

## University of Colorado at Colorado Springs

## CS 583: Syllabus

**Artificial Intelligence II: Data Mining****TR 4:30-5:45 p.m.**

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Objective: Develop an understanding of the concepts and issues in data mining, and the primary techniques and algorithms employed in data mining.

Instructor: Jugal Kalita (262-3432)

Office: Engineering 178

Hours: M 4-6 PM, TR 6:00-7:00 p.m. or by appointment

**Text Book**

The text book and a couple of other good books are given below.

- *Data Mining: Introductory and Advanced Topics* by Margaret H. Dunham, 2003, Prentice Hall. It is a smallish book, about 300 pages, with a price tag of \$60 on Amazon.com and about \$35.00 for used. This is our primary text book. This is an easy reading book that is compact, but has good explanation and lots of examples.
- Another good text book is *Data Mining: Concepts and Techniques* by Han and Kamber, Morgan Kaufmann Publishers, 2001. This is an easy reading book with lots of examples. It costs about \$55.00 on Amazon.com for a new book and about \$32.00 for a used one. This book has about 550 pages.
- *The Handbook of Data Mining*, edited by Ye is a very good book. It's thick with about 700 pages, but is excellent and has the best coverage of books I have seen. There are a large number of tutorial articles written by experts in specific topics within data mining. It is \$150.00 at Amazon.com for a new book and about \$85.00 for used.

**Schedule of Topics**

This is a small class and hence, I have decided to run as a seminar class. This means that I will give some presentations, but the students will have to be actively involved in leading presentations in class. In other words, the students will take turns with me in presenting specific sections of the text book.

The following schedule is tentative. I will give out handouts when appropriate.

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Weeks	Text Chapter	Topics
1	1	Introduction to Data Mining
2	2	Related Concepts
2	3	Data Mining Techniques
2	4	Classification
2	5	Clustering
2	6	Association rules
2	7	Web mining
2	9	Temporal Mining

### Grading Scheme:

- I will give you 3 homework assignments. Assignments are worth 30% of the grade. Each assignment may be weighted differently.
- Each student will lead class discussions on 1 or 2 days (depending on the number of students enrolled). This will be worth 10% of the class grade.
- 55% is based on a semester project. This is broken up as given below.

You are required to write a 3-5 page proposal (don't double space please; you must have done some reading and provide references) you give me by the 4th week of the semester. This proposal is worth 5% of the grade. Think of this as an MS project/thesis proposal.

You will also do a 3-5 page midterm report and demo. The midterm report is worth 5% and the midterm demo is worth 5%.

You are required to write a detailed 10-12 page final report using the style of a journal paper and do a demo. The final paper is worth 10% of the grade and the demo is worth 25% of the grade. The final report is due on the last day of classes. I suggest that you start writing the report right from the beginning of the semester. Whenever you do something, perform an experiment, or get some results, write up a brief description along with any illustrative tables or graphs. If you write regularly, you will have a final report at the end without much additional work.

Your final exam is going to be a 20-30 minute oral presentation of your project in a conference-like format. This presentation is worth 5% of the grade. This is the final exam.

- 5% of the grade will be based on your regular attendance and participation in class discussion.

**Note:** If you have special reasons for not being able to hand in an assignment on time or take an examination on a scheduled date, please make prior arrangements with the instructor.

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