

ECO 5445 Section B001: Introduction to Business Analytics

University of Central Florida — Department of Economics

In light of the ever-changing environment, the syllabus may be revised several times throughout the semester.

Course Information

Course	ECO 5445-22Summer B001
Term	Summer 2022
Meeting Time	MW 6:00pm-8:50pm
Location	BA1 0122
Credit Hours	3

Instructor Information

Instructor	Joshua L. Eubanks
Office	Virtual Office and BA2 302G
Hours	By appointment
Email	Email through Webcourses

Course Materials

Textbooks

Practical Programming: An Introduction to Computer Science Using Python 3.6, 3rd Edition by Paul Gries, Jennifer Campbell, Jason Montojo. The Pragmatic Bookshelf: Raleigh, NC, 2017 (ISBN-13: 978-1680502688, ISBN-10: 1680502689)

R in Action: Data Analysis and Graphics with R, 1st Edition 1st Edition by Robert Kabacoff. Manning Publications Company, Shelter Island, NY, 2015 (ISBN-13: 978-1935182399, ISBN-10: 1935182390)

Business Data Science: Combining Machine Learning and Economics to Optimize, Automate, and Accelerate Business Decisions, 1st Edition by Matt Taddy. McGraw-Hill: New York, NY, 2019 (ISBN-13: 978-1260452778 ISBN-10: 1260452778)

Course Description

This course is designed to introduce you to the main tools of business analytics. It is aimed at students interested in pursuing a career in business analytics, with an emphasis on accounting and financial data. The course begins with fundamental concepts in computing, to gain an understanding of the operations and functions that you can use to manipulate a variety of data types. You will learn how to design computer programs that obtain data by web-scraping, then read data, manipulate data, perform calculations with data and apply these to problems in business analytics. The course progresses through regression analysis, logistic regression, and other classification models, and concludes with advanced techniques, including dimension-reduction and nonparametric techniques for text analytics.

Since this is a 6 week course, you will need to dedicate more time to this than a standard class. The UCF standard is 2x the number of classroom hours in a week. Since we meet for 6 hours, you are expected to study at least 12hr/week.

Student Learning Outcomes

By the end of this course, you should be able to:

- understand the types of data in Python and R and the corresponding operations;
- use Python modules and R packages to solve problems;
- write new functions in Python and R;
- obtain, prepare, and analyze data to solve a business problem; and
- build models to explain and predict business phenomena.

Enrollment Requirements

The formal requirement is admission to the Master of Science in Accounting program, which normally includes undergraduate coursework equivalent to UCF courses QMB 3003 and QMB 3200, Quantitative Business Tools I and II. The true requirement, however, is a quantitative mindset. Computer programming is a quantitative exercise and is suitable for those with an interest in quantitative problem solving.

Course Structure

I will update the home page each Monday morning containing the content that must be completed before the following week.

The tentative schedule is as follows:

Day	Material	Chapter(s)
Jun 27	Introduction, Using and Designing functions	Ch 1 - Ch 3 (PP)
Jun 29	Text and strings, boolean variables, lists, loops, and modules	Ch 4-6, 8, and 9 (PP)
Jul 04	No Class - Independence Day	—
Jul 06	Reading/Writing Files and Web scraping	Ch 10 (PP), Beautiful Soup Doc.
Jul 11	Getting StaRted with R and Data management	Ch 2-5 (R)
Jul 13	Basic Graphs and Statistics	Ch 6-7 (R); Ch 1 (BDS)
Jul 18	Regression and Logistic Regression	Ch 8, Ch 13 (R); Ch 2 (BDS)
Jul 20	Simulation and Regularization	Ch 12 (R); Ch 3 (BDS)
Jul 25	Classification and Dimension Reduction	Ch 4, Ch 7 (BDS)
Jul 27	Text as Data and Non-Parametric Models	Ch 8-9 (BDS)
Aug 01	TBA	—
Aug 03	TBA	—

Assessment and Grading Procedure

Activity	Percent of Grade
Assignments	40%
Project Stage 1	30%
Project Stage 2	30%

Scale¹

Percent	Grade
100-93	A
92.9-90	A-
89.9-87	B+
86.9-83	B
82.9-80	B-
79.9-77	C+
76.9-73	C
72.9-70	C-
69.9-67	D+
66.9-63	D
62.9-60	D-
≤59.9	F

Reporting

Grades will be added via Webcourses to follow student data classification and security standards.

Policy Statements

Academic Integrity

The Center for Academic Integrity (CAI) defines academic integrity as a commitment, even in the face of adversity, to five fundamental values: honesty, trust, fairness, respect, and responsibility. From these values flow principles of behavior that enable academic communities to translate ideals

¹ I reserve the right to re-scale in a rank-preserving fashion. Grades will be rounded to the nearest whole number.

into action.²

The [Office of Student Rights and Responsibilities](#)³ will be notified of any instance of academic misconduct that has occurred inside or outside of the classroom. Students are encouraged to read the [Golden Rule Student Handbook](#).

Students should familiarize themselves with UCF's Rules of Conduct. According to Section 1, "Academic Misconduct," students are prohibited from engaging in

1. Unauthorized assistance: Using or attempting to use unauthorized materials, information or study aids in any academic exercise unless specifically authorized by the instructor of record. The unauthorized possession of examination or course-related material also constitutes cheating.
2. Communication to another through written, visual, electronic, or oral means: The presentation of material which has not been studied or learned, but rather was obtained through someone else's efforts and used as part of an examination, course assignment, or project.
3. Commercial Use of Academic Material: Selling of course material to another person, student, and/or uploading course material to a third-party vendor without authorization or without the express written permission of the university and the instructor. Course materials include but are not limited to class notes, Instructor's PowerPoints, course syllabi, tests, quizzes, labs, instruction sheets, homework, study guides, handouts, etc.
4. Falsifying or misrepresenting the student's own academic work.
5. Plagiarism: Using or appropriating another's work without any indication of the source, thereby attempting to convey the impression that such work is the student's own.
6. Multiple Submissions: Submitting the same academic work for credit more than once without the express written permission of the instructor.
7. Helping another violate academic behavior standards.

For more information about plagiarism and misuse of sources, see "Defining and Avoiding Plagiarism: The WPA Statement on Best Practices."

UCF faculty members strive to provide a quality education, and so seek to prevent unethical behavior and when necessary, respond to infringements of academic integrity. Penalties can include a failing grade in an assignment or course, suspension/expulsion from the university, and/or a "Z" designation⁴ on a student's official transcript designating academic dishonesty.

Active Duty Military

Students under active duty in the military will be accommodated as much as possible. Please see me prior to scheduled military obligations if this applies to you.

² <https://academicintegrity.org/>

³ Located in Ferrell Commons, Room 227

⁴ More information on Z designation [here](#).

Attendance/Late Policies

Late work will not be accepted. Attendance will not be recorded, however, the quizzes administered will not be announced and lecture notes will not be uploaded. As stated in the assignments section, if you show up over 20 minutes after we have started the midterm or final exam, you will **NOT** be able to take the exam.

Emergency Procedure and Campus Safety

Be aware of your surroundings and be familiar with the necessary actions to take in the event of an emergency. In case of an emergency, dial 911 for assistance. All classrooms contain an emergency procedure guide and is available [online](#). I advise signing up for text alerts from UCF if not already registered. Steps are below:

- Log in to myUCF
- Click the ‘Student Self Service’ tab
- Click the ‘Personal Information’ tab
- Click the ‘UCF Alert’ tab

If there is a medical emergency during class, students may need to access a first-aid kit or AED (Automated External Defibrillator). Here is the [link](#) to learn where those are located.

To learn about how to manage an active-shooter situation on campus or elsewhere, consider viewing this [video](#).

Students with special needs related to emergency situations should speak with me outside of class.

Extra Credit

I do not provide “extra credit” that can only impact one individual. I may provide extra credit during class or for participating in an activity outside of class. I also provide additional ways to increase your grade in the course: dropped quizzes, homeworks, and the ability improve a bad midterm by performing better on the final.

Make-up Exams and Assignments

Per university policy, students may only turn in make-up work (or and equivalent, alternate assignment) for **university-sponsored events, religious observances, or legal obligations (i.e. jury duty)**. In these instances, students are excused without penalty.

Students who know they will be absent due to a religious observance must notify me at the beginning of the semester so that make-up work can be arranged. For more information, please refer to the [policy](#).

Revisions to the Syllabus

The contents of this syllabus may change as we progress through the semester. I will post an announcement declaring any major changes to the syllabus through Webcourses.

Student Academic Activity Policy

As of Fall 2014, all faculty members are required to document the student's academic activity at the beginning of the course. How I am documenting it in this course is the first quiz. Please complete the quiz by the end of the first week, or you may delay/lose your financial aid.

Student Accessibility Services

The University of Central Florida is committed to providing access and inclusion for all persons with disabilities. Students with disabilities who need disability-related access in this course should contact the lecturer as soon as possible. Students should also connect with [Student Accessibility Services](#) located at Ferrell Commons room 185, by [email](#), or phone 407-823-2371. Through Student Accessibility Services, a Course Accessibility Letter may be created and sent to professors, which informs faculty of potential access and accommodations that might be reasonable. Determining reasonable access and accommodations requires consideration of the course design, course learning objectives and the individual academic and course barriers experienced by the student.