

CSC 790 - Advanced Topics in CS: Topics in Probabilistic Artificial Intelligence

Course Description: (3h) Lecture. An in-depth study of discrete probabilistic approaches to artificial intelligence. Includes a study of the fundamentals of probability, of static and temporal graphical models, and of the reasoning and learning problems one encounters when dealing with uncertainty. Applications to other fields will be a significant focus. **Prerequisite:** Graduate standing

Professor: Dr. William Turkett - Manchester 240, 758-4427, turketwh@wfu.edu

Office Hours: 4:00-6:00pm MT

Meeting Time for Class: 2:00-2:50pm MWF, Manchester 241

Webpage: <http://turkett790.blogspot.com>

Please check the website frequently for updates concerning the class.

Textbook: Learning Bayesian Networks - Richard Neapolitan – Pearson-Prentice Hall - ISBN 0130125342

Grading:

- Two Tests (Midterm & Final) - 50%
- Problem Sets – 25%
- Critical Reading – 25%

Expected Grading Scale:

- 90% – A – Demonstrated mastery of course subjects
- 80% – B – Demonstrated advanced understanding of course subjects
- 70% – C – Demonstrated basic understanding of course subjects

Fine-Print Details: Makeup tests will only be allowed if the absence is excused by the University. Blackboard will be used as the primary mechanism for collecting programming projects. No late problem sets will be accepted.

Academic Integrity: All work should be done independently by each student. Copying of partial or complete work will be referred to the University Judicial System. You should keep evidence when possible to demonstrate your own work. Should a question of authorship arise you will be expected to produce documents that trace the development of your work. Algorithmic and electronic means of detecting copying may be used by the instructor on submitted assignments.

Learning Assistance: If you have a disability that may require an accommodation for taking this course, please contact the Learning Assistance Center (758-5929) within the first two weeks of the semester.

Topics Covered:

- Fundamental mathematical aspects of discrete probabilities
- Graphical representations of probability distributions
- Probabilistic inference in graphical models
- Computational complexity of fundamental probabilistic algorithms
- Temporal models
- Learning under uncertainty
- Decision making under uncertainty (as time allows)

Course Calendar:

January 16th – First day of class

January 21st – Martin Luther King Holiday

February 20th – Last day to drop with a W

March 5th – *Test #1*

March 9th – Mid-term grades available

March 10th-14th – Spring Break holiday

March 21st – Good Friday holiday

April 30th – Last day of class

May 5th (Monday) – Final Exam @ 9:00pm

University Closure:

In the event that the University closes due to pandemic or other disaster, you will be provided with my home address, phone number, and a *CSC 790 Lecture Plan* document. You are requested to read the textbook material denoted within that document. Lecture materials, in the form of Powerpoint slides and/or videos; programming exercises; homeworks; and examination materials will be distributed electronically via email or via postal mail during the closure period. If the Internet is available, you should send electronic versions of your answers to the homeworks and programming exercises to either my WFU email address or turketwh@gmail.com. Tests should be taken closed book, without access to papers, persons, or other resources, and submitted via postal mail. A return date for the examinations will be specified in the mailing.

The Department of Computer Science would appreciate your help preparing for emergency situations in which students might be away from campus for an extended period of time during the course of a semester. For example, extreme weather or widespread health concerns might lead to an extended, but temporary, closing of campus facilities. Under such circumstances we would like for you to be able to continue your academic studies through electronic or postal communication channels. Please assist your instructor by providing the following information. This information will remain with your instructor and will not be disseminated in any way. Collected information will be shredded at the end of the semester.

Name: _____

WFU e-mail address: _____

(Optional) Other, non-WFU, e-mail address: _____

Telephone number where you can normally be reached during the semester:

Telephone number where you can be reached if campus is closed:

(Optional) Fax number where you can receive faxes if campus is closed:

Mailing address where you can be contacted if campus is closed:
