

Quantitative Methods and Analysis in Education II  
EPRS 8540  
Summer 2021

Instructor: T. Chris Oshima, Professor in the Dept. of Ed. Policy Studies  
Office: Room 478 College of Ed. Bldg.

e-mail: [oshima@gsu.edu](mailto:oshima@gsu.edu)

Web for Courses: <http://coshima.davidrjifikis.com/>

Virtual (On-Line) Office Hours: by appointment

WebEx: Dr. Chris Oshima's Webex Room

<https://gsumeetings.webex.com/meet/oshima>

**Join by phone**

+1-415-655-0002 US Toll  
Access code: 731 746 506  
Host PIN: 4229

Course Requirements

Class Schedule: 6/7/2021 - 7/26/2021  
(Exam 1 Tue & Wed 6/29-6/30)  
(Exam 2 Tue & Wed 7/20-7/21)

Texts: Stevens, J.P. (2007). *Intermediate statistics: A modern approach*. Third Edition. Lawrence Erlbaum Associates. Taylor & Frances Group, New York. (Required)

Huck, S. W. (2011). Reading statistics and research. Sixth Edition. Pearson Education Inc. (**Optional**)

Floyd, T., Wright, K., Russell, A., Beggs R, May,G. & Oshima, T.C. (2014). SPSS for windows: A survival guide. (**Available at iCollege. Free**)

Class notes available at  
<http://coshima.davidrjifikis.com/>

On-Line Resources: Readingstats.com <http://readingstats.com/>

HyperStat Online <http://davidmlane.com/hyperstat/index.html>

Rice Virtual Lab <http://onlinestatbook.com/rvls.html>

Etc.

Prerequisite: Quantitative Methods and Analysis 1

Exams: (Exam 1 Tue & Wed 6/29-6/30)

(Exam 2 Tue & Wed 7/20-7/21)

Quizzes & Assignments: There will be weekly on-line quizzes ('Quizzes' in iCollege) Out of all quizzes, the lowest grade will be dropped to calculate the mean score of the quizzes. There will be four assignments ('Assignments' in iCollege). Out of all assignments, the lowest grade will be dropped to calculate the mean score of the assignments.

Computer/Writing Project:

There is no project for the summer semester.

Grades:

Grades will be based on the student's performance on the two exams (Exam 1 and Exam 2), the mean score of quizzes, and the mean score of assignments. They are weighted as follows:  $.30 \times \text{Exam 1} + .30 \times \text{Exam 2} + .20 \times \text{Mean Quiz Score} + .20 \times \text{Assignment}$ .

Cutting scores of 90, 80, 70, 60, and 0 will apply for grades A, B, C, D, and F, respectively.

All the assignments have to be completed to obtain credits for the class. Make-up exams may be given with the instructor's permission.

Participation will not be graded. However, active participation on-line (via discussion, e-mail, etc. in iCollege) is required and expected. If the instructor notices a lack of participation, a notice will be given to the student via e-mail in iCollege. After two such notices, if the student fails to actively participate, then **the course grade will be lowered by 10%**.

Academic Honesty:

Please see the section of the general catalog which describes the university policy on academic honesty. The policy provides descriptions of what violates the policy and the penalties that may be imposed for violations. Departmental policy authorizes professors to assign failing grades for any work that does not meet the standards of academic honesty. Any violation of academic honesty may result in a failing grade in a course.

**Please note that all quizzes, exams, and assignments are done INDEPENDENTLY.** As this is an online course, all quizzes, exams, and assignments are open book and students can also use the Internet. **However, students cannot seek help from other individuals for quizzes, exams, and assignments.** Any questions should be discussed openly in the discussion board (DB) in iCollege. **Work not performed independently will result in a failing grade.**

Note:

The midpoint for the 6-week summer semester is 7/2/2021.

[Course Description](#)

This is the second course in a sequence of three courses (including the core requirement EPRS 8530 and the elective courses EPRS 8540 and EPRS 8550) designed to provide theoretical and applied understandings of quantitative research. In

this course, fundamentals of experimental design and quasi-experimental design are built upon for instruction in research designs of more than two populations, designs with more than one independent variable, repeated-measures designs, and the ANOVA techniques appropriate for these designs. Fundamentals of hypotheses testing are extended with the introduction of sampling distributions and power analysis, and this course introduces designs for multiple predictor variables of a single criterion variable. Skills at using SPSS, reviewing research articles, and writing research reports are further developed.

#### Course Goals

Students will be able to:

1. Determine sample size for a target level of power before data are collected.
2. Conduct a power analysis after results are obtained.
3. Plan and analyze data from a study that:
  - a. involves three or more populations of interest in an experimental design or a quasi-experimental design.
  - b. involves two or more independent variables in an experimental design or a quasi-experimental design.
  - c. incorporates a repeated-measures design.
  - d. controls the influence of a covariate of the dependent variable.
  - e. involves two or more predictor variables of a single criterion variable.
4. Select and conduct the appropriate analysis for and interpret, in terms of the research query, the results from data from advanced experimental and quasi-experimental designs.
5. Explain statistical significance in terms of a sampling distribution.
6. Demonstrate at least intermediate ability to write a Method section and a Results section of a research report.

#### Outline

Please see the separate pdf titled "Outline" for the dated outline.

**Note: The course syllabus provides a general plan for the course; deviation may be necessary.**

## Overview of the On-Line EPRS8540

Welcome to our on-line EPRS8540. In this course, instructions will be given using the multimedia technology via iCollege (D2L/Brightspace - Note: I may use the name "D2L" instead of "iCollege" throughout the semester.). The instructional materials include on-line videos, on-line resources, and of course, traditional textbooks. Learning outcome will be assessed via on-line quizzes, assignments, and exams.

1. **Meeting Times:** We will not meet face-to-face in this course. However, we will be "meeting" and communicating in the cyber space throughout the course. Students are expected to keep up with the pace by following the outline posted on my Web. In the outline, specific videos and reading materials are presented week by week. This is a non-synchronous on-line course to allow a maximum flexibility for students. The instructors will be available via email. An online meeting can be requested.

2. **System Requirements:** Each student needs to have an access to internet. A fast access to internet (DSL, etc.) is strongly recommended. Students will have an access to videos, etc. via iCollege. Other materials (handouts, etc.) are also available on my Web site.

3. **Computer Knowledge:** No special computer knowledge is necessary beyond basic computer skills. If one can use iCollege and knows how to visit Web sites, then he or she is ready for this course. Software knowledge of Excel or SPSS from Quant 1 is expected. SPSS will be used in this course. SPSS is available to all GSU students via VCL.GSU.edu.

4. **Communications:** Communications between the instructor and students and among students are maintained in the discussion board (DB) and e-mail in iCollege. Students are expected to check iCollege **daily** during the week. Students are responsible for reading the announcements from instructor (DB1 in Discussions). The communication is open all the time. The instructor will do her best to reply within 24 hours on weekdays. Please understand that there is no reply/posting from the instructor on Sundays.

5. **Learning Outcome:** Quizzes are administered on-line via iCollege. The assignments will be turned in via iCollege using the Dropbox in iCollege. The two exams are administered via iCollege. The details of the exams will be announced later. Exam 1 covers the first half of the course and Exam 2 covers the second half of the course.

6. **Collaborate Appointments:** Please email the instructor if you would like to talk with the instructor via WebEX (former Collaborate). It can be one-on-one or as a group.

7. **Participation:** Participation is very important in an online course. You will be expected to participate actively and to **contribute substantive discussion messages as much as possible**. Please note that both quantity and quality are important considerations when it comes to participation. For example, a message which says simply, "I agree," does not constitute participation, because it does not add anything of substance to the discussion. You must add something of substance to the discussion on each occasion—this would consist of new ideas, your perspectives, pointed follow-up questions, etc.

8. **Tips for Summer Students:**

- General Advice
  - This is a 7-week summer course which covers exactly the same materials as those presented in the regular 14-week semester, which means the course moves about twice as fast as the regular semester. The only difference between the summer semester and the regular semester for this course is that, in the summer semester, (1) there is no project and (2) there are no scheduled Collaborate sessions. Therefore, please choose carefully between the summer semester vs. regular semester to suits your needs. The summer course is an accelerate Quant 2. If you prefer the regular pace, it is recommended that you take this course during the Fall or Spring semester.



Summer Quant 2



Fall/Spring Quant 2

- An online course saves time in commuting and parking, etc., but it will not save time in learning. It takes just the same time to study the materials as the face-to-face course does. The online course would be most suitable for individuals who are busy but extremely motivated to learn and who are good at time management.
- Quiz
  - All the quizzes are due on Thursday and Monday, 11:59PM. Note in most weeks, there are two quizzes per week.
  - It is possible to go back and change your answers during the session.
  - Be sure to save your answers before you submit.
  - Do not panic, if a technical failure occurs. Instructors can reset your quiz.
  - Each quiz is meant to be a 20-minute quiz. Please try to finish the quiz within 20 minutes. The time spent on the quiz, as well as the score, will be reported to the instructor. Excessive overtime may result in a lower score.
- Assignments:
  - Assignments are returned with comments. Be sure to read comments entered in the Feedback. If you have multiple submissions, comments will be appended in the Feedback.
  - All assignments in the summer are due on Thursdays. This is the LAST day you can submit the assignments. If you submit early, you will have an opportunity to revise and resubmit.
  - When you turn in files, please name each file as follows. Suppose your name is Joe Smith. Your file name for Assignment 1 will be: Joe\_Smith\_Assignment\_1.doc. If you revise and resubmit, then the file name will be: Joe\_Smith\_Assignment\_1\_Revised\_1.doc. If you revise and resubmit one more time, then it will be: Joe\_Smith\_Assignment\_1\_Revised\_2.doc. The extension (\*.doc) may differ according to the software.
- Pace
  - The course moves week by week (and FAST). Discussion Board (DB) will be used to help students understand the week's materials. Although it is up to the individual how to study for this course, here is an example how one can study, say in Week 2:
    - Mon - Wed: Study Class 3 materials (Videos, Reading, DB, etc.)
    - Wed: Take Quiz 2 (Covers Class 3), Start Assignment 1 and submit

by Thursday midnight.

- Wed - Fri: Study Class 4 materials (Videos, Reading, DB, etc.)
- Fri: Take Quiz 3 (Covers Class 4)
- Weekend - Wrap up the week's study and move ahead for the next week



- iCollege
  - Please use iCollege for all the communications, including e-mail and submissions of assignments and projects.
  - In the past, students experienced occasional problems with attachment in iCollege/D2L. If that happens, you may want to exit iCollege and come back in and try again. That sometimes solves the problem.
  - Check iCollege often, **every day** for the summer course.

Our goal is to help you learn quantitative methods as effective and enjoyable as possible, and in the case of summer, as fast as possible as well. If there are any comments/feedback/requests, please feel free to e-mail me at any time [oshima@gsu.edu](mailto:oshima@gsu.edu).

GOOD LUCK!





## 2021 Summer Schedule Guide

(See OUTLINE for details. Only due dates are listed here.)

“Q1 – Q10” indicates “Quizzes 1 – Quizzes 10” and “A1 – A4” indicates “Assignment 1 – Assignment 4”

**RED** indicates Quizzes due dates: Available any time up to the due date (11:59 PM)

**GREEN** indicates Assignments due dates: Submission accepted until the due date (11:59 PM)

**BLUE** indicates Exams: Exams are available for two days, 6:00 AM Tue to 11:59 PM Wed. They need to be taken in 2 consecutive hours.

Personal Data and Profile due

	Sun	Mon	Tue	Wed	Thur	Fri	Sat
Week 1		6/7	8	9	10 Q0 due	11	12
Week 2	13	14 Q1 due	15	16	17 Q 2 due A1 due	18	19
Week 3	20	21 Q 3 due	22	23	24 Q4 due A2 due	25	26
Week 4	27	28 Q5 due	29 Exam 1	30 Exam 1	7/1	7/2	7/3
Week 5	7/4	5 Q6 due	6	7	8 Q7 due A3 due	9	10
Week 6	11	12 Q8 due	13	14	15 Q9 due A4 due	16	17
Week 7	18	19 Q10 due	20 Exam 2	21 Exam 2			