Course Syllabus

Edit

ISM 6136 Data Mining

Sections 020 and 350

Instructor

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Class Information

Location: Online only

Time: No meeting times, asynchronous delivery only

Office Hours: By Appt. or Wednesdays, 6:00 pm - 8:00 pm ET online.

Course Description and Objectives

The past few years have seen an unprecedented explosion in the amount of data collected by businesses and have witnessed enabling technologies such as database systems, visualization tools and statistical and machine learning algorithms reach industrial strength. These trends have spawned a new breed of business analytics systems that go significantly beyond reporting capabilities, to support predictive modeling and the extraction of business insights from data. These trends have also created a new role of “data scientists” who are professionals with expertise in the concepts and tools necessary for the skilled use of these systems. Understanding the power and limitations of these technologies can provide business managers and information systems professionals new approaches to support the task of solving hard business problems using data-driven approaches. This course will provide an understanding of fundamental data science concepts, techniques and business applications.

General Learning Outcomes

- Demonstrate understanding of specific data mining methods

- Describe different ways in which models can be evaluated
- Use data mining tools to build descriptive and predictive models
- Analyze a dataset using data analytics methods
- Describe global business scenarios where data and data mining can be applied

Text and Readings

There is no textbook. Online links to readings will supplement the custom course content.

Course Work & Grading

Type of Work	Number	Points Each	Points	% of Total
Quiz	5	10	50	20%
Final Exam (Cumulative)	1	60	60	24%
Individual Assignment	5	10	50	20%
Group Project 1	1	30	30	12%
Group Project 2 (Final)	1	60	60	24%
			250	**100%**

There are six quizzes. The quiz with the least score will be dropped and only the remaining 5 quiz scores will be used for the final grade. Quizzes are open book, but no consultation or online lookup is allowed.

Letter Grades (% of total points)

Scores will be rounded up to the next whole point. To adhere to consistency, academic integrity, and fairness to everyone, requests for extra points in order to get the next higher letter grade for any reason will not be fulfilled. Reasons include, "I need the next letter grade otherwise my employer won't reimburse my tuition expenses", "I need to meet my scholarship requirements", or "It's a matter of cultural pride", etc.

Exceptions for makeup work are provided only for true, documented emergencies or based on guidance from the University due to any extraordinary circumstances.

Minimum Score	Maximum Score	Letter Grade
95%	100%	A+
90%	94%	A

85%	89%	B+
80%	84%	B
75%	79%	C+
70%	74%	C
60%	69%	D
0%	59%	F

Detailed Syllabus (All times in US Eastern Time)

Week	Dates	Topic	Task	Available	Due
1	Mar 6 - Mar 12	**Introduction to Data Mining** • Overview of Data Mining • Schedule • Analytic Thinking and Value	First Day of Attendance	Mar 6, 12:00 am ET	Mar 10, 11:59 pm ET
			Quiz 1	Mar 10, 12:00 am ET	Mar 12, 11:59 pm ET
	Mar 13 - Mar 19	**Spring Break**			
2	Mar 20 - Mar 26	**Structured Analytic Process** • The 10-step Process • Evaluating Models: Scientific Methods	Assignment 1	Mar 6, 12:00 am ET	Mar 20, 11:59 pm ET
			Quiz 2	Mar 24, 12:00 am ET	Mar 26, 11:59 pm ET
3	Mar 27 - Apr 2	**Classification** • Classifiers • Evaluating Classifiers • The Confusion Matrix	Assignment 2	Mar 20, 12:00 am ET	Apr 2, 11:59 pm ET
			Quiz 3	Mar 31, 12:00 am ET	Apr 2, 11:59 pm ET
4	Apr 3 - Apr 9	**Decision Trees** • Decision Trees & Their Quality	Quiz 4	Apr 7, 12:00 am ET	Apr 9, 11:59 pm ET

		• Using Decision Trees • Classification & Prediction			
5	Apr 10 - Apr 16	**Neural Networks, Unsupervised Learning (Similarity-Based Learning)** • Neural Networks • Clustering & k-Means	Assignment 3	Apr 3, 12:00 am ET	Apr 16, 11:59 pm ET
			Group Project 1	Mar 13, 12:00 am ET	Apr 16, 11:59 pm ET
			Quiz 5	Apr 14, 12:00 am ET	Apr 16, 11:59 pm ET
6	Apr 17 - Apr 23	**Association Rules & Market Basket Analysis**	Assignment 4	Apr 10, 12:00 am ET	Apr 23, 11:59 pm ET
7	Apr 24 - Apr 30	**Recommendation Systems** • Collaborative Filtering • Recommender Systems	Assignment 5	Apr 17, 12:00 am ET	Apr 30, 11:59 pm ET
			Quiz 6 (Week 6 material - Optional Makeup)	Apr 28, 12:00 am ET	Apr 30, 11:59 pm ET
8	May 1 - May 5	**Final Project and Exam**	Group Project Final	Apr 3, 12:00 am ET	May 4, 11:59 pm ET
			Final Exam	TBD	

Late Submission

One-day late submission on assignments incurs 10% penalty. No late submissions beyond 1 day.

Extra Credit and Make Up Work

There is no extra credit or make up work available. Quizzes or exams will not be re-opened in case of issues with your computer. It is your responsibility to keep your computer and wifi in full working order. Widespread network failures will be dealt with on a case-by-case basis and in accordance with University guidelines.

Online Exam Proctoring Policy and Notification

All students must review the syllabus and the requirements, including the online terms and video testing requirements, to determine if they wish to remain in the course. Enrollment in the course is an agreement to abide by and accept all terms. Any student may elect to drop or withdraw from this course before the end of the drop/add period.

Online exams and quizzes within this course may require online proctoring. Therefore, students will be required to have a webcam (USB or internal) with a microphone when taking an exam or quiz. Students understand that this remote recording device is purchased and controlled by the student and that recordings from any private residence must be done with the permission of any person residing in the residence.

To avoid any concerns in this regard, students should select private spaces for the testing. The University library and other academic sites at the University offer secure private settings for recordings and students with concerns may discuss location of an appropriate space for the recordings with their instructor or advisor.

Students must ensure that any recordings do not invade any third-party privacy rights and accept all responsibility and liability for violations of any third-party privacy concerns.

Students are strictly responsible for ensuring that they take all exams using a reliable computer and high-speed internet connection. Setup information will be provided prior to taking the proctored exam. To use Honorlock students are required to download and install the Honorlock Google Chrome extension (Links to an external site.)." For additional information please visit the USF online proctoring student FAQ (Links to an external site.) and Honorlock student resources

Policy Statements

https://www.usf.edu/provost/faculty/core-syllabus-policy-statements.aspxLinks to an external site..