**Forman Christian College (A Chartered University)**

**Department of Economics**

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| **Course Name: Fundamentals of Econometrics Spring 2023**  |
| **Course Code:300** | **Course Type: (Economics Major Course)** | **Course Credits: 03**  |
| **Class Timings and Venue: Monday, Wednesday, Friday: 2:00- 2:50 pm** E:204 | **Section: B** | **Student Meeting Hours/ Office Hours:****Student Meeting Hours/ Office Hours:**Monday, Wednesday, and Friday: 1:00-2:00 pm   |
| **Instructor Name: Uzma Hanif, PhD.**  |
| **A Note from the Instructor:** *Dear* Students, I welcome you aboard for the learning journey of Fundamentals of Econometrics. Together, we will learn about the basics of Econometrics; linear regression models and their application in economics, reliability of estimates, Detection, consequences and remedial measures of autocorrelation, multicollinearity and heteroscedasticity. |
| **Dr Uzma Hanif Contact Details**Email: uzmahanif@fccollege.edu.pkMobile: +92 344 4467153 Office No: E226Other: +92 99231581- 8 Ext 401Office Hours: Monday, Wednesday, and Friday 1:00-2:00 pm Guidelines for contacting the instructor: Guidelines for contacting the instructor: Students will be seen on a first-come-first-serve basis. Only two students at a time can visit my office. Please check your official email and Moodle accounts on regular basis. You can also contact me via WhatsApp message, please don’t send messages after 5:00 p.m. and before 9:00 a.m. Students can contact me via email as well. I will reply to students on a first come first serve basis.  |
| **Course Description**:Pre-requisites: 201,202 and 203Mode of Instruction: Classroom lectures/Face to face discussion sessions Empirical analysis has become an indispensable component of contemporary research in economics, and Econometrics is concerned with the empirical determination of economic laws. This course will provide an elementary but comprehensive discussion of single-equation regression models, focusing on the Classical Normal Linear Regression Model and its assumptions’ violations. It includes the method of ordinary least squares, multicollinearity, heteroscedasticity, autocorrelation, and dummy variable regression models. |
| **Main Mode of Instruction:** *(In-Person/Classroom Lectures)***Technology Requirements** *(Students need to have access to their official email account and Moodle for receiving study material and course-related information)* **Technology Etiquettes**: *What do you define as appropriate or inappropriate engagement with technology in your course? For example, see* [*here*](https://docs.google.com/document/d/121V-o4JeSKcvWPWoJcNMEfruRsvxqYOvIuKtLbvgAfM/edit)*.)***Considerations for Students with Limited Internet/Technology Access: Don’t worry If you have limited internet access. Make sure to check your email/Moodle accounts to download lectures, reading material, assignments etc. whenever you got an opportunity to get internet access.** |
| **Program Objectives Addressed** 1. Demonstrate an understanding of microeconomics, macroeconomics and econometrics
2. Perform quantitative research skills to critically analyze economic issues
3. Apply economic theory to a wide range of real-life problems and suggest policy changes
4. Effective communication of economic ideas in oral and written form
5. Use their knowledge and abilities for the welfare of the people
6. Practice ethical and moral values in their professional and personal lives
7. Describe careers that apply economics in public, private, and international institutions.
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| **Course Objectives or** [**Student Learning Outcomes**](https://docs.google.com/document/d/1me9vpl8iKR_zNX9gIODm7gkVFY9VkuSKpUJe1VyI57M/edit) **(SLOs)****Learning goals**The course will equip students with the fundamental concepts and techniques of econometrics to conduct a project and understand how economic theory and the natural world around us are connected.**Learning Outcomes**After the successful completion of the course, the students should be able to:* understand the concept of the OLS Method of estimation and how it work
* estimate the simple two-variable and multivariate regression models
* interpret and evaluate the regression results
* conduct hypotheses testing:individual versus joint testing of hypotheses, overall significance, linear restrictions, and omitted and redundant variables
* distinguish among the wide range of functional forms and understand the meaning and interpretation of their coefficient
* recognize and solve the problems due to the violations of the assumptions of CNLRM
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| **Expectations from the Students*** + Students are expected to read the lecture soon after the class.
	+ Students are expected to be regular and punctual. In case they get late, attendance shall not be marked.
	+ The students must attend at least 80***%*** of the classes to qualify for the mid and final exams.
	+ No exam or quiz shall be retaken if a student misses an exam or quiz.
	+ Students must maintain discipline in the class.
	+ Students must switch their cell phones off during class.
	+ Students are expected to submit their assignments on time. Common excuses like the pressure of other exams, sickness, or family obligations will not be accepted. Late submission will be penalized at the rate of a 25 per cent deduction of marks per day. So, there is no need to submit an assignment after the fourth day of the due date. If someone cannot come on the due date, he should submit the due assignment in advance.
	+ Students are expected to observe academic integrity and be familiar with the FCC rules regarding unfair means in exams and preparation of assigned work. Unfair means cases will be strictly dealt with according to the FCC policy in this regard.
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**Calendar of Activities**

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| **Wk**  | **Topic/ Title**  | [**Teaching-Learning Activities**](https://docs.google.com/document/d/1jY2UWb3QuOogkiSMdPvZd33eKe2kRpfzsTm2LSrnLko/edit#heading=h.4dy4q49omahn) |
| *In Person/Class room Lectures*  |
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| Week | Primary Topics/Sub Topics  |  |

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| **Week** | **Topics** | **Reading Assignment**  | [**Assessment**](https://docs.google.com/document/d/1Z4W_utaHpwMJP6B2jJlb9ofxFHmcagrWWOT5cUM9lj4/edit?usp=sharing)**&** [**Rubrics**](https://docs.google.com/document/d/1IdFfZ8WRSRKSceBYC4jfAyKEYdb1M6Z4GSSLueP8HD0/edit)(with the due date) |
| 1 | 1. What is Econometrics, Methodology of Econometrics**2. Types of data, Measurement scales, statistical requirements** | Gujrati: Introduction, Chapter 1Studenmund: chap. 1Asteriou & Hall: Chap. 1 & 2 |  |
| 2 | 1. Regression Analysis? Population & Sample Regression Functions**2. Simple Examples of Regression Analysis, An Overview of Regression Analysis** | Gujrati: Chap. 2Studenmund: Chap. 2Class Work  |  |
| 3 |  **1 & 2 Method of Ordinary Least Squares: concept and derivation of OLS estimators** | Gujrati: Chap. 3 Studenmund: chap. 3Asteriou & Hall: Chap. 3 | Quiz#1: Assignment #1  |
| 4 |  1. Numerical properties of OLS Estimators**2. By using Excel, Numerical example for estimating the two-variable regression model** | Gujrati: Chap. 3Class Work | Submission Assignment #1 |
| 5 | 1. Evaluating the quality of a regression equation: Goodness of Fit **2.The assumptions of Classical Normal Linear Regression Model** | Gujrati: Chap. 4 & 5 |  |
| 6 |  1. The Sampling Distribution of OLS Estimators, The Gauss-Markov Theorem and Statistical Properties of OLS Estimators**2. Interval Estimation, Hypothesis Testing t-test, Confidence Intervals, The F-Test** | Gujrati: Chap. 3, 4 & 5Asteriou & Hall: Chap. 3 | Quiz # 2: Assignment #2: |
| 7 & 8 | 1. Multivariate regression: estimation, interpretation, **2. Tests involving more than one parameter** | Gujrati: Chap. 7 & 8 Asteriou & Hall: Chap. 4Schmidt: Chap. 8 | Submission Assignment #2:Midterm Exam  |
| 9 |  Some additional useful functional forms of the two-variable linear regression model: 1. Regression through the origin, regression on standardized variables,
2. log-linear, semi-log, and reciprocal
 | Gujrati: Chap. 6 |  |
| 10 | Some additional useful functional forms of multivariate regression: 1 & 2. Quadratic, Cobb-Douglass, Translog | Schmidt: Chap. 9 | Assignment # 3 : |
| 11 | Dummy Variable Regression Model:1. The nature of dummy variables, regression with a mixture of quantitative and qualitative regressors2. Interaction effects using dummy variables | Gujrati: Chap. 9Asteriou & Hall: Chap. 9 | Submission Assignment # 3 |
| 12 |  MulticollinearityNature, consequences, detection, and correction | Gujrati: Chap. 10Asteriou & Hall: Chap. 5 | Assignment # 4:  |
| 13 | HeteroscedasticityNature, consequences, detection, and correction | Gujrati: Chap. 11 Asteriou & Hall: Chap. 6Schmidt: Chap. 13 | Quiz # 3  |
| 14 |  AutocorrelationNature, consequences, detection, and correction | Gujrati: Chap. 12Asteriou & Hall: Chap. 7Schmidt: Chap. 12 | Submission Assignment # 4 |
| 15 | Revision |  |  |

**Students are required to attend study sessions, and go through study materials**

*- Attend in-person and online Lecture sessions Take good notes of Lectures. Please check your emails and Moodle for downloading study material. 06 hours of self-study is recommended for Econ 300.*

**Recommended Textbook**

*Gujrati, D., Basic Econometrics, 5th ed., New York: McGraw-Hill*

**Supplementary Text Books:**

*Studenmund, A.H., Using Econometrics: A Practical Guide*

*Asteriou, Dimitrios and Stephen G.Hall, Applied Econometrics,2nd ed., Palgrave Macmillan, 2011*

*Schmidt, Stephen J., Econometrics, New York: McGraw-Hill, 2005*

Joshua D. Angrist and Pischke (2008), *Mostly Harmless Econometrics: An Empiricist’s Companion,* 1st Edition, Kindle Edition.

**Teaching-Learning Methodology**

* Lectures
* Example-oriented approach
* Homework / Quizzes

**Assessment**

Final Grade will be determined as follows:

* Assignments, quizzes, class activities 30%
* Class participation 5%
* Midterm Exam. 30%
* Final Exam. 35%

**Attendance Policy:**

-Students are advised to f*ollow University’s attendance policy*

**Classroom Participation:**

- **Class Participation 5%**

Class participation shall be based; both on the presence and performance in class activities (in person/email, breakdown rooms)

Wearing masks and observing social distancing in the classes.

Not using cell phones in the classroom.

**Grade Determination & Course Assessment as per FCC Policy:**

*- Relative Grading Policy for Econ-300*

*The late submission of the assignments would be penalized by deducting one mark per day.*

**Grading Legend**

Below is the grading legend of FCCU (published in all catalogues and available on the FCCU website) as approved by the Academic Council and applies for Spring, 2022 as well

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| Letter Grade | GPA | % | Letter Grade | GPA | % |
| A | 4.0 | 93% - 100% | A- | 3.7 | 90% - 92% |
| B+ | 3.3 | 87% - 89% | B | 3.0 | 83% - 86% |
| B- | 2.7 | 80% - 82% | C+ | 2.3 | 77% - 79% |
| C | 2.0 | 73% - 76% | C- | 1.7 | 70% - 72% |
| D+ | 1.3 | 67% - 69% | D | 1.0 | 60% - 66% |
| F | 0.0 | Bellow 60% | W | Officially Withdrawal |

**Student Conduct & Other Issues:**

*- Students are expected not to you cell phones during classroom lecture sessions. Please be civil, respectful, and supportive.*

- If any student faces any issues or has any concerns regarding the classroom climate and interactions, please feel free to contact HOD, Department of Economics Dr Muhammad Ali Bhatti at alibhatti@fccollege.edu.pk

**Changes to the Syllabus:**

This syllabus was designed to convey course information and requirements as accurately as possible. It is important to note however that it **may** be subject to change during the course depending on the needs of the class and other situational factors. Such changes would be for your benefit and you will be notified of them as soon as possible.

**Student Support Services**

[Student Counseling Services](https://www.fccollege.edu.pk/ccc/campus-counseling-center/)

[Writing Center](https://www.fccollege.edu.pk/faculty-of-humanities/writing-center/)

[Mercy Health Center](https://www.fccollege.edu.pk/mercy-health-center/)

**Other Useful Policy Documents:**

[Sexual Harassment Policy](https://www.fccollege.edu.pk/wp-content/uploads/2018/05/Doc1.pdf)

[Anti-Corruption Policy](https://www.fccollege.edu.pk/wp-content/uploads/2018/05/Anti-corruption.pdf)

[Academic integrity](https://www.fccollege.edu.pk/policy-on-academic-integrity/)

[Plagiarism Policy](https://www.fccollege.edu.pk/wp-content/uploads/2018/05/FCCU-Plagiarism-Policy.pdf)

 [Academic Calendar](https://www.fccollege.edu.pk/academic-calendar/)

*I expect that you will strictly follow the core values of FCCU and put your entire efforts to learn as per the course requirements, attend classes, read the textbook(s)/other assigned reading material and do the assignments in the stipulated time period*