



QSO 653: Data Analytics Toolkit II Syllabus

About This Course

Course Description

In this course, students will access data programmatically using application programming interfaces (APIs). They will parse complex web-based datasets using tools like web scraping, text mining, and social media analytics to capture data from unconventional sources. Students will store and manipulate this data in a SQL database, and work collaboratively with one another using version control.

What You'll Learn

When you've successfully completed this course, you'll be able to:

- Use industry tools and techniques to capture data from non-traditional sources
- Execute database operations to complete routine tasks relevant to industry use cases
- Utilize industry collaboration tools to complete complex data analytics work in a team

Course Prerequisites

QSO 593: Analytics Strategy and Methods

QSO 613: Data Analytics Toolkit I

This Term

In the fourth term of the program, you will build on your previous work in Python by learning new tools and libraries that will take your skills to the next level. You'll use techniques like web scraping, sentiment analysis, and machine learning to help you develop an appreciation for the wide array of tools that exist in the analytics ecosystem.

This course—QSO 653—is one of two courses you'll be taking this term. The other is **QSO 633: Full-Stack Data Analytics**. While these are two separate courses in Brightspace, they're closely related. What you learn in one course will help you in the other, and vice versa. Your class sessions will cover content from both courses.

At the end of the term, if you've successfully passed both courses, you'll also earn a badge called **Full-Stack Data Analytics**.

This badge demonstrates that you have these skills:

- | | | |
|-----------------|-------------------------|-----------------|
| ✓ SQL | ✓ Business Intelligence | ✓ Planning |
| ✓ Data Analysis | ✓ Data Science | ✓ Presentations |
| ✓ Research | ✓ Teamwork | |
| ✓ Python | ✓ Problem Solving | |

[Read more about digital badges here.](#)

What You'll Need for This Term

As you know, you aren't required to buy any textbooks or additional materials for the courses in your program. In most terms, however, you do need to download some free software.

You'll continue to use **Anaconda Individual Edition** to access Python, Pandas, and other libraries and tools. [Download Anaconda Individual Edition here.](#)

You'll also continue to use **Office365**, which is free to you as an SNHU student. [Download Office365 here.](#)

Your class sessions will continue to take place in **Microsoft Teams**, and you'll be able to chat with your instructors, TAs, and peers there. For more information about Teams, review the [Microsoft Teams For Students guide](#).

You'll also always have access to the [Business Analytics research and information guide](#) at the [SNHU Shapiro Library](#).

Course Assignments and Grades

Work Overview

Each week you'll have a homework assignment that relates to what you're learning in class and helps you develop the skills you need. Toward the end of the term, you'll have a group project where you'll analyze a series of statistical tests or machine learning models and create a presentation with high-level recommendations.

Weekly Assignment Schedule

In addition to the assignments listed in the following schedule, you'll also have suggested readings and videos most weeks, as well as twice-weekly class sessions. Discussion posts during the first week of each term are due by 11:59 p.m. Eastern Time. Assignments for the remainder of the term are due by 11:59 p.m. of your local time zone.

Week	Assignment	Assignment Point Value
Week 1	Discussion: Bias in Machine Learning Algorithms	75
	Homework: Web Scraping for Health and Profit	75
Week 2	Skills Self-Assessment	n/a
	Homework: Feeling Bitcoin	75
Week 3	Homework: Grocery Run II: The SQL	75
Week 4	Homework: Car Loan T-Testing	75
Week 5	Homework: Precision Phone Predictions	75
Week 6	Homework: Beyond the Hedges	75
Week 7	Begin Project Work	n/a
Week 8	Project Submission: The Power of Code	400
Week 9	Begin Week 10 Assignment	n/a
	Skills Self-Assessment	n/a
Week 10	Homework: Professional Development Action Plan	75
Total		1,000 points

University Grading System: Graduate

Grade	Numerical Equivalent	Points
A	93–100	4.00
A-	90–92	3.67
B+	87–89	3.33
B	83–86	3.00
B-	80–82	2.67
C+	77–79	2.33
C	73–76	2.00
F	0–72	0.00
I	Incomplete	
IF	Incomplete/Failure *	
W	Withdrawn	

* Please refer to the [policy page](#) for information on the incomplete grade process.

Instructor and TA Availability and Response Time

This course has an instructor and teaching assistant(s), who will support your learning and guide you through the course. Your interaction with the instructor, teaching assistant(s), and your classmates will take place on a regular, ongoing basis. Your instructor will be actively engaged within the course throughout the week, teaching class and answering questions. The teaching assistant(s) will facilitate small group sessions, monitor chats and discussions, and grade your work. You will normally communicate with your instructor and teaching assistant(s) in chats and discussions. You should feel free, however, to communicate with your instructor via SNHU email at any time, particularly when you want to discuss something of a personal or sensitive nature. Your instructor will generally provide a response within 24 hours. TAs will post grades and feedback (as applicable) within seven days of an assignment's due date, or within seven days of a late submission.

Classroom Etiquette and Expectations

SNHU students are expected to always act respectfully and to actively engage in the digital classroom environment. This includes:

- **Communicating Professionally:** You should always communicate professionally with your peers, instructors and TAs, and advisors, no matter where you're interacting with them (Teams, Brightspace, over email, by phone, etc.).
- **Participating in Class Sessions:** You're expected to attend each class session and actively participate, especially in the smaller breakout sessions, where you can ask questions and practice new concepts in a safe environment. You should be prepared to turn on your webcam so you can see your peers, instructors, and TAs "face to face." Being able to see each other can help everyone feel more engaged and connected, and can help you pick up on non-verbal cues, like smiles, confused looks, or nods of agreement.

You can refer to the [Orientation & Resource Hub](#) for more information about classroom expectations (see the section called "What's Expected of You as an SNHU Student?")

SNHU Policies: What to Know as an SNHU Student

Recordings

As part of this course, SNHU will be utilizing online resources to provide classroom instruction to students. In order to ensure that class sessions are available to students unable to attend scheduled classes, class sessions will be video and audio recorded, and the recordings made available for viewing at a later date by members of the class. Questions and comments asked and spoken by students, or entered in a chat feature, will be part of the recording. By participating in the class, you are consenting to recording. Students are invited to contact the meeting organizer with any questions or concerns about recording.

Diversity, Equity, and Inclusion

As indicated in our core values, SNHU is committed to “embrace diversity where we encourage and respect diverse identities, ideas, and perspectives by honoring difference, amplifying belonging, engaging civilly, and breaking down barriers to bring our mission to life.”

This may or will be reflected in SNHU’s curriculum as we embrace and practice diversity, equity, and inclusion (DEI) to provide the most transformative experience for our students, faculty, and staff. Because topics pertaining to DEI can be sensitive, please remember that embodying and practicing diversity, equity, and inclusion is one of our core values that you will encounter throughout the academic experience. In higher education, we are expected to think and engage critically. Use a growth mindset to embrace the diverse readings, course assignments, and experiences of your peers and faculty.

For more information about DEI at SNHU, please visit our website at the [Office of Diversity and Inclusion](#).

Course Participation

Course participation is required within the first week of the term for all online courses. *Participation* in this context is defined as completing one graded assignment during the first week of the course. Students in this program must participate in both courses to remain enrolled. Otherwise, students will be administratively removed for nonparticipation. Students who do not participate during the first week may forfeit their rights to be reinstated into the course. Students who stop attending a course after the first week and who do not officially withdraw will receive a grade calculated based on all submitted and missed graded assignments for the course. Missed assignments will earn a grade of zero. See the [course withdrawal policy](#) and the [full attendance policy](#) for further information.

Late Assignments

Students who need extra time may submit assignments (excluding discussion board postings) up to one week after the assignment due date. Discussion board submissions will not be accepted for credit after the deadline except in extenuating circumstances.

- A penalty of 10 percent of the total value of the assignment will be applied to the grade achieved on the late assignment regardless of the day of the week on which the work is submitted.
- Students who submit assignments more than one week late will receive a grade of zero on the assignment unless they have made prior arrangements with the instructor.

Students must submit all assignments no later than 11:59 p.m. (in their own time zone) on the last day of the term. No assignments are accepted after the last day of the term unless an incomplete has been submitted. See the [incomplete grades policy](#).

There may be times an instructor makes an exception to the late assignment policy. Instructors may accept late work, including discussion board posts, with or without prior arrangement.

- Exceptions to the late policy on these grounds are left to the instructor's discretion, including whether the late penalty is applied or waived. Students should not assume that they will be allowed to submit assignments after the due dates.
- If an instructor finds that they are unable to determine whether an exception to the late policy would be appropriate without documentation, the collection and review of student documentation should be handled through the Dispute Resolution team in order to protect the student's privacy. In these cases, students should file a [Student Concern Dispute form](#) to have the circumstances reviewed.

If a student is experiencing (or knows they will experience) a circumstance, including pregnancy, that is protected under the Americans with Disabilities Act or Title IX, they are encouraged to contact the [Online Accessibility Center \(OAC\)](#) as soon as possible to explore what academic accommodations might be offered. Instructors must honor all deadlines established through the OAC.

Student Handbook

Review the [student handbook](#).

ADA/504 Compliance Statement

Southern New Hampshire University (SNHU) is dedicated to providing equal access to individuals with disabilities in accordance with Section 504 of the Rehabilitation Act of 1973 and with Title III of the Americans with Disabilities Act (ADA) of 1990, as amended by the Americans with Disabilities Act Amendments Act (ADAAA) of 2008.

SNHU prohibits unlawful discrimination on the basis of disability and takes action to prevent such discrimination by providing reasonable accommodations to eligible individuals with disabilities. The university has adopted the [ADA/504 Grievances Policy](#) (version 1.2 effective October 16, 2017), providing for prompt and equitable resolution of complaints regarding any action prohibited by Section 504 or the ADA.

For further information on accessibility support and services, visit the [Disability and Accessibility Services](#) webpage.

Academic Integrity Policy

Southern New Hampshire University requires all students to adhere to high standards of integrity in their academic work. Activities such as plagiarism and cheating are not condoned by the university. Review the [full academic integrity policy](#).

Copyright Policy

Southern New Hampshire University abides by the provisions of United States Copyright Act (Title 17 of the United States Code). Any person who infringes the copyright law is liable. Review the [full copyright policy](#).

Withdrawal Policy

Review the [full withdrawal policy](#).

Southern New Hampshire University Policies

More information about SNHU policies can be found on the [policy page](#).