Instructor: Dr. Craig W. Slinkman

Office: COBA 532

## Office Hours

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| My office hours will be held in the Central Library on the second floor of the library.  My location will be on the south side of the library. This is the side of the library that is closest to Mitchel Street.  In addition, office hours are available by appointment. | |
| Days and Time  |  |  |  | | --- | --- | --- | | **Day** | **Location** | **Time** | | Monday | COBA 349 | 9:00 – 9:50 | | Monday | Library | 19:00 – 21:30 | | Tuesday | Library | 19:00 – 21:30 | | Wednesday | COBA 349 | 9:00 – 9:50 | | Wednesday | Library | 19:00 – 21:30 | | Thursday | Library | 19:00 – 21:30 | | Friday | COBA 349 | 9:00 – 10:50 | |  | In addition office hours are available by appointment. | | |  |

**Course description**

**BSTAT 3322 BUSINESS STATISTICS II** (3-0) Application of statistical inference to problems in business and economics. Sampling theory, nonparametric\*c methods, and forecasting. Special attention to statistical research. Prerequisite: BSTAT 3321.

**Section data**

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| --- | --- | --- | --- | --- | --- |
| Class | Section | Days | Time | Room | Class Dates |
| BSTAT-3322 | 001 | MoWeFr | 11:00 – 11:50 | COBA 349 | Jan 10 2016 - May 6 2016 |
| BSTAT-3322 | 002 | MoWe | 11:00 – 11:50 | COBA 348 | Jan 10 2016 - May 6 2016 |

**Class requirements and grades**

1. To learn data analysis and applied statistics you must do applied statistics.
2. In this course there are no exams.
3. However I will have weekly quizzes because some students do not read the notes that I provide.
4. All the graded material is the homework. Late homework is not accepted.
5. The homework with the minimum grade will be dropped.
6. There are potentially 14 homework assignments. The maximum number of questions on a homework is limited to 4.
7. The final homework which will be collected during final week counts twice.
8. A homework may have a potential bonus question which will add points to your homework score.
9. Since there are 14 homework assignment and one will be dropped and the final homework counts twice, then there are 14 possible grades. Each homework counts 100 points so there are 1400 possible points.
10. There will be one pop quiz per week. The quiz material will either be based on an assigned YouTube video, the prior lecture, or a current homework assignment.
11. The equation for the computed class average, , if given by

### Point distribution

|  |  |
| --- | --- |
| **Tasks** | **Points** |
| 12 Homework @ 100 points | 1200 |
| 12 Quizzes @ 50 Points | 300 |
| Total points | 1500 |

## Letter grades

|  |  |
| --- | --- |
| Percentage | Grade |
| >89% | A |
| >79% | B |



**Required text books**

There are no required text books for this course. Instead I have provided you with a set of instructional YouTube videos.

**Suggested books**

We will be using the R-statistical software program. You should welcome this because many of you want to be successful and support you family and typical R-jobs pay well. A very useful book is

De Vires, Andrie and Joris Meys, 2000. R for Dummies, For Dummies a division of John Wiley, Chichester, West Sussex, England, ISBN 978-1-119-96284-7. This book can be purchased [here](http://www.amazon.com/R-Dummies-Andrie-Vries/dp/1119055806/ref=sr_1_1?s=books&ie=UTF8&qid=1440628752&sr=1-1&keywords=r+for+dummies+2nd+edition&pebp=1440628746983&perid=1707GSY2JB1S9KQDCFAB).

**Web Resources**

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| --- | --- |
| **Resource** | **Html** |
| Basic statistics notes | <https://github.com/utaSlinkman/BusinessStatistics> |
| Homework and data | <https://github.com/utaSlinkman/BSTAT3322> |

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| **Week of** | **Topic** | **Reading/Viewing** | **Assignment** |
| 01/18/2016 | 1. R and RStudio setup | [R and Studio setup](file:///C:\Users\Craig\Documents\2015-03-Fall\BSTAT%203322\Introduction%20to%20R%20Programming:%20Download,%20Install%20and%20Setup%20R%20&%20RStudio) |  |
|  | 2. Introduction to RStudio | [Introduction to RStudio](https://www.youtube.com/watch?v=jPk6-3prknk) |  |
| 1. Getting Started With R | [Watch this lecture](https://www.youtube.com/watch?v=UYclmg1_KLk&list=PLqzoL9-eJTNBDdKgJgJzaQcY6OXmsXAHU) |  |
| 01/25/2016 | 2. Introduction to R Programming: Creating Vectors, Matrices, and Other objects | [Watch these notes](https://www.youtube.com/watch?v=2TcPAZOyV0U) | H1 due |
|  | 3. Import Data, Copy Data from Excel to R | [Watch these notes](https://www.youtube.com/watch?v=qPk0YEKhqB8) |  |
| 02/01/2016 | 4. Importing Data and Working With Data in R | [Watch this lecture](https://www.youtube.com/watch?v=1BcGnHwUT6k) | H2 due |
| 02/08/2016 | Professional graphics with ggplot2 | [Watch this lecture](https://www.youtube.com/watch?v=HeqHMM4ziXA) |  |
|  | [Watch this lecture](https://www.youtube.com/watch?v=n8kYa9vu1l8) |  |
| 9/15/2015 | RMarkdown | [Watch this lecture](https://www.youtube.com/watch?v=-apyD5f9nwg) | H3 due |
| 9/17/2015 | Confidence Intervals | [Download notes from here](https://github.com/utaSlinkman/Basic-Statistics/blob/master/04-Confidence%20intervals.zip) |  |
| 9/22/2015 | Confidence intervals |  | H4 due |
| 9/24/2015 | Hypothesis tests | [Download notes from here](https://github.com/utaSlinkman/Basic-Statistics/blob/master/05-Hypothrsis%20tests.zip) |  |
| 9/29/2015 | Hypothesis tests |  | H5 due |
| 10/1/2015 | Traditional statistical Inference with R | [Download notes from here](https://github.com/utaSlinkman/Basic-Statistics/blob/master/08-Classical%20statistical%20inference.zip) |  |
| 10/6/2015 | Traditional statistical Inference with R |  | H6 due |
| 10/8/2015 | Traditional statistical Inference with R |  |  |
| 10/13/2015 | Scatterplots | [Watch this lecture](https://www.youtube.com/watch?v=PVLB9cURhiA) | H7 due |
| 10/15/2015 | Smoothing | [Watch this lecture](https://www.youtube.com/watch?v=4YoNcRh65vg) |  |
| 10/20/2015 | Simple linear regression -basics | [Watch this lecture](https://www.youtube.com/watch?v=66z_MRwtFJM) | H8 due |
| 10/22/2015 | Simple linear regression - inference |  |  |
| 10/27/2015 | Simple linear regression - prediction |  | H9 due |
| 10/29/2015 | Simple linear regression diagnostics |  |  |
| 11/3/2015 | Multiple linear regression - basics | [Watch this lecture](https://www.youtube.com/watch?v=q1RD5ECsSB0) | H9 due |
| 11/5/2015 | Multiple linear regression - inference |  |  |
| 11/10/2015 | multiple linear regression - prediction |  | H10 due |
| 11/12/2015 | Polynomial regression | [Watch this lecture](https://www.youtube.com/watch?v=qbuZDQDx6zU) |  |
| 11/17/2015 | Interaction |  | H11 due |
| 11/19/2015 | Factors (Classification) |  |  |
| 11/24/2015 | Factors (Classification) |  | H12 due |
| 11/26/2015 | ***Thanksgiving Holiday*** |  |  |
| 12/1/2015 | Cross validation | [Watch this lecture](https://www.youtube.com/watch?v=CmEqvD_ov2o) |  |
| 12/3/2015 | Transformations |  | H13 due |
| 12/8/2015 | [Logistic regression](https://www.youtube.com/watch?v=EocjYP5h0cE) | [Watch this lecture](https://www.youtube.com/watch?v=EocjYP5h0cE) |  |
| 12/15/2015 | **Final exam** |  | H14 due |

**Tentative class schedule**

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| --- | --- | --- | --- |
| Week of | Topic | Reading/  Viewing | Homework |
| 1/17/2016 | 1. R and RStudio setup 2. 2. Introduction to RStudio 3. Introduction to RStudio | [R and Studio setup](file:///C:\Users\Craig\Documents\2015-03-Fall\BSTAT%203322\Introduction%20to%20R%20Programming:%20Download,%20Install%20and%20Setup%20R%20&%20RStudio) |  |
|  |  |  |  |
| 1/24/2016 | 1. Getting Started With R 2. 2. Introduction to R Programming: Creating Vectors, Matrices, and Other objects 3. Import Data, Copy Data from Excel to R | Watch lecture  Read lecture  [Read notes](https://www.youtube.com/watch?v=qPk0YEKhqB8)  [Watch lecture](https://www.youtube.com/watch?v=1BcGnHwUT6k) | H1 due |
|  |  |  |  |
| 1/31/2016 | Professional graphics with ggplot2 | [Watch lecture](https://www.youtube.com/watch?v=HeqHMM4ziXA)  [Watch lecture](https://www.youtube.com/watch?v=n8kYa9vu1l8) | H2 due |
|  |  |  |  |
| 2/7/2016 | RMarkdown | [Watch lecture](https://www.youtube.com/watch?v=-apyD5f9nwg) | H3 due |
|  |  |  |  |
| 2/14/2016 | Confidence intervals | Download notes | H4 due |
|  |  |  |  |
| 2/21/2016 | Hypothesis tests | [Download notes from here](https://github.com/utaSlinkman/BusinessStatistics/blob/master/05-Hypothrsis%20tests.zip) | H5 due |
|  |  |  |  |
| 2/28/2016 | BSTAT 3321 with R  Assessing normality | Notes are not yet posted | H6 due |
|  |  |  |  |
| 3/6/2016 | Scatterplots  Smoothing | [Watch lecture](https://www.youtube.com/watch?v=MawfQdv0MJ4)  No Notes | H7 due |
|  |  |  |  |
| 3/13/2016 | Spring break |  |  |
|  |  |  |  |
| 3/20/2016 | Simple Linear regression | [Simple linear regression](https://github.com/utaSlinkman/BSTAT3322/blob/master/SLR/SimpleLinearRegression.html) | H8 due |
|  |  |  |  |
| 3/27/2016 | Simple Linear Regression  Crossvalidation | [Simple linear regression](https://github.com/utaSlinkman/BSTAT3322/blob/master/SLR/SimpleLinearRegression.html)  [Watch this](https://www.youtube.com/watch?v=CmEqvD_ov2o) | H9 due |
|  |  |  |  |
| 4/3/2016 | Multiple Linear Regression | Notes not posted | H10 due |
|  |  |  |  |
| 4/10/2016 | Indicator variables and Factors | Notes not posted | H11 due |
|  |  |  |  |
| 4/17/2016 | Polynomial Regression | Notes not posted | H12 due |
|  |  |  |  |
| 4/24/2016 |  |  |  |
|  |  |  |  |
| 5/1/2016 | Slack |  | H13 due |