents, More Java
- Week 3** Search
- Week 4** Informed Search/CSP
- Week 5** Propositional Logic
- Week 6** 1'st Order Logic
- Week 7** Knowledge Representation
- Week 8** Inference in 1'st Order Logic
- Week 9** Prolog, Planning
- Week 10** Neural Networks
- Week 11** Uncertainty
- Week 12** Machine Learning
- Week 13** NLP
- Week 14** Conclusions

Initial Assignment Chapters 1 and 2 of Russell and Norvig.