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| **H. Zafer Yuksel, Ph.D.,**  **Assistant Professor of Finance** | |
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**Course Description and Objectives:**

This course is a Ph.D. level introduction to econometrics. The objective of the course is to provide a rigorous treatment of basic econometric techniques and the body of theory underlying their applications. This course provides an understanding of the econometric theory that underlies common econometric models. As a result of taking this course, you will acquire econometric tools for empirical analysis. The course is further designed to provide students with hands on experience with econometric modeling and analysis.

These are some (not all) of the major areas we will be looking at:

* Understand the link between econometric analysis and finance theory
* Understand of linear algebra and mathematical statistics that are the foundation for econometric analysis
* Master the foundations of the classical general linear regression models
* Applying a variety of methods commonly employed in empirical research

**Course Material:**

**Required:**

Greene, William H., 2011, Econometric Analysis, New York, Pearson Prentice Hall.

Kennedy, Peter, 2008, A Guide to Econometrics, Cambridge, MIT Press.

Delwiche Lora D and Susan J. Slaughter, The Little SAS Book, SAS

**Recommended:**

Wooldridge, Jeffrey M., 2010, Econometric Analysis of Cross Section and Panel Data, Cambridge, MA, MIT Press.

**Grading:**

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| **Assignments** | **Grades** |
| MIDTERM EXAM | 30 |
| INDIVIDUAL REPLICATION PROJECT I | 20 |
| INDIVIDUAL REPLICATION PROJECT II | 30 |
| POP-OUT QUIZES (4-5) | 20 |
| PAPER REPORTS (1-2) | 20 |
| **TOTAL** | **120** |

**Course Policies:**

Each student is expected to attend ALL scheduled class meetings for the entire duration of the class meeting. Materials presented in class are not limited to the textbook. Regular presence of classroom may have a significant impact on your chances to succeed in this class. You will be responsible for anything covered in this class, even if you are not in attendance that day. I will take daily attendance at the end of the class. 20% of your grade is based on attendance and participation. I reserve the right to reduce a student’s grade due to excessive absences from class, a lack of attentiveness in class.

**Computer and Cell Phone Policy:**

Do not have your cell phone or laptop out during the class. Turn them off and put them away for the duration of the class. If they are being used during the class, your grade for course will be reduced. If you have an emergency situation in which you need to have access to cell phone, let me know about it BEFORE class begins.

**Class Attendance:**

The University expects students to attend all regularly schedule class meetings because attendance and participation in class (including online courses) are fundamental parts of the learning process and key factors in academic success. Absences for any reasons should be discussed with the instructor as soon as possible, preferably in advance. Certain absences, such as those due to medical issues, may be excused provided appropriate notice and documentation are provided. For details, see: <https://www.umb.edu/registrar/academic_policies/class_attendance>

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**Student Behavior:**

The University maintains that every aspect of academic life, not only formal coursework but also all relationships and interactions connected to the educational process, shall be conducted in an absolutely and uncompromisingly honest manner. The University presupposes that any submission of work for academic credit indicates that the work is the student’s own and is in compliance with university policies. In cases where academic dishonesty is discovered after completion of a course or degree program, sanctions may be imposed retroactively, up to and including revocation of the degree. Any student who reasonably believes another student has committed an act of academic dishonesty should inform the course instructor of the alleged violation.

Know that plagiarism includes copying someone else’s words and claiming them as your own, paraphrasing someone else's words and/or ideas and claiming them as your own, or collaborating excessively with another person or persons and claiming the work as solely your own. If you are unclear about what constitutes plagiarism, please see me for an explanation. Plagiarism on any assignment will, at minimum, result in an "F" for the assignment. I reserve the right to pursue further disciplinary action if appropriate (e.g., any student caught cheating on an exam will receive an "F" for the course). I strongly recommend students maintain a record of the preparation of their assignments and include their UMS number on all correspondence. For further information, refer to the Code of Student Conduct section listed in the University Catalog, the Student Handbook, or <http://cdn.umb.edu/images/life_on_campus/Code_of_Conduct_5-14-14.pdf>

**Disabilities:**

The University of Massachusetts Boston is committed to providing reasonable academic accommodations for students with disabilities. This syllabus, for example, is available in alternate format upon request. Students with disabilities needing accommodations in this course must be registered with the Ross Center for Disability Services, UL 211, [www.ross.center@umb.edu](http://www.ross.center@umb.edu) 617.287.7430 before requesting accommodations from the instructor. Once registered, students should contact the instructor to discuss needed accommodations.

**To Do List:**

1. Registering WRDS:

<http://wrds-web.wharton.upenn.edu/>

1. SAS and Stata Licenses:

**Class Schedule:**

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| **Week** | **Date** | **Topics** | **Reading** |
| **1** | September 5 | Review of Statistical Concepts | Greene- Chapter 1  Greene- Appendix A-B  Kennedy- Chapter 1 |
| **2** | September 12 | Statistical Inference, Estimation and Matrix Algebra | Greene- Appendix C-D  Kennedy- Chapter 2 |
| **3** | September 19 | Regression Analysis- Fundamentals  Two-Variable Regression Analysis | Greene- Chapter 2  Kennedy- Chapter 3 |
| **4** | September 26 | Two-Variable Regression Model: Estimation | Greene- Chapter 2  Kennedy- Chapter 3 |
| **5** | October 3 | Matrix Approach to Linear Regression | Greene- Chapter 3  Kennedy- Chapter 4 |
| **6** | October 10 | Inference in the OLS Model  Multicollinearity | Greene- Chapter 4 & 5  Kennedy- Chapter 11 |
| **7** | October 17 | Specification Errors:   * Omitted Variables * Irrelevant-Redundant Variables   **Group Replication Project** | Greene- Chapter 4  Kennedy- Chapter 6 |
| **8** | October 24 | Instrumental Variables (IV)- 2SLS  Tests for Endogeneity | Greene- Chapter 12  Kennedy- Chapter 9  **Roberts and Whited (2012), WP** |
| **9** | October 31 | Measurement Error | Kennedy- Chapter 9 |
| **10** | November 7 | Spherical Disturbances- Heteroscedasticity | Kennedy- Chapter 8 |
| **11** | November 14 | MIDTERM EXAM  **Group Replication Project Due** |  |
| **12** | November 21 | Autocorrelation/Serial Correlation | Kennedy- Chapter 8 |
| **13** | November 28 | Fixed Effect and Random Effect Models | Greene- Chapter 9 |
| **14** | December 5 | Estimating Standard Errors in Finance Panel Data Sets | **Petersen 2008, RFS** |
| **15** | December 12 | **Individual Replication Project** |  |