Course Syllabus
CSC 557: Introduction to Data Analytics
At CenturyLink

INSTRUCTOR INFORMATION

Instructor: Dr. Pradeep Chowriappa
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Suggested Texts

Data Mining: Concepts and Techniques, Third Edition by Jiawei Han, Micheline Kamber, Jian Pei, ISBN-10: 0123814790

Course Description

Introduction to data analytics introduces you to the basics of data science and data analytics for handling of massive databases. The course covers concepts data mining for big data analytics, and introduces you to the practicalities of map-reduce while adopting the big data management life cycle

Brief Course Objective and Overview

This course is designed to provide you the basic techniques of data science, that included prominent algorithms used to mine data (e.g., clustering and association rule mining), and basic statistical modeling (e.g., linear and non-linear regression). The course is targeted towards individuals who would like to know the practices used and the potential use of large scale data analytics. The objective of this course is to ascertain that the students know the fundamental techniques and tools used to design and analyze large volumes of data. You are advised to pay careful attention to the class lectures and lab exercises. Exam questions are based primarily on the material covered in class and are designed to test your understanding of the underlying concepts of data analytics.

Responsibility

The student shall be responsible for all material covered in the class lectures. Each exam will include not only the material from the assigned text chapters, but also from any readings, guest lectures and any other materials covered in the class lectures. You are also responsible for any announcements made in class, such as announcements regarding the class schedule or assignments.

Exams

We will have 1 project presentation, 1 exam, and two quizzes. If you must miss a test for any reason, you must let me know ahead of time, except in the case of an emergency. If you miss the test for an unexpected reason, you must contact me as soon as you can after the test date. If you have an unexcused absence on a test day, you will get a zero on that test. If you have an excused absence for a test day, you will be allowed to take a make up test. You may be required to document the reason for your absence in order to have the absence excused and to be eligible for the makeup exam. Test dates will be confirmed in class. Documentation, if required, must be submitted to the instructor within 10 calendar days of the absence. Generally, absences are only excused for medical reasons or travel for CenturyLink business. For any students completing the certificate this quarter, make up exams must be completed by May 16.

Project Proposal and Assignments
There will a group project proposal. This project will be conducted in groups of 2 (with a max of 3 individuals). You will be asked to propose a problem that requires a data analytical solution. You will be asked to defend your proposal (answer a series of questions concerning your problem) in the class. The final project presentation (towards the end of the course) will count towards the grade.
There will be 2 assignments in addition to the project proposal. Assignments turned in after the due date/time will receive a score of zero, unless an approved excuse is provided to the instructor. Absence documentation, if required, must be submitted to the instructor. Assignments primarily take the form of article summaries on topics related to data analytics. Generally, absences are only excused for medical reasons or travel for CenturyLink business. Any makeup assignments/approved late work must be completed by May 9. For students completing the certificate this quarter, all makeup/approved late work must be completed by May 16.

Laptop use for Assignments and Hands on experiments
The use of laptops is integral to this course during hands on experiments. However, it is optional.

Technology Policy
Laptops and tablets are allowed in class. If you must leave your phone on, please limit its use to emergency situations.

Course Participation
I accordance with university policy, attendance will be taken each class period. In the event that you have to miss class, lectures will be recorded using mediasite and will be available through a link posted on Moodle.

Evaluation

Course Participation	**10%**
Assignments	**15%**
Project Proposal formulation	**20%**
Final Project	**30%**
Final Exam	**25%**

TOTAL	**100%**

Tentative **Course Outline**

Please note: We will only cover a portion of many of the chapters listed below.

Date	Topic	Assign./Presentations
Mar 14, 2013	Introduction to data analytics (DA), data preparation, and data cleaning.	
Mar 21, 2013	Data types and measures of similarity	Assignment 1
Mar 28, 2013	Data Preprocessing and numerosity reduction + Data Governance + *Weka a walkthrough*	
Apr 4, 2013	Project Proposals	QUIZ 1
Apr 11, 2013	Model building (Supervised Learning)	
Apr 18, 2013	*Hands on with IBM Modeler*	
Apr 25, 2013	Model evaluation in supervised learning	Assignment 2

May 2, 2013	Frequent pattern mining and Hands on with IBM Modeler.	
May 9, 2013	Unsupervised learning and evaluation	
May 16, 2013	Final Presentations and Written Exams	Presentation pertaining to assignments

Academic Integrity
Students are expected to read, understand, and adhere to the Louisiana Tech Academic Honor Code. Violations of the honor code will be reported.

STUDENTS WITH DISABILITIES
I am eager to assist in acquiring and providing reasonable accommodations for qualified individuals. Students needing accommodations are encouraged to discuss the need with me as soon as possible.

Disaster preparedness
In the event that a disaster or other emergency results in campus closure, this course will continue via moodle. You will be required to login to http://moodle.latech.edu for further instructions. Please enroll in the Emergency Notification System to receive official campus updates. You may also refer to http://www.latech.edu or http://www.latech.info for updates.

The instructor reserves the right, when necessary, to modify the syllabus: alter the grading policy, change examination dates, and modify the course content. Modifications will be announced and discussed in class.