



Introduction to Data Analytics

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Course Description

This course is designed for upper level undergraduate students with strong interest in data analytics and graduate students in business programs. This course will introduce concepts, tools, and methods related to data collection, cleaning, processing, analysis, and visualization. Students in this class will benefit from the hands-on teaching style and real world cases and examples. Topics of this course include: statistical methods, IBM SPSS software package, statistical package R, Python programming language, MySQL database, and big data related topics. This course is intended for students who plan to look for data analytics related jobs or apply for graduate schools in information systems and/or data sciences. Students who wish to improve academic research skills may also benefit from this course.

Prerequisite

Students are expected to have taken at least one intro level programming course and one college level statistics course prior to taking this course.

Language

The primary instructional language of this course is English.

This course requires intensive English reading and writing. All course materials are given in English. Students are expected to complete writing assignments in English. Students are encouraged to participate in class discussions in English.

Course Materials

Required Textbook: To be determined

Course Conduct and Policies

Attendance Policy

The instructor takes attendance every class. Absences may result in penalty.

Course Communication

Students are encouraged to participate in class discussions. Those who are able to lead discussions or contribute valuable comments to discussions may receive extra bonus credit.

Homework/Assignment Policy

Completed homework/assignment must be turned in by the due time as specified in the assignment requirements. No late homework/assignment will be accepted.

Make-up Policy

There will be no make-up assignment except in the case of a documented medical emergency.

Grading

Class attendance and participation	10%
Lab assignments	50%
Final project	40%

Letter Grade	Final Total %
A	93% up
A-	90% up to 93%
B+	87% up to 90%
B	83% up to 87%
B-	80% up to 83%
C+	77% up to 80%
C	73% up to 77%
C-	70% up to 73%
D+	67% up to 70%
D	60% up to 67%
F	less than 60%

Professionalism

Students who are uncooperative, rude, and abusive to the instructor or other students will be penalized. Students who habitually show up late, or leave early without appropriate permission, bring food or drink into classrooms, read papers or magazines irrelevant to class instructions, listen to music, or use cell phones during class, use computers in class for anything other than approved class-related activities, or are disruptive in any other way, will be penalized.

Academic Integrity

Students are expected to uphold the standard of conduct relating to academic integrity. An individual student is assumed full responsibility for the content and integrity of the academic work he or she submits. The guiding principle of academic integrity shall be that a student's submitted work, examinations, reports, and projects must be his or her own work.

All sources must be cited with full references. **Copying ideas, code, and writings from another person and presenting them as if one's own is plagiarism.** Any form of cheating and plagiarism uncovered will result in an immediate F for that assignment and may lead to a discussion of the situation with the disciplinary officials assigned by the university.

Disability Policy

Students with a disability may request an accommodation as early as possible in the term. The instructor will accept verified disability and determine reasonable accommodations for this course.

Tentative Schedule (subject to change without notice)

Week 1	June 15	8:30 – 11:00 13:30 – 16:00	Introduction to data analytics, cases and tools Introduction to IBM SPSS
	June 16	8:30 – 11:00 13:30 – 16:00	Hypotheses tests and ANOVA Lab exercises with IBM SPSS
	June 17	8:30 – 11:00 13:30 – 16:00	Regression and linear modelling Lab exercises with IBM SPSS
	June 18	8:30 – 11:00 13:30 – 16:00	Introduction to statistical package R Lab exercises with R
Week 2	June 22	8:30 – 11:00 13:30 – 16:00	R data structures and data handling Lab exercises with R
	June 23	8:30 – 11:00 13:30 – 16:00	R graphics and data visualization Lab exercises with R
	June 24	8:30 – 11:00 13:30 – 16:00	Introduction to Python in data analytics Lab exercises with Python
	June 25	8:30 – 11:00 13:30 – 16:00	Python with Web data handling Lab exercises with Python
Week 3	June 29	8:30 – 11:00 13:30 – 16:00	Python with MySQL Lab exercises with Python and MySQL
	June 30	8:30 – 11:00 13:30 – 16:00	Working with big data Lab exercises
	July 1	8:30 – 11:00 13:30 – 16:00	Business data analytics Lab exercises
	July 2	8:30 – 11:00 13:30 – 16:00	Project Presentation Project Presentation

Professor's Biography

Dr. Wang is currently an associate professor in the Division of Management and Education at University of Pittsburgh at Bradford. He received his Ph.D. in business administration from Washington State University. Dr. Wang has taught a variety of information systems courses such as systems analysis and design, electronic commerce, information systems strategy, emerging technologies and innovation, objected-oriented programming and Web development, database management system, business intelligence, business computing, project management, etc.



Dr. Wang is an active researcher in information systems and related fields. He has published scholarly research in SSCI indexed and various other journals and conference proceedings. He serves as a reviewer for several SCI or SSCI indexed journals and a number of international conferences. He is also a contributing author of the book *The Encyclopedia of Knowledge Management*.

Dr. Wang is a member of Association of Information Systems (AIS), Academy of Management (AOM), Decision Sciences Institute (DSI), and The Institute for Operations Research and the Management Sciences (INFORMS).