Long Island University Post
Master of Data Analytics Program
MDA 610 (001) Data Management and Mining
Spring 2019

Class Meeting Time and Location

Days	Time	Classroom	Office
Tuesday	4:00 to 6:00 p.m.	LB 230	Suffolk Hall 113

Contact Information

Instructor's Name: Jiamin Wang, Ph.D.
LIU E-mail Address: jiamin.wang@liu.edu (Please include "MDA 610" in the subject line)
Online Learning System: https://blackboard.liu.edu
GitHub Repo: https://github.com/postmda/mda610
LIU Office Phone (516) 299-3914; Office Fax (516) 299-3917
Office Hours: M, W 3:30 – 5:00 p.m.; other hours by appointment

Catalogue Description

The goal of this course is to provide a comprehensive introduction to the principles and tools for managing and mining data, covering database management, data retrieval, data preprocessing, data analysis and mining. The students will learn web development, enterprise database management, data visualization, and representative data mining algorithms. By the end of the course, the students will have mastered the essential skills and tools to approach problems data-analytically and mine data to discover knowledge and pattern.

Course Prerequisite(s)

A college-level statistics class

Intended Audience

Graduate students who want to understand how data can be explored to uncover hidden information, learn the data mining and management techniques to effectively improve business performance, or get into the data science field.

Course Learning Goals: Content Related and Skills Related

Content Related Learning Goal: The learning goal of this course is that each student develops an in-depth understanding of and masters the basic data analytics methods with particular emphasis on their applications to problems that may arise in the functional areas of business.

The students will learn

- developing and deploying professional websites
- managing enterprise databases and developing data models
- extracting data from a database

- selected unsupervised learning methods
- widely-used supervised learning algorithms.

Measurement of Content-Related Learning Goal (*Assurance of Learning*): Homework assignments, quizzes and projects will serve to measure the achievement of the learning goal.

Skills Related Learning Goals: The course will facilitate developing the following skills

- Data analysis skills. This class will help to develop exploratory data analysis and data mining skills.
- Coding skills. The students will learn HTML, CSS, Java Script, SQL, and Python.
- Popular machine learning tools. The students will experience machine learning tools such as Scikit-learn, TensorFlow and PyTorch.

Contact and Homework Hours

In compliance with NY State Education Department Standards, this 3-credit course will meet for a minimum of 45 hours (50 minutes each) of instruction. It is expected that the student will conduct 109 hours of supplementary assignments including 40 hours of readings and 69 hours of doing exercise problems.

Course Materials

- Lecture notes posted on the Blackboard Learning System.
- Handouts distributed in class.

Assignments

Assignments will be chosen to reinforce the learning objectives of the course. For successful completion of this course, it is essential that the student conscientiously do all assignments.

Types of Assignments

1. Reading Assignments: associated with each lecture there will be a reading assignment.

2. Post-class Quizzes: there will be a post-class quiz each week that helps students test their mastery of the material covered in class. Each post-class quiz is taken online via the Blackboard Learning System.

3. Homework Assignments: there will be a homework assignment each week. Late submission will generally not be accepted.

Evaluation (Grade Determination)

Homework Assignments	50%
Post-class Quizzes	25%
In-class Quizzes	20%
Attendance & Participation	5%

Student Withdrawal

A "W" indicates a "student-initiated" withdrawal. A "W" grade cannot be obtained after April 5, 2019.

Incomplete Grades

A grade of "INC" indicates that some of the course requirements have not been completed. The INC is given only in rare instances where the course cannot be completed for a valid reason (as determined by me) and the student is passing the course. An "INC" grade cannot be used as a means of avoiding a poor course grade. An "INC" grade must be completed (not by repeating the course) by the end of the Fall 2019 semester.

Academic Conduct Policy Standards

Academic dishonesty is unacceptable, and condemned in the strongest possible terms. It undermines the bonds of trust and honesty between members of the community and defrauds those who may eventually depend upon our knowledge and integrity. Such dishonesty consists of any of the following: cheating, fabrication, plagiarism, facilitating academic dishonesty and sabotage. Academic dishonesty is punishable by a range of penalties, including a failing or lowered grade for an assignment/exam or for the course, and expulsion from the University. Detailed information on the academic conduct policy standards can be found on the LIU Post website at http://www.liu.edu/CWPost/StudentLife/Services/Counseling/AcadPolicies/Conduct/Standards

Support Service Options for Students with Disabilities Statement

If you are a student with a disability, who requires accommodations, please contact the Office of Disability Support Services, Post Hall, Lower Level, at 516-2994057 during the first few weeks of the semester.

Other Information/Class Policies

Late Assignments: No late homework assignments or post-class quizzes will be accepted. If the student misses class on the day a homework assignment is collected, the instructor must receive the collected assignment before the scheduled class time.

Classes: Class attendance is mandatory. An absence is excusable only if the student notifies the instructor within 12 hours of the valid reason for the absence. **Two or more unexcused absences may result in a course grade no higher than "B-". Students are not allowed to leave the classroom in the middle of the class without the instructor's permission. Cell phones must be turned off while the class is in session.**

Final Exam: The final exam will be given during final's week (May 3 to 9). The date, time and location of the final exam will be announced in late April.

Make-up Exams: No make-up exams will be given unless the student has an extremely good reason for missing the exam and has notified the instructor within 12 hours. If the student fails to notify the instructor in time (regardless of the validity of the excuse), or if the student misses an exam without a valid excuse, a make-up will not be allowed and the student will earn a score of zero (0). On the date of the make-up, the student must provide written documentation for missing the exam.

MDA 610 (001) Tentative Schedule

Topic	Date
HTML 5 Essentials	January 22
CSS Essentials	January 29
JavaScript	February 5
Relational Database	February 12
Data Management with SQL (I)	February 26
Data Management with SQL (II)	March 5
Numpy	March 19
Pandas	March 26
Classification (I) – *k*NN and Logistic Regression	April 2
Classification (II) – Classification Tree and Ensemble Methods	April 9
Neural Networks	April 16
Deep Learning	April 23
Text Mining	April 30
Review	May 7