



## PSY 697 SPECIAL TOPIC: APPLIED REGRESSION ANALYSIS

COURSE SYLLABUS: Spring 2019  
Monday 4:30-7:10 PM, Henderson 206

### INSTRUCTOR INFORMATION

**Instructor:** Dr. Hsun-Yu Chan

**Office Location:** Henderson 201-B

**Office Hours:** Monday 2-4 PM, or by appointment

**Office Phone:** (903) 886-5660

**Office Fax:** (903) 886-5510

**University Email Address:** Hsun-Yu.Chan@tamuc.edu

**Preferred Form of Communication:** Email

**Communication Response Time:** 24 hours (week day)

### COURSE INFORMATION

#### Textbook(s) Required:

Darlington, R. B., & Hayes, A. F. (2016). *Regression analysis and linear models: Concepts, applications, and implementation*. New York, NY: Guildford. ISBN: 9781462521135 (Gee Library purchased the electronic full-text. You are not required to purchase the book as long as you have access to the Library's database)

Nicol, A. A. M., & Pexman, P. M. (2010). *Presenting your findings: A practical guide for creating tables* (6th ed.). Washington, DC: APA. (Every researcher in psychology should have this manual)

**Software Required:** One statistical software (e.g., SPSS, R, Stata, SAS, Mplus), word processing software, Excel

#### Optional Texts and/or Materials:

1. Kleinbaum, D. G., Kupper, L. L., Nizam, A., & Rosenberg, E. S. (2014). *Applied regression analysis and other multivariate methods* (5th ed.). Boston, MA: Cengage Learning. ISBN: 9781285051086 (It is a good, hands-on textbook)
2. Fox, J. (2016). *Applied regression analysis and generalized linear models* (3rd ed.). New York, NY: Sage. ISBN: 9781452205663 (If you want to do the math, it is the go-to)
3. One book for using the statistical software of student's choice

*The syllabus/schedule are subject to change.*

4. SPSS 25.0 (available in Dr. Chan's lab, Henderson 201-C or any university-owned PC; or you can get a limited term student license on <http://www.amcbookstore.com/SiteText.aspx?id=29772> or <https://www.hearne.software/home> and work on your personal PC/Mac) **OR** other statistical software of your choice.

## **Course Description**

This course covers the theory and application of regression analysis and serves as a solid foundation for more advanced topics in quantitative methodology. The course will provide the opportunity to build regression models and interpret the results of a variety of regression modeling techniques.

## **Student Learning Outcomes**

1. Understand OLS regression and generalized linear models
2. Estimate regression models with statistical software
3. Diagnose the assumptions of regression analysis
4. Compare and select best regression model
5. Interpret the regression coefficients

## **COURSE REQUIREMENTS**

### **Minimal Technical Skills Needed**

Using the learning management system; using Microsoft Word and Excel; using statistical software programs

### **Instructional Methods**

This course will be conducted by lecture with ample opportunities to practice how to conduct regression analysis on statistical software programs. Students will complete multiple assignments and a term paper to demonstrate the mastery of regression analysis.

### **Student Responsibilities**

Students are expected to read the assigned readings before class, attend class and practice statistical analysis on software, and submit the assignments and term project on time to succeed in this class. The completion of assignment and asking questions are essential. A commitment of 9 hours per week to this course is expected.

## **GRADING**

Final grades in this course will be based on the following scale:

- A = 90%-100% (360-400 points)
- B = 80%-89% (320-359 points)
- C = 70%-79% (280-319 points)
- D = 60%-69% (240-279 points)
- F = 59% or Below (239 points and below)

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## **Assessments**

- I. Assignments (6x; 50 points each, 300 points in total). In each assignment, students will conduct regression analysis to answer the assigned questions. Each assignment should be a short technical report itself (3 pages maximum, not including the list of references, tables, and figures), including essential information such as research questions, a description of the sample and data, a summary of the plan of analysis, and the interpretations of the results. Students should provide relevant tables and figures to accompany the text, and follow APA style for each assignment.
- II. Term paper (1x; 100 points). The term paper is a summary of the six assignments completed earlier in the semester, but the paper itself resembles a complete manuscript of journal article. The paper should include a section of introduction and literature review, research questions, methods, results, and discussion.

## **ADA Statement**

### **Students with Disabilities**

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

### **Office of Student Disability Resources and Services**

Texas A&M University-Commerce

Gee Library- Room 162

Phone (903) 886-5150 or (903) 886-5835

Fax (903) 468-8148

Email: [studentdisabilityservices@tamuc.edu](mailto:studentdisabilityservices@tamuc.edu)

Website: [Office of Student Disability Resources and Services](#)

<http://www.tamuc.edu/campusLife/campusServices/studentDisabilityResourcesAndServices/>

### **Nondiscrimination Notice**

Texas A&M University-Commerce will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

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## COURSE OUTLINE / CALENDAR

Week	Topic
1/14	<b>Warm-up</b> Review of basic principles of statistics
1/21	<b>Where do I start?</b> Simple linear regression: Overview of model building
1/28	<b>The math behind the magic</b> Simple linear regression: Algebraic and graphic form of simple linear regression
2/4	<b>"Females minus males?"</b> Simple linear regression: Types independent variables
2/11	<b>"One point difference is related to..."</b> Simple linear regression: Interpretations of coefficients
2/18	<b>Oh party poopern</b> Multiple regression: Overview; <i>Assignment 1 due</i>
2/25	<b>"This difference will be different when that changes..."</b> Multiple regression: Statistical interactions in regression
3/4	<b>"You look familiar. Do I know you?"</b> Multiple regression: ANOVA and regression; <i>Assignment 2 due</i>
3/11	<b>How important is my work?</b> Multiple regression: Effect size and interpretations
3/18	<b>SPRING BREAK, NO CLASS!</b>
3/25	<b>Why the results look so bad?</b> Assumptions of linear regression; <i>Assignment 3 due</i>
4/1	<b>Let's make it right</b> Model diagnostic: Transformation, collinearity, and outliers/influential observations; <i>Assignment 4 due</i>
4/8	<b>SOS! The outcome is not continuous!</b> Generalized linear model: Overview of logistic and probit regression; <i>Assignment 5 due</i>
4/15	<b>Odds is odd</b> Generalized linear model: Interpretations (logits, odds ratio, and delta-p)
4/22	<b>I believe I can fly</b> Extensions of linear regression: Path analysis, structural equation modeling, hierarchical linear modeling; <i>Assignment 6</i>
4/29	<b>Correlation does not mean causation... oh wait...</b> Final words: causal inference, missing data <i>Term paper due at 11:59 PM on May 6<sup>th</sup></i>

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## TECHNOLOGY REQUIREMENTS

### Browser support

D2L is committed to performing key application testing when new browser versions are released. New and updated functionality is also tested against the latest version of supported browsers. However, due to the frequency of some browser releases, D2L cannot guarantee that each browser version will perform as expected. If you encounter any issues with any of the browser versions listed in the tables below, contact D2L Support, who will determine the best course of action for resolution. Reported issues are prioritized by supported browsers and then maintenance browsers.

Supported browsers are the latest or most recent browser versions that are tested against new versions of D2L products. Customers can report problems and receive support for issues. For an optimal experience, D2L recommends using supported browsers with D2L products.

Maintenance browsers are older browser versions that are not tested extensively against new versions of D2L products. Customers can still report problems and receive support for critical issues; however, D2L does not guarantee all issues will be addressed. A maintenance browser becomes officially unsupported after one year.

Note the following:

- Ensure that your browser has JavaScript and Cookies enabled.
- For desktop systems, you must have Adobe Flash Player 10.1 or greater.
- The Brightspace Support features are now optimized for production environments when using the Google Chrome browser, Apple Safari browser, Microsoft Edge browser, Microsoft Internet Explorer browser, and Mozilla Firefox browsers.

### Desktop Support

Browser	Supported Browser Version(s)	Maintenance Browser Version(s)
Microsoft® Edge	Latest	N/A
Microsoft® Internet Explorer®	N/A	11
Mozilla® Firefox®	Latest, ESR	N/A
Google® Chrome™	Latest	N/A

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Browser	Supported Browser Version(s)	Maintenance Browser Version(s)
Apple® Safari®	Latest	N/A

### Tablet and Mobile Support

Device	Operating System	Browser	Supported Browser Version(s)
Android™	Android 4.4+	Chrome	Latest
Apple	iOS®	Safari, Chrome	The current major version of iOS (the latest minor or <b>point</b> release of that major version) and the previous major version of iOS (the latest minor or <b>point</b> release of that major version). For example, as of June 7, 2017, D2L supports iOS 10.3.2 and iOS 9.3.5, but not iOS 10.2.1, 9.0.2, or any other version.  Chrome: Latest version for the iOS browser.
Windows	Windows 10	Edge, Chrome, Firefox	Latest of all browsers, and Firefox ESR.

- You will need regular access to a computer with a broadband Internet connection. The minimum computer requirements are:
  - 512 MB of RAM, 1 GB or more preferred
  - Broadband connection required courses are heavily video intensive
  - Video display capable of high-color 16-bit display 1024 x 768 or higher resolution
- **For YouSeeU Sync Meeting sessions 8 Mbps is required.** Additional system requirements found here: <https://support.youseeu.com/hc/en-us/articles/115007031107-Basic-System-Requirements>
- You must have a:
  - Sound card, which is usually integrated into your desktop or laptop computer
  - Speakers or headphones.

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- \*For courses utilizing video-conferencing tools and/or an online proctoring solution, a webcam and microphone are required.
- Both versions of Java (32 bit and 64 bit) must be installed and up to date on your machine. At a minimum Java 7, update 51, is required to support the learning management system. The most current version of Java can be downloaded at: [JAVA web site http://www.java.com/en/download/manual.jsp](http://www.java.com/en/download/manual.jsp)
- Current anti-virus software must be installed and kept up to date.

Running the browser check will ensure your internet browser is supported.

Pop-ups are allowed.

JavaScript is enabled.

Cookies are enabled.

- You will need some additional free software (plug-ins) for enhanced web browsing. Ensure that you download the free versions of the following software:
  - [Adobe Reader https://get.adobe.com/reader/](https://get.adobe.com/reader/)
  - [Adobe Flash Player \(version 17 or later\) https://get.adobe.com/flashplayer/](https://get.adobe.com/flashplayer/)
  - [Adobe Shockwave Player https://get.adobe.com/shockwave/](https://get.adobe.com/shockwave/)
  - [Apple Quick Time http://www.apple.com/quicktime/download/](http://www.apple.com/quicktime/download/)
- At a minimum, you must have Microsoft Office 2013, 2010, 2007 or Open Office. Microsoft Office is the standard office productivity software utilized by faculty, students, and staff. Microsoft Word is the standard word processing software, Microsoft Excel is the standard spreadsheet software, and Microsoft PowerPoint is the standard presentation software. Copying and pasting, along with attaching/uploading documents for assignment submission, will also be required. If you do not have Microsoft Office, you can check with the bookstore to see if they have any student copies.

## **ACCESS AND NAVIGATION**

You will need your campus-wide ID (CWID) and password to log into the course. If you do not know your CWID or have forgotten your password, contact the Center for IT Excellence (CITE) at 903.468.6000 or [helpdesk@tamuc.edu](mailto:helpdesk@tamuc.edu).

**Note:** Personal computer and internet connection problems do not excuse the requirement to complete all course work in a timely and satisfactory manner. Each student needs to have a backup method to deal with these inevitable problems. These methods might include the availability of a backup PC at home or work, the temporary use of a computer at a friend's home, the local library, office service companies, Starbucks, a TAMUC campus open computer lab, etc.

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## **COMMUNICATION AND SUPPORT**

### **Brightspace Support**

#### **Need Help?**

#### **Student Support**

If you have any questions or are having difficulties with the course material, please contact your Instructor.

#### **Technical Support**

If you are having technical difficulty with any part of Brightspace, please contact Brightspace Technical Support at 1-877-325-7778 or click on the **Live Chat** or click on the words “[click here](#)” to submit an issue via email.



#### **System Maintenance**

D2L runs monthly updates during the last week of the month, usually on Wednesday. The system should remain up during this time unless otherwise specified in an announcement. You may experience minimal impacts to performance and/or look and feel of the environment.

#### **Interaction with Instructor Statement**

Email is the best way to reach the instructor, and please allow 24 hours on workdays for a reply. The students are also welcome to stop by during office hour (or make an appointment) at Henderson 201-B. The lab at Henderson 201-C is open when the instructor is in the office.

## **COURSE AND UNIVERSITY PROCEDURES/POLICIES**

#### **Course Specific Procedures/Policies**

It is a child-friendly class. Students are welcome to take their child to class when other arrangements are not feasible.

#### **Syllabus Change Policy**

The syllabus is a guide. Circumstances and events, such as student progress, may make it necessary for the instructor to modify the syllabus during the semester. Any changes made to the syllabus will be announced in advance.

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## **University Specific Procedures**

### **Student Conduct**

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. The Code of Student Conduct is described in detail in the [Student Guidebook](#).

<http://www.tamuc.edu/Admissions/oneStopShop/undergraduateAdmissions/studentGuidebook.aspx>

Students should also consult the Rules of Netiquette for more information regarding how to interact with students in an online forum: [Netiquette](#)

<http://www.albion.com/netiquette/corerules.html>

### **TAMUC Attendance**

For more information about the attendance policy please visit the [Attendance](#) webpage and [Procedure 13.99.99.R0.01](#).

<http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx>

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/academic/13.99.99.R0.01.pdf>

### **Academic Integrity**

Students at Texas A&M University-Commerce are expected to maintain high standards of integrity and honesty in all of their scholastic work. For more details and the definition of academic dishonesty see the following procedures:

[Undergraduate Academic Dishonesty 13.99.99.R0.03](#)

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/undergraduates/13.99.99.R0.03UndergraduateAcademicDishonesty.pdf>

[Graduate Student Academic Dishonesty 13.99.99.R0.10](#)

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/graduate/13.99.99.R0.10GraduateStudentAcademicDishonesty.pdf>

### **Campus Concealed Carry Statement**

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in Texas A&M University-Commerce buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal

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Code (PC) 46.035 and A&M-Commerce Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations.

For a list of locations, please refer to the [Carrying Concealed Handguns On Campus](#) document and/or consult your event organizer.

Web url:

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf>

Pursuant to PC 46.035, the open carrying of handguns is prohibited on all A&M-Commerce campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.

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