

ECP5936 002

SYLLABUS

BIG DATA



COURSE INFORMATION

- **Course Hours:** 10:10 - 11:00 AM Thursday
- **Course Meeting Location:** Bellamy 259
- **Credit Hours:** 1 hours
- **Prerequisites:** Enrollment in the M.S. in Applied Economics Program



COURSE DESCRIPTION

This course will employ Data Camp to help you gain experience using SQL and R. You will also have the opportunity to take Data Camp courses in AI, machine learning, Tableau, and spreadsheets.



COURSE INSTRUCTOR



- Dr. Katie Sherron
- Teaching Professor and Director, M.S. in Applied Economics
- ksherron@fsu.edu
- (850) 644-7098
- Economics Department / Office Location BEL284
Office Hours Tuesdays 9:00 - 10:00 AM

↩ Emails will be responded to within 24 to 48 hours.





LEARNING OBJECTIVES

At the completion of this course, students will be able to:

1. Interact with and query data in SQL
2. Summarize, join tables, and use window functions and built-in PostgreSQL functions to analyze data
3. Work with common data structures in R like vectors, matrices, and data frames
4. Master conditional statements, loops, and vectorized functions
5. Optimize code using code profiling and benchmarking
6. Write functions and object-oriented programming
7. Describe how machine learning works and when it can be used
8. Discuss the difference between AI and machine learning



COURSE MATERIALS

You will need a Data Camp account and access for this course. There is no textbook.

If you have a Data Camp account already set up, please join our Data Camp Group named

[ECP5936 Big Data](https://www.datacamp.com/groups/shared_links/f306188c7b2f38dba693fb190c384b5ffe71d854d14bbf612)

https://www.datacamp.com/groups/shared_links/f306188c7b2f38dba693fb190c384b5ffe71d854d14bbf612

. Please do not share the link with those outside of the class.



STUDENT RESPONSIBILITIES

- Students should log on to Canvas at least every other day to check for course updates.
- Students are expected to keep up with the class, engage with the course material, and submit assignments by the due dates.
- Assignments, quizzes, and exams are expected to be products of individual students per the **[FSU Academic Honor Policy](http://registrar.fsu.edu/bulletin/undergraduate/information/integrity/)** (<http://registrar.fsu.edu/bulletin/undergraduate/information/integrity/>). Students should not discuss any of the questions with each other before or during the actual assignments, activities, quizzes, or exams without instructor approval.

- To receive maximum points for questions, students need to follow the instructions carefully, follow word limits as instructed, and use spell and grammar checking.
- To be successful in this course, students need to complete all required assignments and tests.



GRADING POLICY

Your course grade is based on attendance and participation, and successful completion of assigned Data Camp courses and assessments.

Group	Weight
Attendance and Participation	50%
Data Camp	50%
Total	100%



GRADING SCHEME

This is a pass/fail course. The following standards will be used in this class

Grading Scheme Breakdown

Grade	Range
S	100% to 80%
U-	< 80%



ATTENDANCE AND PARTICIPATION

Attendance and participation make up half of your course grade. You will receive full credit for being on time and engaging with the materials during our class meetings. Participation means positively contributing to the class and learning outcomes of yourself and your peers. You will not earn credit if you are absent or engaged in outside activities while you are in class. This includes spending time on your phone.



DATA CAMP

You will be assigned one Data Camp course per week and assessments at the end of some of the courses or skill tracks. Courses and assessments must be completed by their due dates to earn credit. You must earn at least an intermediate level on assessments in order to earn credit.

You may test out of a course (or courses) by earning an intermediate level on the associated assessment. If you test out of an assigned course, you must complete another Data Camp course in its place. Please speak with the instructor and get written permission to take alternative Data Camp courses.

You will have access to Data Camp all semester! While the work assigned is in line with this being a one-credit course, I encourage you to complete additional courses.



TECHNOLOGY REQUIREMENTS

Course content is accessible through Canvas. Students will need to be able to view videos, write and upload assignments, post to discussion boards, and take assessments. Students should have access to high-speed internet and updated software. Mobile devices may be used to view course content, upload assignments, and take assessments as determined by the instructor. To view the most current technology requirements, visit the [FSU Canvas support site \(https://support.canvas.fsu.edu/kb/article/899-technology-recommendations-for-learning-online-at-fsu/\)](https://support.canvas.fsu.edu/kb/article/899-technology-recommendations-for-learning-online-at-fsu/).



CANVAS SUPPORT

Need help with Canvas? Contact FSU Canvas Support:

✉ **Email:** canvas@fsu.edu (<mailto:canvas@fsu.edu>)

📞 **Phone:** (850) 644-8004

🌐 **Website:** support.canvas.fsu.edu (<http://support.canvas.fsu.edu>)

🕒 **Hours:** 8am to 5pm, Monday - Friday



FSU LIBRARIES RESOURCES & SERVICES

Whether on campus or learning online, you can **[access library resources easily](https://lib.fsu.edu/service/campus-access)** (<https://lib.fsu.edu/service/campus-access>). You'll find databases, tutorials, workshops, and other helpful resources in the **[FSU Libraries for Students](#)** Canvas org site (all students are enrolled automatically). For recommended research resources and ways to connect with **[your librarians](https://lib.fsu.edu/service/library-liaisons)** (<https://lib.fsu.edu/service/library-liaisons>), look for "Library Tools" in your Canvas course navigation.



COURSE POLICIES

COMMUNICATIONS/NETIQUETTE

For Discussions:

- Please use polite, respectful behavior when posting your responses to prompts in the Discussion Boards.
- Be mindful of how you express your emotions and humor, and be sensitive to cultural and ability differences of your online peers.
- Keep postings to the point, and make sure your comments are relevant to the topic of discussion.
- Avoid messages such as, "Wow," "Way to go," or "Ditto" and aim for comments that validate other members' ideas through careful explanation of why.
- When replying, give a short description in the subject line of what you are replying to, and use correct punctuation and spelling throughout your post.

For Email Communication:

- For email, please respond to your instructor's and peers' messages within a 24-hour period.
- Use a brief description in the subject line that outlines the topic of discussion.
- Avoid using slang or profane words.
- Use your instructor's correct title he or she prefers for communication.
- Avoid using emoticons, such as smiley faces, and maintain a professional demeanor.
- Sign your email messages using your full name.

- AVOID USING ALL CAPS. This makes the message visually difficult to read and is perceived by the reader as "shouting."
- Use correct spelling, grammar, and punctuation, just as you would for any communication.
- Ask yourself whether you would be comfortable if someone other than the intended receiver were to read your message. Remember, email is not a completely secure form of communication.
- Refrain from "flaming," which is expressing a strongly held opinion without tact or regard for others. Don't assume that recipients will know the intent of the message (e.g., "just kidding"). It reads differently when it's in print (electronic or not).
- Report any inappropriate communication considered to be of a serious nature to your instructor, as it may be a violation of University policy.
- Treat others with respect by making messages clear and succinct.

PARTICIPATION & LATENESS POLICY

Excused absences include documented illness, deaths in the family and other documented crises, call to active military duty or jury duty, religious holy days, and official University activities. These absences will be accommodated in a way that does not arbitrarily penalize students who have a valid excuse. Consideration will also be given to students whose dependent children experience serious illness.

POLICY ON RESPONDING TO STUDENTS

- Email responses typically within 24 to 48 hours.
- Graded assignments typically returned within 2 weeks after due date.



UNIVERSITY POLICIES

UNIVERSITY ATTENDANCE POLICY

Excused absences include documented illness, deaths in the family and other documented crises, call to active military duty or jury duty, religious holy days, and official University activities. These absences will be accommodated in a way that does not arbitrarily penalize students who have a valid excuse. Consideration will also be given to students whose dependent children experience serious illness.

Please note: Because students who test positive for COVID-19 are required to self-isolate for ten (10) days, positive COVID-19 test results, required isolation orders, or documentation of contact tracing should all be considered valid documentation for missing class.

ACADEMIC HONOR POLICY

The Florida State University Academic Honor Policy outlines the University's expectations for the integrity of students' academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process. Students are responsible for reading the Academic Honor Policy and for living up to their pledge to "...be honest and truthful and... [to] strive for personal and institutional integrity at Florida State University." (For more details see the [**FSU Academic Honor Policy and procedures for**](#)

[**addressing alleged violations**](#) [_\(http://fda.fsu.edu/academic-resources/academic-integrity-and-grievances/academic-honor-policy\)_](http://fda.fsu.edu/academic-resources/academic-integrity-and-grievances/academic-honor-policy).)

ACADEMIC SUCCESS

Your academic success is a top priority for Florida State University. University resources to help you succeed include tutoring centers, computer labs, counseling and health services, and services for designated groups, such as veterans and students with disabilities. The following information is not exhaustive, so please check with your advisor or the Dean of Students office to learn more.

PROCESS FOR RESOLVING ACADEMIC PROBLEMS OR GRIEVANCES

Please use this [**step-by-step guide to resolving academic problems**](#) [_\(https://www.fda.fsu.edu/sites/g/files/upcbnu636/files/Media/Files/General%20Academic%20Appeals/Acad_Solving_Flowchart_Binder_Oct-2020.pdf\)_](https://www.fda.fsu.edu/sites/g/files/upcbnu636/files/Media/Files/General%20Academic%20Appeals/Acad_Solving_Flowchart_Binder_Oct-2020.pdf) to begin the process of communicating with your instructor to resolve any confusion or difficulty you may be having in the course. Detailed information on FSU's grievance procedure, including special instructions for students enrolled in an FSU branch campus, is maintained on the General Bulletin's [**Academic Integrity & Grievances**](#) [_\(https://registrar.fsu.edu/bulletin/undergraduate/information/integrity/index.cfm\)_](https://registrar.fsu.edu/bulletin/undergraduate/information/integrity/index.cfm) webpage. Out-of-state distance learning students should review the Office of Distance Learning [**Complaint Resolution**](#) [_\(https://distance.fsu.edu/about-us/complaint-resolution\)_](https://distance.fsu.edu/about-us/complaint-resolution) page for additional procedures.

AMERICANS WITH DISABILITIES ACT

Florida State University (FSU) values diversity and inclusion; we are committed to a climate of mutual respect and full participation. Our goal is to create learning environments that are usable, equitable, inclusive, and welcoming. FSU is committed to providing reasonable accommodations for all persons with disabilities in a manner that is consistent with academic standards of the course while empowering the student to meet integral requirements of the course.

To receive academic accommodations, a student:

- (1) must register with and provide documentation to the Office of Accessibility Services (OAS);
- (2) must provide a letter from OAS to the instructor indicating the need for accommodation and what type; and,
- (3) should communicate with the instructor, as needed, to discuss recommended accommodations. A request for a meeting may be initiated by the student or the instructor.

Please note that instructors are not allowed to provide classroom accommodations to a student until appropriate verification from the Office of Accessibility Services has been provided.

This syllabus and other class materials are available in alternative format upon request.

For more information about services available to FSU students with disabilities, contact the

[Office of Accessibility Services \(Tallahassee Campus\)](https://dsst.fsu.edu/oas) [_ \(https://dsst.fsu.edu/oas\)](https://dsst.fsu.edu/oas)

874 Traditions Way

108 Student Services Building

Florida State University

Tallahassee, FL 32306-4167

(850) 644-9566 (voice)

(850) 644-8504 (TDD)

[oas@fsu.edu \(mailto:oas@fsu.edu\)](mailto:oas@fsu.edu)

<https://dsst.fsu.edu/oas>

[Student Accessibility Services \(Panama City Campus\)](https://pc.fsu.edu/students/student-affairs/sas)

[_ \(https://pc.fsu.edu/students/student-affairs/sas\)](https://pc.fsu.edu/students/student-affairs/sas)

Office of Student Affairs

4750 Collegiate Drive

2nd Floor Barron Building (Room 215)

Florida State University Panama City

Panama City, FL 32405

(850) 770-2172 (office)

(866) 693-7872 (toll free)

Email: [sds@pc.fsu.edu \(mailto:sds@pc.fsu.edu\)](mailto:sds@pc.fsu.edu)

<https://pc.fsu.edu/students/student-affairs/sas> [_ \(https://pc.fsu.edu/students/student-](https://pc.fsu.edu/students/student-affairs/sas)

[affairs/sas\)](https://pc.fsu.edu/students/student-affairs/sas)

FREE TUTORING FROM FSU

On-campus tutoring and writing assistance are available for many courses at Florida State University. High-quality tutoring is available by appointment and on a walk-in basis. These services are offered by tutors trained to encourage the highest level of individual academic success while upholding personal academic integrity.

Tallahassee Campus

For more information, visit the Academic Center for Excellence (ACE) Tutoring Services' comprehensive list of on-campus tutoring options - see the [Academic Center for Excellence \(ACE\) Tutoring Services' website](#) (<http://ace.fsu.edu/tutoring>) or contact tutor@fsu.edu.

Panama City Campus

The PC campus provides both in-person and remote tutoring. In-person tutoring is available at the Robbins Center for Academic Excellence and Innovation in the Holley Building (which also houses the Digital Design Studio). Remote tutoring will be available through Zoom. To inquire about tutoring options for the PC campus, please visit the [Peer Tutoring website](#) (https://pc.fsu.edu/students/academic-advising-student-success-center/peer_tutoring) or contact an academic advisor in the Advising Center in the Holley Building to discover your options.

CONFIDENTIAL CAMPUS RESOURCES

Various centers and programs are available to assist students with navigating stressors that might impact academic success. These include the following:

[Victim Advocate Program](https://dsst.fsu.edu/vap) (<https://dsst.fsu.edu/vap>)

University Center A,

Room 4100, (850) 644-7161,

Available 24/7/365,

Office Hours: Monday-Friday 8am-5pm

<https://dsst.fsu.edu/vap> (<https://dsst.fsu.edu/vap>)

[Counseling & Psychological Services \(Tallahassee Campus\)](#)

[\(https://counseling.fsu.edu/\)](https://counseling.fsu.edu/)

Askew Student Life Center, 2nd Floor
942 Learning Way
(850) 644-8255 / (850) 644-TALK
<https://counseling.fsu.edu/>

FSU PC Counseling Center (Panama City Campus) [_\(https://pc.fsu.edu/students/student-affairs/counseling-services\)_](https://pc.fsu.edu/students/student-affairs/counseling-services)

Kathleen Duval, LCSW
Barron Building, Room 303
(850) 770-2174 (office)
(850) 832-3594 (cell)
<https://pc.fsu.edu/students/student-affairs/counseling-services>

University Health Services [_\(https://uhs.fsu.edu/\)](https://uhs.fsu.edu/)

Health and Wellness Center,
(850) 644-6230
<https://uhs.fsu.edu/>

FSU FOOD PANTRIES

FSU has established Food Pantries where students in need can pick up non-perishable food items freely and anonymously. The Food Pantry is available during the pandemic, and it is free and open to all students to take what they need. Donations for collection of non-perishable food items are encouraged.

For more information about the Tallahassee Food Pantry, visit the **Tallahassee Food for Thought Pantry website** [_\(https://dos.fsu.edu/resources/food-for-thought-pantry\)](https://dos.fsu.edu/resources/food-for-thought-pantry)

[\(https://dos.fsu.edu/resources/food-for-thought-pantry\)](https://dos.fsu.edu/resources/food-for-thought-pantry). The pantry is located at University Center A, Suite 4148. If you have questions or concerns, contact the Department of Student Support and Transitions at dsst@fsu.edu or (850) 644-2428.

For more information about the Panama City Food Pantry, visit the **PC Food Pantry website** [_\(https://pc.fsu.edu/students/student-services/food-pantry\)](https://pc.fsu.edu/students/student-services/food-pantry) [\(https://pc.fsu.edu/students/student-services/food-pantry\)](https://pc.fsu.edu/students/student-services/food-pantry). The pantry is located at Holley West Hall. If you have questions or concerns, contact Kathleen Duval LCSW at krduval@fsu.edu or (850) 770-2174.

SYLLABUS CHANGE POLICY

"Except for changes that substantially affect implementation of the evaluation (grading) statement,







this syllabus is a guide for the course and is subject to change with advance notice."

























COURSE SUMMARY




All course assignments and texts with due dates are listed below. To be successful in this course, be sure to complete all required assignments and tests by the due date.

Course Summary:

Date	Details	Due
Thu Jan 6, 2022	 <u>Week 1 Attendance and Participation</u> https://canvas.fsu.edu/courses/195838/assignments/1430924	due by 11:59pm
Thu Jan 13, 2022	 <u>Course: Introduction to R</u> https://canvas.fsu.edu/courses/195838/assignments/1431453	due by 11:59pm
Thu Jan 13, 2022	 <u>Week 2 Attendance and Participation</u> https://canvas.fsu.edu/courses/195838/assignments/1430940	due by 11:59pm
Thu Jan 20, 2022	 <u>Course: Intermediate R</u> https://canvas.fsu.edu/courses/195838/assignments/1431454	due by 11:59pm
Thu Jan 20, 2022	 <u>Week 3 Attendance and Participation</u> https://canvas.fsu.edu/courses/195838/assignments/1430941	due by 11:59pm
Thu Jan 27, 2022	 <u>Course: Writing Efficient R Code</u> https://canvas.fsu.edu/courses/195838/assignments/1431455	due by 11:59pm

Date	Details	Due
	 <u>Week 4 Attendance and Participation</u> (https://canvas.fsu.edu/courses/195838/assignments/1430943)	due by 11:59pm
Thu Feb 3, 2022	 <u>Course: Introduction to Writing Functions in R</u> (https://canvas.fsu.edu/courses/195838/assignments/1431456)	due by 11:59pm
	 <u>Week 5 Attendance and Participation</u> (https://canvas.fsu.edu/courses/195838/assignments/1430944)	due by 11:59pm
	 <u>Course: Object-Oriented Programming with S3 and R6 in R</u> (https://canvas.fsu.edu/courses/195838/assignments/1431457)	due by 11:59pm
Thu Feb 10, 2022	 <u>Week 6 Attendance and Participation</u> (https://canvas.fsu.edu/courses/195838/assignments/1430942)	due by 11:59pm
	 <u>R Programming Assessment</u> (https://canvas.fsu.edu/courses/195838/assignments/1431458)	due by 11:59pm
	 <u>Week 7 Attendance and Participation</u> (https://canvas.fsu.edu/courses/195838/assignments/1430945)	due by 11:59pm
Thu Feb 17, 2022	 <u>Course: Introduction to SQL</u> (https://canvas.fsu.edu/courses/195838/assignments/1431497)	due by 11:59pm
	 <u>Week 8 Attendance and Participation</u> (https://canvas.fsu.edu/courses/195838/assignments/1430946)	due by 11:59pm
Thu Feb 24, 2022	 <u>Course: Joining Data in SQL</u> (https://canvas.fsu.edu/courses/195838/assignments/1431498)	due by 11:59pm
	 <u>Week 9 Attendance and Participation</u> (https://canvas.fsu.edu/courses/195838/assignments/1430947)	due by 11:59pm
Thu Mar 3, 2022		

Date	Details	Due
	 <u>Course: Intermediate SQL</u> https://canvas.fsu.edu/courses/195838/assignments/1431499	due by 11:59pm
Thu Mar 10, 2022	 <u>Week 10 Attendance and Participation</u> https://canvas.fsu.edu/courses/195838/assignments/1430948	due by 11:59pm
	 <u>Course: PostgreSQL Summary Stats and Window Functions</u> https://canvas.fsu.edu/courses/195838/assignments/1431501	due by 11:59pm
	 <u>Week 11 Attendance and Participation</u> https://canvas.fsu.edu/courses/195838/assignments/1430949	due by 11:59pm
Thu Mar 24, 2022	 <u>Course: Functions for Manipulating Data in PostgreSQL</u> https://canvas.fsu.edu/courses/195838/assignments/1431503	due by 11:59pm
	 <u>Data Analysis in SQL (PostgreSQL) Assessment</u> https://canvas.fsu.edu/courses/195838/assignments/1431556	due by 11:59pm
Thu Mar 31, 2022	 <u>Week 12 Attendance and Participation</u> https://canvas.fsu.edu/courses/195838/assignments/1430950	due by 11:59pm
	 <u>Course: Student Choice 1</u> https://canvas.fsu.edu/courses/195838/assignments/1431561	due by 11:59pm
Thu Apr 7, 2022	 <u>Week 13 Attendance and Participation</u> https://canvas.fsu.edu/courses/195838/assignments/1430951	due by 11:59pm
	 <u>Course: Student Choice 2</u> https://canvas.fsu.edu/courses/195838/assignments/1431562	due by 11:59pm
Thu Apr 14, 2022	 <u>Week 14 Attendance and Participation</u> https://canvas.fsu.edu/courses/195838/assignments/1430952	due by 11:59pm

Date	Details	Due
Thu Apr 21, 2022	 <u>Course: Student Choice 3</u> <u>(https://canvas.fsu.edu/courses/195838/assignments/1431563)</u>	due by 11:59pm
	 <u>Week 15 Attendance and Participation</u> <u>(https://canvas.fsu.edu/courses/195838/assignments/1430953)</u>	due by 11:59pm
	 <u>Course: Student Choice 4</u> <u>(https://canvas.fsu.edu/courses/195838/assignments/1431564)</u>	due by 11:59pm