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Fall 2015

MATH 4351

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University of New Orleans

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MATH 4351 – Introduction to Data Analytics, 3 Credit

Fall Semester 2015

Instructor: Tumulesh Solanky

Prerequisites: Math 2314 with a grade of C or better.

Class Time: 11:00 am – 12:15 pm TTH

Classroom: Math 219

Office: Math 248/207

Office Hours: 9:30 am – 11:00 am Monday to Thursday, also by appointment.

Phone: 280-6115

E-mail Address: tsolanky@uno.edu

Required Materials: Analytics in a Big Data World: The Essential Guide to Data Science and its Applications (Wiley and SAS Business Series) by Bart Baesens (2014)

Course Summary: The course is designed to introduce the students with the concept of Data Analytics (Big Data) and its applicability in a number of disciplines. Data Analytics is the science of deriving the knowledge that is obtained from analyzing the data. Students will be introduced with the process of collecting, inspecting, cleaning, organizing, transforming, and visualizing of the big data. Also, the students will learn the basic concepts necessary in the statistical modeling of the big data in order to discover patterns (useful information) in the data and to use it in the decision making process. The course is targeted towards students who would like to know the current practices being used and the potential use of large scale data analytics.

Statistical Software's: The statistical software SAS and R will be used for statistical modelling and the software Tableau will be used for data visualization.

Course Syllabus: Introduction to data analytics (DA), data collection, data preparation, and data cleaning, Data visualization, Data Management, Data mining, Statistical Model building, Predictive modelling.

Reference Books:

1. Data Science for Business: What you need to know about data mining and data-analytic thinking by Foster Provost and Tom Fawcett (2013)
2. Big Data. Viktor Mayer-Schonberger, Kenneth Cukier. (2012)
3. The Signal and The Noise. Nate Silver. (2012)
- 4, Big Data, Analytics and the Future of Marketing and Sales. McKinsey (2013)
5. Predictive Analytics: The Power to Predict Who Will Click, Buy, Lie or Die. Eric Siegel. (2013)
6. Moneyball. Michael Lewis. (2011)
7. Naked Statistics. Charles Wheelan. (2013)

Student Learning Outcomes: At the completion of the course the students would have knowledge and skills related to:

1. Basic concept of Data Analytics and its applicability in various Industries

2. Fundamentals of statistical sampling, various sampling designs, and other issues related to data collection and data cleaning.
3. Data Management and reporting techniques.
4. Data Analytics and Data Visualization.
5. Statistical model building and predictive analytics.
6. Using data mining tools to build predictive models.

Attendance:

Attendance is required. Attendance will be taken each class period. It is your responsibility to find out what is covered in class if you do miss a class. You are also responsible for any announcements made in class.

Homework's/Projects:

Homework's would be assigned regularly throughout the semester. **No late homework assignments will be accepted.** There will possibly be pop quizzes, which will be included in your homework grade. Projects would include statistical analysis of a data which would be submitted in the form of a formal report. The final project may require presentation either individually or as a team.

Mid-term Exam:

Over the course of the semester there will be one in-class exam. A makeup test will only be given for extreme emergencies with a written notice and must be taken promptly.

Course Grading: The course grade would be based on

Homework's//Projects 40%

Mid-term Exam 30%

Final Project with Presentations 30%

Student Conduct:

The University of New Orleans (UNO) is a multicultural community composed of diverse students, faculty and staff. UNO will not tolerate discrimination or harassment of any person or group of persons based on race, color, religion, sex, disability, national origin, age, sexual orientation, marital or veteran status or any other status protected by law. Each member of the university is held accountable to this standard, which is strongly reflected in this code.

Academic Dishonesty:

Academic integrity is fundamental to the process of learning and evaluating academic performance. Academic dishonesty will not be tolerated. Academic dishonesty includes, but is not limited to, the following: cheating, plagiarism, tampering with academic records and examinations, falsifying identity, and being an accessory to acts of academic dishonesty. Refer to the Student Code of Conduct for further information. The Code is available online at <http://www.studentaffairs.uno.edu>.

Accommodations for students with disabilities:

It is University policy to provide, on a flexible and individualized basis, reasonable accommodations to students who have disabilities that may affect their ability to participate in course activities or to meet course requirements. Students with disabilities should contact the Office of Disability Services as well as their instructors to discuss their individual needs for accommodations. For more information, please go to <http://www.ods.uno.edu>.

How class will be taught: This course is a lecture based course. Routinely, the class will meet in a computer lab for statistical modeling and data analysis.

Expectations of students: Students are expected to review the topics as assigned in class. Students are also expected to arrive on time, remain for full class session, conduct themselves in a respectful manner to other students and the instructor and not use cell phones during class.

Procedures of class: Instructor will lecture the material and do examples to show data analytics and statistical modeling and predictive analysis based on selected data sets.

Criteria for each graded assignment: Assignments must be completed by the due date. Students are required to show work in order to receive full credit on test problems.

Incomplete or late coursework: Late assignments will not be accepted.

Student Support Services: Your instructor is your first resource. Office hours are available for you if you should any questions. .

Important Dates*

Last day to adjust schedule w/out fee 08/18/2015
Semester Classes Begin 08/19/2015
Last day to adjust schedule w/fee,
or withdraw with 100% refund..... 08/25/2015
Last day to apply for December commencement..... 09/25/2015
Final day to drop a course or resign 10/14/2015
Mid-semester examinations.....10/05-10/09/2015
Final examinations.....12/07-12/11/2015
Commencement..... 12/18/2015

*Note: check Registrar's website for Saturday and A/B sessions, and for items not listed here: <http://www.registrar.uno.edu>

Fall Semester Holidays

Labor Day 09/07/2015
Mid-semester break10/15-10/16/2015
Thanksgiving.....11/26-11/27/2015

Withdrawal Policy – Undergraduate only

Students are responsible for initiating action to resign from the University (withdraw from all courses) or from a course on or before dates indicated in the current Important dates calendar. Students who fail to resign by the published final date for such action will be retained on the class rolls even though they may be absent for the remainder of the semester and be graded as if they were in attendance. Failure to attend classes does not constitute a resignation. Check the dates on the Registrar's website, <http://www.registrar.uno.edu>. Please consult The Bulletin for charges associated with dropping and adding courses.

Incomplete Policy – Undergraduate only

The grade of I means *incomplete* and is given for work of passing quality but which, because of circumstances beyond the student's control, is not complete. The issuance of the grade of I is at the discretion of the faculty member teaching the course. For all graduate and undergraduate students, a grade of I becomes a grade of F if it is not converted before the deadline for adding courses for credit (as printed in the Important Dates Calendar) of the next regular semester including summer semester.

Repeat Policy

When a student is permitted to repeat a course for credit, the last grade earned shall be the one which determines course acceptability for degree credit. A student who has earned a C or better in a course may not repeat that course unless, (1) the catalog description indicates that the course may be repeated for credit, or (2) the student's Dean gives prior approval for documented extenuating circumstances.

Graduate Policies

Graduate policies often vary from undergraduate policies. To view the applicable policies for graduate students, see the Graduate Student Handbook: <http://www.uno.edu/grad/documents/GraduateStudentHandbook2014.pdf>

Academic Dishonesty Policy

<http://www.uno.edu/student-affairs-enrollment-management/documents/academic-dishonesty-policy-rev2014.pdf>

Safety Awareness Facts and Education

Title IX makes it clear that violence and harassment based on sex and gender is a Civil Rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, etc. If you or someone you know has been harassed or assaulted, you can find the appropriate resources here:

<http://www.uno.edu/student-affairs-enrollment-management/>

UNO Counseling Services and UNO Cares

UNO offers care and support for students in any type of distress. Counseling Services assist students in addressing mental health concerns through assessment, short-term counseling, and career testing and counseling. Find out more at <http://www.uno.edu/counseling-services/>. First-year students often have unique concerns, and UNO Cares is designed to address those students succeed. Contact UNO Cares through <http://www.uno.edu/fye/uno-cares.aspx>.

Emergency Procedures

Sign up for emergency notifications via text and/or email at E2Campus Notification: <http://www.uno.edu/ehso/emergency-communications/index.aspx>. All emergency and safety procedures are explained at the Emergency Health and Safety Office: <http://www.uno.edu/ehso/>.

Diversity at UNO

As the most diverse public university in the state, UNO maintains a Diversity Affairs division to support the university's efforts towards creating an environment of healthy respect, tolerance, and appreciation for the people from all walks of life, and the expression of intellectual point of view and personal lifestyle. The Office of Diversity Affairs promotes these values through a wide range of programming and activities. <http://diversity.uno.edu/index.cfm>

Learning and Support Services

Help is within reach in the form of learning support services, including tutoring in writing and math and other supplemental instruction. Visit the Learning Resource Center in LA 334, or learn more at <http://www.uno.edu/lrc/>.

Affirmative Action and Equal Opportunity

UNO is an equal opportunity employer. The Human Resource Management department has more information on UNO's compliance with federal and state regulations regarding EEOC in its Policies and Resources website: <http://www.uno.edu/human-resource-management/policies.aspx>