QMB 3311 Section 0001: Python for Business Analytics

University of Central Florida — Department of Economics

Course Information

Course	QMB 3311-23Spring 0001
Term	Spring 2023
Meeting Time	TR 10:30am-11:50am
Location	BA1 212
Credit Hours	3

Instructor Information

Instructor	Joshua L. Eubanks
Office	BA2 302Y
Hours	TR 1:00pm - 2:00pm or by appointment
Email	Email through Webcourses

Important Dates

- **Midterm**: Feb 28, 2023 10:30am - 11:50am
- **Final**: May 02, 2023 10:00am – 12:50pm

Contents

1 Course Rules

Please read these rules carefully.

1. Do not cheat. If a student is caught cheating, they will be punished to the fullest extent possible. Students should be familiar with the section on academic integrity.
2. I do not "give" grades, I merely record them. I am only able to change a grade if there is a clerical error. Any emails that fall into the category of "academic panhandling" (extra credit, "grade bumping", negotiations, etc.) will be ignored. I will not reevaluate coursework after the term is finished.
3. Make-up opportunities are not given. If a student misses a quiz or a homework, they can count it as a dropped assignment. If they miss the midterm exam, they must provide what a valid excuse within a week of the missed midterm. If I deem the excuse valid, then their final exam will count in-place of the missed exam.
4. Quizzes and exams can cover all the material (assignments, lectures, textbook, etc.) I have assigned. Questions about what questions, number of questions, etc. will not be discussed during class.
5. My office hours are to help students understand concepts that they may be struggling with. My hours do not replace attending class or reading the textbook.

2 Course Materials

2.1 Textbooks

- Gries et al. [2017]
- Taddy [2019]
- Optional: Adler and Van Doren [2014]

2.2 Software

- A python distribution
- An IDE (interactive development environment). We will be using Spyder, which is within the Anaconda distribution of python
- GitHub. This is a common version control software.

3 Course Description and Learning Objectives

At the end of the course, a student should be able to solve quantitavtive problems using python. The skills provided will be valuable if a student is pursuing a career in business analytics. After completing the course, a student should be able to:

- Understand data types and basic operations
- Use existing python modules to solve problems

- Create new python modules and functions
- Understand linear alegrbra and implement it via python
- Manage and analyze data to solve business problems
- Understand the distinction between written calculations and computer calculations

For the official course description please refer to the Undergraduate Catalog.

4 Course Structure

The tentative schedule is as follows:

Day	Material	Chapter(s)
Jan 10	Introduction	PP Ch. 1-2
Jan 12	Using Functions	PP Ch. 3
Jan 17	Designing Functions	PP Ch. 3
Jan 19	Text and Strings	PP Ch. 4 ; BDS Ch. 8
Jan 24	Boolean Variables	PP Ch. 5
Jan 26	Lists	PP Ch. 8
Jan 31	Loops	PP Ch. 9
Feb 02	Python Modules	PP Ch. 6
Feb 07	Using Modules	PP Ch. 6
Feb 09	Designing Modules	PP Ch. 6
Feb 14	Methods	PP Ch. 7
Feb 16	File IO	PP Ch. 10
Feb 21	Reading Files	PP Ch. 10
Feb 23	Sets and Tuples	PP Ch. 11
Feb 28	Midterm Exam	—
Mar 02	Algorithms	PP Ch. 12
Mar 07	Solving Equations	—
Mar 09	Searching	PP Ch. 13
Mar 14	Spring Break: No Classes	—
Mar 16	Spring Break: No Classes	—
Mar 21	Sorting	PP Ch. 13
Mar 23	Classification	BDS Ch. 4
Mar 28	Optimization	BDS Ch. 2-3
Mar 30	Nonparametrics	BDS Ch. 9
Apr 04	TBD	—
Apr 06	Dictionaries	PP Ch. 11
Apr 11	Creating Databases	PP Ch. 17
Apr 13	Using Databases	PP Ch. 17
Apr 18	Using Databases	PP Ch. 17
Apr 20	Testing	PP Ch. 15

5 Grading and Assignments

Your overall grade can be calculated using this formula:

$$\text{Overall Score} = \max \begin{cases} 0.1(\text{Top 6 Quizzes}) + 0.3(\text{Top 6 Assignments}) + 0.3(\text{Midterm}) + 0.3(\text{Final}) \\ 0.1(\text{Top 6 Quizzes}) + 0.3(\text{Top 6 Assignments}) + 0.15(\text{Midterm}) + 0.45(\text{Final}) \end{cases}$$

Using this formula, you will be able to calculate your grade without my help.

5.1 Grading Scale

I have a strict grading policy: your course grade will be based upon the extent to which you meet *my* expectations in the course. I do not curve the homework, quizzes, or exams.

Percent	Grade	
100-93	A	outstanding performance, demonstrates a complete grasp of the material
92.9-90	A-	excellent performance, only minor errors throughout
89.9-87	B+	very good performance, several minor errors or a few more substantial ones
86.9-83	B	good performance, more of both types of the aforementioned errors
82.9-80	B-	pretty good performance, substantial errors becoming more common
79.9-77	C+	fair performance, frequent errors of substance
76.9-73	C	fair performance, even more frequent errors of substance
72.9-70	C-	weak performance, major problems appear
69.9-67	D+	weak performance, major problems appear more regularly
66.9-63	D	poor performance, major problems are common
62.9-60	D-	poor performance, a lack of understanding demonstrated regularly
$\leq$59.9	F	—

5.2 Assignments and Assessments

These are the ways you will be evaluated throughout the course.

5.2.1 Quizzes

There will be at least 6 quizzes. The quizzes open-book and open-notes, cover any material presented, and will be approximately 15 minutes in length. It can be at the beginning or end of the class, so be sure to read the textbook in preparation.

5.2.2 Assignments

You can expect 8 assignments throughout the semester, but I only count the top 6. Be sure to complete all the assignments as future assessments may require you to reference previous homework

5.2.3 Midterm

This will be a written exam on February 28, 2023 consisting of short and long answer questions. The exam is written to be completed within 1 hour and 15 minutes. The exams will be in a digital format and will focus on quantitative problem solving using python.

5.2.4 Final Exam

According to UCF policy, all courses must have a final examination or assessment. The format of the exam will be a combination of short and long answer questions.

This exam is cumulative and is written to be completed within 2 hours and 50 minutes. The rules will be the same as the midterm.

6 Reporting

Grades will be reported via Webcourses to follow student data classification and security standards. I cannot discuss your grades with anyone else.

7 Policy Statements

7.1 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 into action.[1]

The Office of Student Rights and Responsibilities[2]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.

[1] https://academicintegrity.org/
[2] Located in Ferrell Commons, Room 227

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" designation[3] on a students official transcript designating academic dishonesty.

7.2 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.

7.3 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. 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.

7.4 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.

[3] More information on Z designation here.

7.5 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.

7.6 Revisions to the Syllabus

I reserve the rights to make changes to the syllabus as we progress through the semester. I will post an announcement declaring any major changes to the syllabus through Webcourses.

7.7 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.

7.8 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.

References

Mortimer J Adler and Charles Van Doren. *How to read a book: The classic guide to intelligent reading*. Simon and Schuster, 2014.

Paul Gries, Jennifer Campbell, and Jason Montojo. *Practical programming: an introduction to computer science using Python 3.6*. Pragmatic Bookshelf, 2017.

Matt Taddy. *Business data science: Combining machine learning and economics to optimize, automate, and accelerate business decisions*. McGraw Hill Professional, 2019.