Lincoln University

Course Title: Special Topics in MIS (Big Data Business Analytics)
Instructor: Dr. Walter Kruz

Course No: BA 355   Contact: wrkruz@lincolnuca.edu
Units: 3 (45 lecture hours)   Office Hours: By arrangement
Class Hours**:** Sat 12:30 – 3:15PM   Semester: Fall 2016

Textbook:

- Data Science and Big Data Analytics, by EMC Education Services. 2015. Publisher: John Wiley and sons. ISBN: 978-1-118-87613-8
- Various other resources from industry publications suggested by instructor

Course Description:
The course focuses on important areas of information systems not covered by the regularly offered courses. A specific topic for it is chosen by the instructor and announced in this syllabus. (3 units) Prerequisites: Instructor's permission and BA 260 or BA 350

Learning Objectives:
The topic chosen for this class provides MBA students with analytical and data skills which are embedded in business knowledge. Many new opportunities exist for business managers to apply analytical techniques to business problems. This area has experienced explosive growth due to the availability of large corporate databases and enhanced computing tools. Innovative companies rely on managers capable to apply the tools of modeling and data analysis to business problems. This course offers the perspective, skills, and methods used in Big Data analytics.

After taking this course, students will be prepared to
- link company data resources with knowledge of markets to address a wide range of business problems,
- offer market-based perspectives and solutions where business intelligence is a fundamental driver of corporate value
- liaise with technical teams to deliver data-driven solutions

Methodology:
This class offers a highly interactive learning environment. All students will participate in class discussions, research findings, and class exercises. Short oral presentations may also be assigned. Assignments will be given weekly and may consist of textbook exercises and research questions. Attendance is highly encouraged as exams may include questions from class discussions. Students will benefit from using a laptop, the computer lab, and the school library.

Standards:
Punctuality and commitment to deliverables are very important. All assignments are due on the date indicated and collected during the first 10 minutes of the class. Late assignments will not be collected or graded. Make-up exams are allowed only due to a documented medical excuse. Students are encouraged to study and work in groups for enhanced learning.

Project:
Project work, if assigned, is designed to familiarize students with the integration of business and technology concepts currently used in the analysis of Big Data to solve business problems. Projects may be assigned individually or as a group. If as a group, the grade is the same for all members. Project drafts may be evaluated on an agreed upon schedule during the semester. Final deliverable will be turned in as a hard copy. All sources must be referenced. APA standard is recommended.

Testing:
Typically, the class will consist of two or three exams of equal weight throughout the semester. All exams are individual deliverables. They are essay-type and consist of short answers related to the material being discussed. The exam format is closed book with no electronic devices allowed. Failure to follow instructions during exams will result in 0 points earned for that exam.

Grading:
Quizzes, homework assignments, exams, and the project allow a student to accumulate points throughout the semester. These earned points by the student are added and the total accumulated is divided by the total possible throughout the semester as a percentage. This percentage translates into a letter grade as described below.

For example, exams and the project are typically worth 100 pts each (~ 75% of the total points). Homework and quizzes from 5-10 pts (~ 25% of the total points). Assuming that 2 exams, one project, and 10 homework/quiz assignments are given, this will mean a total possible of 400 points could be accumulated. The student grade will be calculated as follows:

Grade = (Student's accumulated score / Total possible points) * 100 = %

A final grade is then assigned as follows:

Point/Grade Conversion

100 – 95%	**A**	76 – 74%	**C**
94 – 90%	**A-**	73 – 70%	**C-**
89 – 87%	**B+**	69 – 57%	**D+**
86 – 84%	**B**	66 – 60%	**D**
83 – 80%	**B-**	59% or less	**F**
79 – 77%	**C+**		

Classroom Protocol:
Students are expected to arrive on time and be prepared to participate. Laptop use is allowed only for a class purpose. No cell phones allowed.

Schedule:
This is a proposed schedule. It may change according to class progress or student interests.

Session	Class activity. Lecture & Discussion	Homework
Session 1	Syllabus. Project discussion/assignment Ch1-Intro to Big Data Analytics	Read Ch1 & 2 Do Ch1-Exercises 1-5 Read Ch 2
Session 2	Ch2-Data Analytics Lifecycle	Read Ch 3 Do Ch2- Exercises 1-3
Session 3	Ch3- Basic analytics methods: R	Do Ch3- Do odd-numbered exercises. Read Ch 4
Session 4	Ch4- Advanced methods :Clustering Exam Review	Do Ch4 -Exercises 1-3 Exam preparation
Session 5	**Review and Exam #1**	**Read Ch 5**
Session 6	Ch5-E-Advanced methods: Association rules	Do Ch5-Quest1-4 Read Ch 6
Session 7	Ch6- Advanced methods: Regression	Read Ch 7 Do Exercises Ch6: 1,3,5,7
Session 8	Ch7- Advanced methods: Classification	Read Ch 8 Do Ch7: 1,3,5,7
Session 9	Exam review and preparation Exam Review	Exam preparation
Session 10	**Review and Exam #2**	**Read Ch9**
Session 11	Ch 8- Advanced methods: Time series	Read Ch 9 Do Ch8-Exercises 1-8
Session 12	Ch 9 - Advanced methods: Text Analysis	Do Ch9-Quest1-9 Read Ch10
Session 13	Ch 10 Advanced methods: Unstructured data	Do Ch10-Exercises 1-10 Read Ch 12
Session 14	Ch12- Putting it all together Exam Review	Do Ch12 Exercises 1-5 Exam preparation
Session 15	**Review and Exam #3**	

Faculty Information:
Academic: BA Physics, BS Mathematics, MS Electrical Engineering, MBA, DBA. Courses taught: Operations Management, Project Management, Principles of Management, Organizational Behavior, E-Commerce, SCADA Systems Design & Analysis, Big data Analytics.

Professional Experience: Manager with senior and executive experience at high-tech companies in Silicon Valley. International consulting and training experience focused in systems integration and optimization of information capabilities in various industries. Various industry certificates.

Update: July 20, 2016