

# Course Information

Course number and title: Soc680 Advanced Social Research Methods (CRN: 19399)

Meeting time: Tues. & Thurs. 9:00pm-10:15pm

Modality: Face-to-face

Location: Stone (STON) 345

Course credit hours: 3.0

# Information About the Instructor

**Instructor**

Dr. Jeremy Reynolds

Email: reyno113@purdue.edu

Office hours: by appointment

Physical Office Location: Stone Hall 307

# Course Description

This is the second course in the statistics sequence for PhD students in sociology. The first course introduced descriptive and basic inferential statistics and provided an introduction to ordinary least squares (OLS) regression. This course builds on that foundation by covering a number of more advanced topics.

# Learning Outcomes

Upon successful completion of this course, you will be able to:

1. Design, interpret, and evaluate OLS regression models that include non-linear relationships, mediation, or moderation
2. Design, interpret, and evaluate regression models for multilevel or longitudinal data (e.g., fixed effects models, random intercept models, and random coefficient models)
3. Design, interpret, and evaluate regression models for categorical dependent variables (e.g., logistic, ordered logistic, and multinomial logistic regression)
4. Apply your abstract statistical knowledge using the statistical program called Stata.

# How to Succeed in this Course

* Review all the assigned readings
* Ask questions!
* Collaborate on and submit weekly assignments
* Begin planning for the final project early.

# Learning Resources, Technology, & Texts

# Required Texts

Allison, Paul D. 1999. *Multiple Regression: A Primer*. Thousand Oaks, CA: Pine Forge Press.

(Abbreviated below as MR.)

# On-line Resources

We will make extensive use of the Brightspace site for this course. Please explore it early and often.

# Other Books

I will ask you to read excerpts from the two books below, but you do not need to buy them.

Rabe-Hesketh, Sophia and Anders Skrondal. 2012. Multilevel and Longitudinal Modeling Using Stata. Volume 1: Continuous Responses. College Station, TX: Stata Press.

Long, J. Scott and Jeremy Freese. 2014. Regression Models for Categorical Dependent Variables Using Stata. 3rd ed. College Station, TX: Stata Press.

# Statistical Software

Download a free copy of Stata for your own computer through the ItaP [Community Hub](https://communityhub.purdue.edu/storefront/overview).

Stata and programs like it (e.g., SPSS, SAS, R) are essential tools for quantitative research. Learning to use them takes time, but the pay-off is substantial. *I want your experience with Stata to be as rewarding as possible, so if you get stuck, please ask for help (from me or other graduate students) before you get too frustrated.* Stata is also available in the Sociology computer lab (Stone 342).

# Protect Purdue Compliance

The [Protect Purdue Plan](https://protect.purdue.edu/plan/), which includes the [Protect Purdue Pledge](https://protect.purdue.edu/pledge/?_ga=2.210401429.1213937682.1590527202-1814553957.1589408073), is campus policy and as such all members of the Purdue community must comply with the required health and safety guidelines. Required behaviors in this class include: staying home and contacting the Protect Purdue Health Center (765-496-4636) if you feel ill or know you have been exposed to the virus, wearing a mask [in classrooms and campus building](https://protect.purdue.edu/updates/face-covering-protocols/), at all times (e.g., no eating/drinking in the classroom), disinfecting desk/workspace prior to and after use, maintaining proper social distancing with peers and instructors (including when entering/exiting classrooms), refraining from moving furniture, avoiding shared use of personal items, maintaining robust hygiene (e.g., handwashing, disposal of tissues) prior to, during and after class, and following all safety directions from the instructor.

Students who are not engaging in these behaviors (e.g., wearing a mask) will be offered the opportunity to comply. If non-compliance continues, possible results include instructors asking the student to leave class and instructors dismissing the whole class. Students who do not comply with the required health behaviors are violating the University Code of Conduct and will be reported to the Dean of Students Office with sanctions ranging from educational requirements to dismissal from the university.

Any student who has substantial reason to believe that another person in a campus room (e.g., classroom) is threatening the safety of others by not complying (e.g., not wearing a mask) may leave the room without consequence. The student is encouraged to report the behavior to and discuss next steps with their instructor. Students also have the option of reporting the behavior to the [Office of the Student Rights and Responsibilities](https://www.purdue.edu/odos/osrr/). See also [Purdue University Bill of Student Rights](https://catalog.purdue.edu/content.php?catoid=7&navoid=2852#purdue-university-bill-of-student-rights).

# COVID-19 Attendance Policy

*In the current context of the COVID-19 pandemic, in-person attendance will not be a factor in final grades, and I will do everything I can to help any students who must be quarantined. However, this is an in-person course, and I will not be able to fully replicate the in-person experience in a virtual format. Students are expected to attend class when they are able.* [Click here for help mental health resources designed to help you cope with stress during COVID-19.](https://www.purdue.edu/hr/CHL/healthyboiler/news/newsletter/2020-04/coping_with_stress.php)

**If you experience any symptoms of COVID-19 or suspect you may have been exposed to someone with COVID-19 stay home and call the Protect Purdue Health Center at 765-496-4636.**

# Academic Support During COVID-19 Quarantine/Isolation

If you must quarantine or isolate due to COVID-19, you should have access to an Academic Case Manager who can support you during that time. Your Academic Case Manager can be reached at [acmq@purdue.edu](mailto:acmq@purdue.edu) and will provide you with general guidelines/resources for communicating with your instructors and learning remotely. If you are too sick to progress in this course, notify your academic case manager and me. We will make arrangements based on your particular situation. In such cases, I also recommend that you contact the Director of Graduate Studies for support.

# Instructor’s Face-to-Face Office Hours

Tuesday after class and by appointment.

# Assignments and Grading

**Assignments** (50% of grade)

For most weeks there will be an assignment that requires you to apply the knowledge and skills we discussed that week. Your assignments will usually be posted on Thursday or Friday and due the following Tuesday. They must be submitted as MS Word documents through Brightspace. I encourage you to work on the assignments collaboratively, but the work you submit must be your own, and everyone must submit the assignments individually.

**Analysis Memo** (40% of grade)

Instead of a final exam, I will ask you to demonstrate what you have learned this semester by working independently (but in consultation with me) to write an analysis memo. This memo is like an expanded version of the data, methods, and results sections of a typical quantitative journal article. I encourage you to base this memo on work that you are currently doing outside this class. This may include your thesis, a paper you are writing, or even a collaborative project (e.g., work you are doing as a research assistant). I will provide more detailed instructions during the semester.

**Presentation** (10% of final grade)

In the last week of the semester, you will present the analysis described in your analysis memo to the rest of the class. This presentation will be something like the presentations people give at professional conferences. The presentation should be 5 to 10 minutes long and include slides. I will provide more detailed instructions during the semester.

# Numeric to Letter Grade Conversion

Letter grades for the course are based on the cut-offs below.

|  |  |  |  |
| --- | --- | --- | --- |
| 97-100= A+ | 87 to 89=B+ | 77 to 79=C+ | 67 to 69=D+ |
| 93-96=A | 83 to 86=B | 73 to 76=C | 63 to 66=D |
| 90 to 92=A- | 80 to 82=B- | 70 to 72=C- | 60 to 62=D- |
| 59 and below = F | | | |

# Missed or Late Work

If you anticipate problems following the course schedule or you are unable to complete an assignment by the due date, please contact me as soon as possible to discuss your situation.

# Incompletes

A grade of incomplete (I) will be given only in unusual circumstances. To receive an “I” grade, a written request must be submitted before the last day of class, and approved by the instructor. The request must describe the circumstances, along with a proposed timeline for completing the course work. Submitting a request does not ensure that an incomplete grade will be granted.

# Academic Integrity

When completing weekly assignments in this class, you may always use the book, your notes, and materials I have provided. I also encourage you to collaborate with classmates. The work you submit, however, must be your own. Students found in violation of this policy will face disciplinary action.

Academic integrity is one of the highest values that Purdue University holds. Individuals are encouraged to alert university officials to potential breaches of this value by either [integrity@purdue.edu](mailto:integrity@purdue.edu) or by calling 765-494-8778.  While information may be submitted anonymously, the more information you submit, the greater the opportunity for the university to investigate the concern.

The [Purdue Honor Pledge](https://www.purdue.edu/odos/osrr/honor-pledge/about.html) “As a boilermaker pursuing academic excellence, I pledge to be honest and true in all that I do. Accountable together - we are Purdue"

*You may also want to refer students to Purdue's* [*Student Guide for Academic Integrity*](https://www.purdue.edu/odos/osrr/academic-integrity/index.html)*.*

# Course Schedule

*The schedule below is a general plan for the course.*

*Deviations may be necessary.*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Week** |  | **Date** |  | **Topic/Event** | **Readings** | **Assign.**  **Due** |
| 1 | Jan. | 19 | Tues. | Course Overview |  |  |
|  | Jan. | 21 | Thurs. | Introduction to multiple regression | Allison 1999 Chap 1-2 |  |
| 2 | Jan. | 26 | Tues. | Building a multiple regression | [Annotated Stata Regression O](https://stats.idre.ucla.edu/stata/output/regression-analysis/)utput | 1 |
|  | Jan. | 28 | Thurs. | Categorical predictors | [Regression with Stata](https://stats.idre.ucla.edu/stata/webbooks/reg/chapter3/regression-with-statachapter-3-regression-with-categorical-predictors/) 3.0-3.4 |  |
| 3 | Feb. | 2 | Tues. | What can go wrong with multiple reg.? | Allison 1999 Chap 3 | 2 |
|  | Feb. | 4 | Thurs. | How does regression work? | Allison 1999 Chap 5 |  |
| 4 | Feb. | 9 | Tues. | Assumptions of multiple regression | Allison 1999 Chap 6 | 3 |
|  | Feb. | 11 | Thurs. | Regression diagnostics | [Regression with Stata Chap 2](https://stats.idre.ucla.edu/stata/webbooks/reg/chapter2/stata-webbooksregressionwith-statachapter-2-regression-diagnostics/) |  |
| 5 | Feb. | 16 | Tues. | Non-linear relationships | Allison 1999 Chap 8 | 4 |
|  | Feb. | 18 | Thurs. | Interactions (moderation) | MR 8 & Williams [l51,](https://www3.nd.edu/%7Erwilliam/stats2/l51.pdf) [l53](https://www3.nd.edu/%7Erwilliam/stats2/l53.pdf) |  |
| 6 | Feb. | 23 | Tues. | Nested models (and mediation) | Hayes chapters 3 & 4 excerpts | 5 |
|  | Feb. | 25 | Thurs. | Clustered data | 2 paragraphs for Analysis Memo due | Memo |
| 7 | Mar. | 2 | Tues. | Fixed effects models | [Williams 2018](https://www3.nd.edu/~rwilliam/stats3/Panel00-Linear%20Models.pdf) | 6 |
|  | Mar. | 4 | Thurs. | Fixed effects models | Brüderl & Ludwig 2015 |  |
| 8 | Mar. | 9 | Tues. | Fixed effects models |  | 7 |
|  | Mar. | 11 | Thurs. | Variance components models | [Multilevel linear models in Stata, part 1](https://blog.stata.com/2013/02/04/multilevel-linear-models-in-stata-part-1-components-of-variance/) |  |
| 9 | Mar. | 16 | Tues. | Random intercept models | Rabe-Hesketh & Skrondal Chap 3 |  |
|  | Mar. | 18 | Thurs. | **Reading Day (no class)** | DV & focal vars for Analysis due | Memo |
| 10 | Mar. | 23 | Tues. | Random coefficient models | Rabe-Hesketh & Skrondal Chap 4 | 8 |
|  | Mar. | 25 | Thurs. | Random coefficient models |  |  |
| 11 | Mar. | 30 | Tues. | Binary outcomes | UCLA [Logistic Regression with Stata](https://stats.idre.ucla.edu/stata/webbooks/logistic/chapter1/logistic-regression-with-statachapter-1-introduction-to-logistic-regression-with-stata/) | 9 |
|  | Apr. | 1 | Thurs. | Binary outcomes | Long & Freese Chap 5 (skip advanced) |  |
| 12 | Apr. | 6 | Tues. | Binary outcomes | [Stata Annotated Output: Logistic](https://stats.idre.ucla.edu/stata/output/logistic-regression-analysis/) Reg. |  |
|  | Apr. | 8 | Thurs. | Binary outcomes | Long & Freese Chap 6 (skip advanced) |  |
| 13 | Apr. | 13 | Tues. | **Reading Day (no class)** |  | 10 |
|  | Apr. | 15 | Thurs. | Ordinal outcomes | Long & Freese Chap 7 (skip advanced)  [Stata Annotated Output Ordered](https://stats.idre.ucla.edu/stata/output/ordered-logistic-regression/) Reg. |  |
| 14 | Apr. | 20 | Tues. | Ordinal outcomes | Interpretation of a reg. table due | Memo |
|  | Apr. | 22 | Thurs. | Nominal outcomes | Long & Freese Chap 8 (skip advanced) |  |
| 15 | Apr. | 27 | Tues. | Presentations |  | 11 |
|  | Apr. | 29 | Thurs. | Presentations |  |  |
|  | May | 4 | Tues. | ---**Analysis Memo Due by 5:00pm---** |  |  |

# Nondiscrimination Statement

Discrimination or harassment of any kind will not be tolerated in this class.

Purdue University prohibits discrimination against any member of the University community on the basis of race, religion, color, sex, age, national origin or ancestry, genetic information, marital status, parental status, sexual orientation, gender identity and expression, disability, or status as a veteran.

*Purdue University is committed to maintaining a community which recognizes and values the inherent worth and dignity of every person; fosters tolerance, sensitivity, understanding, and mutual respect among its members; and encourages each individual to strive to reach his or her own potential. In pursuit of its goal of academic excellence, the University seeks to develop and nurture diversity. The University believes that diversity among its many members strengthens the institution, stimulates creativity, promotes the exchange of ideas, and enriches campus life. (See also* [*Purdue’s Nondiscrimination Policy Statement*](https://www.purdue.edu/purdue/ea_eou_statement.php)*.)*

**Name and Pronoun Usage**

Please let me know what name and pronouns you use so I can honor your preferences and address you properly. If you would like more information about gender- and sexual-identity, gender-neutral and inclusive language, or the role gender plays in our culture, please visit these resources:

* Gender Spectrum – [Understanding Gender](https://www.genderspectrum.org/quick-links/understanding-gender/)
* The Genderbread Person [infographic](http://itspronouncedmetrosexual.com/2012/01/the-genderbread-person/)
* Purdue LGBTQ Center - <https://www.purdue.edu/lgbtq/>

# Students with Disabilities

Purdue University strives to make learning experiences as accessible as possible. If you anticipate or experience physical or academic barriers based on disability, you are welcome to let me know so that we can discuss options. I also encourage you to contact the Disability Resource Center at: [drc@purdue.edu](mailto:drc@purdue.edu) or by phone: 765-494-1247.

# Emergency Preparation

While COVID-19 is currently a major focus of our campus health and safety preparations, we must also take time to be prepared for other possible emergencies as we would in any semester. Purdue University is a very safe campus and there is a low probability that a serious incident will occur here at Purdue. However, just as we receive a “safety briefing” each time we get on an aircraft, we want to emphasize our emergency procedures for evacuation and shelter-in-place incidents. Our preparedness will be critical IF an unexpected event occurs!

Emergency preparedness is your personal responsibility. Purdue University is actively preparing for natural disasters or human-caused incidents with the ultimate goal of maintaining a safe and secure campus. Please review the following procedure:

* + - For any emergency text or call 911.
    - There are more than 300 Emergency Telephones (aka blue lights) throughout campus that connect directly to the Purdue Police Department (PUPD). If you feel threatened or need help, push the button and you will be connected right away.
    - If we hear a fire alarm, we will immediately evacuate the building and proceed to the **Memorial Mall**. Do not use the elevator. Go over the evacuation route (see specific Building Emergency Plan).
    - If we are notified of a Shelter in Place requirement for a tornado warning we will stop classroom or research activities and shelter in the lowest level of this building away from windows and doors. Our preferred location is **Wetherill 200**.
    - If we are notified of a Shelter in Place requirement for a hazardous materials release, we will shelter in our classroom shutting any open doors and windows.
    - If we are notified of a Shelter in Place requirement for an active threat such as a shooting, we will shelter in a room that is securable preferably without windows. Our preferred location is **Wetherill 200**.

*Always seek additional information by all means possible…Purdue Home page, email alert, TV, radio, etc…review the Purdue* [*Emergency Warning Notification System*](http://www.purdue.edu/ehps/emergency_preparedness/warning-system.html) *site.*

For more information see the two links below:

* + [Emergency Procedures Guide](https://www.purdue.edu/emergency_preparedness/flipchart/index.html)
  + [Key Emergency Preparedness Resources](http://www.purdue.edu/emergency_preparedness)
  + [FBI Active Shooter Resources site](https://www.fbi.gov/about/partnerships/office-of-partner-engagement/active-shooter-resources))

# Mental Health Statement

* **If you find yourself beginning to feel some stress, anxiety and/or feeling slightly overwhelmed, try** [**WellTrack**](https://purdue.welltrack.com/)**.** Sign in and find information and tools at your fingertips, available to you at any time.
* **If you need support and information about options and resources**, please see the [Office of the Dean of Students](http://www.purdue.edu/odos) for drop-in hours (M-F, 8 am- 5 pm).
* **If you’re struggling and need mental health services**: Purdue University is committed to advancing the mental health and well-being of its students. If you or someone you know is feeling overwhelmed, depressed, and/or in need of mental health support, services are available. For help, such individuals should contact [Counseling and Psychological Services (CAPS)](https://www.purdue.edu/caps/) at 765-494-6995 during and after hours, on weekends and holidays, or by going to the CAPS office on the 2nd floor of the Purdue University Student Health Center (PUSH) during business hours.

# Netiquette

The success of large classes depends on mutual respect and cooperation, especially when they are online. We have different experiences and opinions, and sharing them helps us learn. But to learn from each other, we must work to avoid things that get in the way of learning and be willing to apologize when we make mistakes. I will expect you to treat me, your teaching assistants, and your classmates with respect. You can expect that I will treat you with respect.

Working together, we can learn from our diversity while maintaining mutual respect. Some Netiquette rules may help:

* Do not dominate any discussion. Give other students the opportunity to share their thoughts.
* Do not use offensive language.
* Do not capitalize all letters (this suggests shouting).
* Try to avoid slang and sarcasm. They increase the chances of a misunderstanding.
* Keep an open-mind and be willing to express your opinion.
* Think and edit before you push the “Send” button.

# Violent Behavior Policy

Purdue University is committed to providing a safe and secure campus environment for members of the university community. Purdue strives to create an educational environment for students and a work environment for employees that promote educational and career goals. Violent Behavior impedes such goals. Therefore, Violent Behavior is prohibited in or on any University Facility or while participating in any university activity. See the [University’s full violent behavior policy](https://www.purdue.edu/policies/facilities-safety/iva3.html) for more detail.

# Diversity and Inclusion Statement

**In our discussions, structured and unstructured, we will explore a variety of challenging issues, which can help us enhance our understanding of different experiences and perspectives. This can be challenging, but also very rewarding. Everyone should remember the following points:**

* **We are all in the process of learning about others and their experiences. Please speak with me if something has made you uncomfortable.**
* **Intention and impact are not always aligned: we should respect the impact our words can have on someone even if it was not our intention.**
* **We all come to the class with a variety of experiences and a range of expertise. We should respect these in others while critically examining them in ourselves.**

# Course Evaluation

During the last two weeks of the course, you will be provided with an opportunity to evaluate this course and your instructor. Purdue uses an online course evaluation system. You will receive an official email from evaluation administrators with a link to the online evaluation site. Your participation is an integral part of this course, and your feedback is vital to improving education at Purdue University. I strongly urge you to participate in the evaluation system.

# Disclaimer

*This syllabus is subject to change. I will announce any necessary changes by email and through Brightspace.*