

PSY 5102: Advanced Statistics for Psychological and Behavioral Research 2

Instructor: Dr. Virgil Zeigler-Hill
Course Section #: 11989-001
Class Time: Tu/Th 10:00am-11:47am
Office Hours: Th 1:00pm-3:00pm

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Classroom: 130 Pryale Hall

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| Course Description | <p>This course is the second course of a two-semester course sequence concerning statistics and data analysis. During this course, we will focus on regression and a variety of special topics (e.g., SEM, multilevel modeling). We will cover computational details but we will focus more of our attention on understanding and interpreting analyses.</p> <p>Course Procedures: Lectures and discussion</p> <p>Recommended Textbooks: Field, A. (2013). <i>Discovering statistics using IBM SPSS statistics</i>. New York, NY: Sage. Hayes, A. F. (2013). <i>Introduction to mediation, moderation, and conditional process analysis: A regression-based approach</i>. New York, NY: Guilford. Aspelmeier, J. E., & Pierce, T. W. (2011). <i>SPSS: A user-friendly approach</i>. New York, NY: Worth. Tabachnik, B. G., & Fidell, L. S. (2013). <i>Using multivariate statistics</i> (6th ed.). Boston, MA: Pearson.</p> |
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| Outcomes & Objectives | <p>Course Objectives:</p> <ol style="list-style-type: none">1. Learn basic concepts concerning regression.2. Demonstrate an understanding of nonparametric statistics.3. Develop an understanding of advanced statistical methods.4. Demonstrate competence with SPSS.5. Display competence in interpreting and describing statistical results. |
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| Student Conduct | <p>Student Conduct: Students are expected to adhere to the guidelines for student conduct outlined in the Graduate Student Handbook.</p> <p>Policy on Academic Misconduct: The University's regulations that relate to academic misconduct will be fully enforced. Any student suspected of cheating and/or plagiarism will be reported to the Dean of Students and, thereafter, to the Academic Conduct Committee for adjudication. Anyone found guilty of academic misconduct in this course may receive a course grade of 0.0, in addition to any penalty assigned by the Academic Conduct Committee. Students found guilty of academic misconduct by the Academic Conduct Committee may face suspension or permanent dismissal. The full policy on academic misconduct can be found in the General Information section of the Graduate Catalog.</p> |
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Attendance: It is expected that you will attend class regularly. However, if you need to miss class because of an emergency (e.g., severe illness, death of a close relative), then let me know as soon as possible.

Excused Absence Policy: University excused absences apply to participation as an athlete, manager, or student trainer in NCAA intercollegiate competitions, or participation as a representative of Oakland University at academic events and artistic performances approved by the Provost or designee. For the OU excused absence policy, see <http://wwwp.oakland.edu/provost/policies-and-procedures/>

Faculty Feedback: As a student in this class, you may receive “Faculty Feedback” in your OU e-mail if your professor identifies areas of concern that may impede your success in the class. Faculty Feedback typically occurs during weeks 2-5 of the Fall and Winter terms, but may also be given later in the semester and more than once a semester. A “Faculty Feedback” e-mail will specify the area(s) of concern and recommend action(s) you should take. Please remember to check your OU email account regularly as that is where it will appear.

Audio Recording Policy: Students who wish to audio-record lectures may request permission to do so. These recordings may only be used for the purpose of personal study. Students may not share these recordings with other individuals without the consent of the professor. At the conclusion of the semester, students may request permission to keep these recordings if needed, otherwise it is expected that all audio-recordings will be deleted from all electronic recording and storage devices.

Departmental Policy for Resolution of Student Academic-Related Concerns: The student has an obligation to attempt to resolve all academic-related concerns with the instructor. If a suitable solution cannot be reached, then the student should consult the Department of Psychology Procedure for the Resolution of Student Academic-Related Concerns at <https://www.oakland.edu/Assets/Oakland/psychology/files-and-documents/Undergrad-Advising/Resolution%20of%20Student%20Concerns-04-2017-approved%20full%20doc.pdf>

Veteran Support Services: The office of Veteran Support Services (VSS) is responsible for giving support services to more than 300 veterans, service members, and dependents of veterans. VSS is staffed with personnel who are veterans and current or former students. Any student veteran or dependent of a veteran requiring assistance with navigating the Veterans Administration, understanding service-related benefits, or requires referrals to campus and community resources should contact one of the Veterans Liaisons by visiting 116 North Foundation Hall, or phoning 248-370-2010. <http://wwwp.oakland.edu/veterans/>

Do Not Fall Behind: It is critical that you keep up with the material in this class. We will cover a great deal of material this semester so you will have considerable trouble if you fall behind.

Readings: Reading assignments will be given in class.

Class Participation: You are expected to be an active participant in this class. You will learn more effectively if you take part in class by asking questions, answering questions, and engaging in discussions.

Add/Drops & Incompletes: The University add/drop and incomplete grade policies will be explicitly followed. It is your responsibility to be aware of the University deadline dates for adding or dropping the course.

Special Considerations: A student with a documented learning or physical disability must contact the **Office of Disability Support Services**, 103A North Foundation Hall, (248) 370-3266, and inform the professor of special needs during first week of classes. For more information, visit <http://www.oakland.edu/dss>

Grades in this course will be based on evaluations of the following materials: Course grades will be based on homework, quizzes, presentations, and exams.

Homework: Homework assignments will be given to students during class. Late homework assignments will be penalized 20% per day.

Quizzes: Quizzes will be administered during class. These quizzes may be given without advance notice. A penalty may be assessed for students who are late for a quiz. This penalty will consist of a 2% deduction for each minute that students are late for those who are more than 5 minutes late (e.g., a student who is 20 minutes late will have 40% deducted from his quiz score).

Research Proposal Presentations: Students will be responsible for presenting a research proposal that will involve some of the advanced statistical methods that we will cover this semester. This proposal should consist of a 10-minute PowerPoint presentation followed by a 5-minute question-and-answer session.

Exams: There will be three exams. Each exam will consist of various types of questions. These exams will be cumulative. That is, each exam may cover any information that has been covered up to that point. Each exam will be worth a maximum of 20 points. A penalty may be assessed for students who are late to an exam. This penalty will consist of a 2% deduction for each minute that students are late for those who are more than 5 minutes late (e.g., a student who is 20 minutes late will have 40% deducted from his exam score).

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| Homework | 5 |
| Quizzes | 10 |
| Research Proposal Presentation | 10 |
| Exams | 75 (3 @ 25 each) |
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| TOTAL | 100 |

The following scale will be used to determine the final grade:

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| 100% (4.0) | 90% (3.5) | 80% (3.0) | 70% (2.0) |
| 99% (4.0) | 89% (3.5) | 79% (2.9) | ≤69% (0.0) |
| 98% (3.9) | 88% (3.4) | 78% (2.8) | |
| 97% (3.9) | 87% (3.4) | 77% (2.7) | |
| 96% (3.8) | 86% (3.3) | 76% (2.6) | |
| 95% (3.8) | 85% (3.3) | 75% (2.5) | |
| 94% (3.7) | 84% (3.2) | 74% (2.4) | |
| 93% (3.7) | 83% (3.2) | 73% (2.3) | |
| 92% (3.6) | 82% (3.1) | 72% (2.2) | |
| 91% (3.6) | 81% (3.1) | 71% (2.1) | |

Tentative Schedule

This is an estimate of the topics we will be covering on certain days. The actual content that we will cover on any particular day may differ based on how well students understand the material.

| Date | Topic | Reading |
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| 1-4 | Introduction / Non-Parametric Tests | |
| 1-9 | Non-Parametric Tests / Overview of the General Linear Model | |
| 1-11 | Overview of the General Linear Model | Chapter 8 (Field); Chapter 17 (T&F) |
| 1-16 | Linear Regression | Chapter 2 (Hayes); Chapter 8 (Field); Chapter 5 (T&F) |
| 1-18 | Multiple Regression | Chapter 3 (Hayes); Chapter 8 (Field); Chapter 5 (T&F) |
| 1-23 | Multiple Regression | Chapter 3 (Hayes); Chapter 8 (Field); Chapter 5 (T&F) |
| 1-25 | Multiple Regression: Moderation | Chapters 7-9 (Hayes); Chapter 10 (Field); Chapter 5 (T&F) |
| 1-30 | Multiple Regression: Moderation | Chapters 7-9 (Hayes); Chapter 10 (Field); Chapter 5 (T&F) |
| 2-1 | Multiple Regression: Mediation and Conditional Process Analysis | Chapters 4-6 and 10-12 (Hayes); Chapter 10 (Field); Chapter 5 (T&F) |
| 2-6 | EXAM1 | |
| 2-8 | Multiple Regression: Mediation and Conditional Process Analysis | Chapters 4-6 and 10-12 (Hayes); Chapter 10 (Field); Chapter 5 (T&F) |
| 2-13 | Multiple Regression: Nonlinear Models | Chapter 5 (T&F) |
| 2-15 | Logistic Regression | Chapter 19 (Field); Chapter 10 (T&F) |
| 2-20 | NO CLASS: WINTER RECESS | |
| 2-22 | NO CLASS: WINTER RECESS | |
| 2-27 | Survival/Failure Analysis | Chapter 11 (T&F) |
| 3-1 | Principal Components and Factor Analysis | Chapter 17 (Field); Chapter 13 (T&F) |
| 3-6 | Principal Components and Factor Analysis | Chapter 17 (Field); Chapter 13 (T&F) |
| 3-8 | Structural Equation Modeling | Chapter 14 (T&F) |
| 3-13 | EXAM 2 | |
| 3-15 | Structural Equation Modeling | Chapter 14 (T&F) |
| 3-20 | Structural Equation Modeling | Chapter 14 (T&F) |
| 3-22 | Multilevel Linear Modeling | Chapter 20 (Field); Chapter 15 (T&F) |
| 3-27 | Multilevel Linear Modeling | Chapter 20 (Field); Chapter 15 (T&F) |
| 3-29 | Multilevel Linear Modeling | Chapter 20 (Field); Chapter 15 (T&F) |
| 4-3 | Presenting Results | |
| 4-5 | Presenting Results | |
| 4-10 | Research Proposal Presentations: Day 1 | |
| 4-12 | Research Proposal Presentations: Day 2 | |
| 4-17 | Research Proposal Presentations: Day 3 | |
| 4-19 | FINAL EXAM FROM 8:00AM-11:00AM | |