



University of Management and Technology

Dr Hasan Murad School of Management (HSM)

Course Title: ----Topics in Advanced Econometrics -----
Course Code: -----EC – 710 -----
Resource Person: ---- ----
Department: -----Economics-----

HSM Vision

HSM envisions its success in the sustainable contribution that it will make to the industry, academia and research in public and private sector. HSM will lead by providing professionally competent and ethically conscious human resources engaged in the global and local context to foster socio-economic growth and sustainability for the society. HSM envisages having faculty with high research potential and a deep desire for cutting edge research including collaboration with national and international partners.

HSM Mission

Being a research-oriented and student-centric business school, we emphasize research publications in impact journals as well as state-of -the-art learning methodologies. We will prepare our students to become the future ethical business leaders and the guiding post for the society, while equipping them with the knowledge and skills required by world-class professionals. We will be the leading choice for organizations seeking highly talented human resource. HSM will foster internationalization with key stakeholders and actively work to exchange best practices with business schools across Pakistan through collaborations, workshops, conferences and other means.

Program Objectives

1. The main objective of the program is to enable participants to identify, evaluate and explain the financial decisions of the firms to maximize the value of the firms. This program has been designed for participants who are interested in serving research organizations, investment companies or would join teaching profession in finance discipline.

Course Objectives

Purpose of the course is to provide the participants with *ECONOMETRIC* and analytical tools useful for researchers and business managers. Future researchers and managers will use these tools in planning, executing and evaluating their business needs. Upon successfully completing this course, the participants will be able to:

1. To identify and formulate problems where quantitative techniques can have an impact.
2. To be able to use theory; mathematical modeling, and econometric tools to solve these problems and may reach to some policy implications.
3. To be able to assess data with healthy skepticism and seek expert help when needed.
4. To recognize when better data and information are needed for decision making.

Expected Learning Objectives

1. To aware participants about econometrics; its stages, data splicing, data types, its transformation and importance of VIF.
2. To let the participants know about the non-stationary data series, meaning and application of Co-integration, long run and short run coefficients and about causality test.
3. To familiarize participants about stepwise regression, factor analysis and SEM.
4. This content will provide understanding about various techniques used in Micro Panel data and it will also aware students about different diagnostic tests.
5. The contents will allow the scholars to know about different methods of macro panel data, various diagnostic tests, GMM, 2SLS and 3SLS.
6. The part will provide understanding about the four pillars of econometric modeling framework and application of Stochastic Frontier Analysis.

Expected Learning Outcomes

1. Scholars will be able to know the comprehensive understanding along with the application of the concepts used in applied econometrics. They will also learn about stages of econometric, data splicing, its types, data transformation and about variance inflation factor (VIF).
2. This will guide the scholars to differentiate among various types of unit root and cointegration techniques. This will also allow the scholars to understand various diagnostics to judge about and causality test.
3. This will allow participants to have hands on practice on Stepwise Regression, Factor Analysis and SEM.
4. After completing this content, the participants are expected to make an assignment on the similar contents by taking real life data.
5. After completing this section, the scholars are expected to apply macro panel data, 2SLS, 3SLS and GMM on a practical data.
6. After completing this section, the scholars are expected to learn about the four pillars of econometric modeling framework and are expected to apply Stochastic Frontier Model.

Teaching Methodology (List methodologies used -example are given below)

Interactive Classes

Case based teaching

Class Activities

Applied Projects

Experiential Learning

STUDENTS ARE REQUIRED TO READ AND UNDERSTAND ALL ITEMS OUTLINED IN THE PARTICIPANT HANDBOOK

Class Policy:-

- **Be On Time**
You need to be at class at the assigned time. After 10 minutes past the assigned time, you will be marked absent.
- **Mobile Policy**
TURN OFF YOUR MOBILE PHONE! It is unprofessional to be texting or otherwise.

- Email Policy

READ YOUR EMAILS! You are responsible if you miss a deadline because you did not read your email. Participants should regularly check their university emails accounts regularly and respond accordingly.
- Class Attendance Policy

A minimum of 80% attendance is required for a participant to be eligible to sit in the final examination. Being sick and going to weddings are absences and will not be counted as present. You have the opportunity to use 6 absences out of 30 classes. Participants with less than 80% of attendance in a course will be given grade 'F' (Fail) and will not be allowed to take end term exams. International students who will be leaving for visa during semester should not use any days off except for visa trip. Otherwise they could reach short attendance.
- Withdraw Policy

Students may withdraw from a course till the end of the 12th week of the semester. Consequently, grade W will be awarded to the student which shall have no impact on the calculation of the GPA of the student. A Student withdrawing after the 12th week shall be automatically awarded "F" grade which shall count in the GPA.
- Moodle

UMT –LMS (Moodle) is an Open Source Course Management System (CMS), also known as a learning Management System (LMS). Participants should regularly visit the course website on MOODLE Course Management system, and fully benefit from its capabilities. If you are facing any problem using moodle, visit <http://oit.umt.edu.pk/moodle>. For further query send your queries to moodle@umt.edu.pk
- Harassment Policy

Sexual or any other harassment is prohibited and is constituted as punishable offence. Sexual or any other harassment of any participant will not be tolerated. All actions categorized as sexual or any other harassment when done physically or verbally would also be considered as sexual harassment when done using electronic media such as computers, mobiles, internet, emails etc.
- Use of Unfair Means/Honesty Policy

Any participant found using unfair means or assisting another participant during a class test/quiz, assignments or examination would be liable to disciplinary action.

- ### Plagiarism Policy

All students are required to attach a “Turnitin” report on every assignment, big or small. Any student who attempts to bypass “Turnitin” will receive “F” grade which will count towards the CGPA. The participants submit the plagiarism report to the resource person with every assignment, report, project, thesis etc. If student attempts to cheat “Turnitin”, he/she will receive a second “F” that will count towards the CGPA. There are special rules on plagiarism for final reports etc. all outlined in your handbook.

- ### Communication of Results

The results of quizzes, midterms and assignments are communicated to the participants during the semester and answer books are returned to them. It is the responsibility of the course instructor to keep the participants informed about his/her progress during the semester. The course instructor will inform a participant at least one week before the final examination related to his or her performance in the course.

Course Outline

Course Code: ...EC – 710.

Course Title: Topics in Advanced Econometrics...

Program	PhD Economics
Credit Hours	03
Duration	15 Weeks
Prerequisites (If any)	Students attending this course should have studied Basic Econometrics; Statistics, Quantitative Techniques & Methods or Equivalent
Resource Person Name and Email	
Counseling Timing (Room#)	
Contact no.	
Web Links:- (Face book, Linked In, Google Groups, Other platforms)	

Chairman/Director Programme Signature.....

Date.....

Dean's Signature.....

Date.....

Grade Evaluation Criteria

Following is the criteria for the distribution of marks to evaluate final grade in a semester.

Marks Evaluation	Marks in percentage
Assignments	20%
Mid Term	20%
Final Exam	30%
Term Paper	20%
Attendance & Class Participation	10%
Total	100%

Guidelines for Final Project

1. Select any published research article of any journal classified in JCR List published by Thomson and Reuters (2017).
2. Use the knowledge of the various selected articles on your topic write term paper either for a case of Pakistan, SAARC Countries or for the whole World.
3. Identify that whether the challenges faced by the country / countries (based on your selection of country) are relevant in present time do your results support the issues or contradict the selected issue.
4. Suggest possible policies implications which could facilitate the countries to overcome their challenges.
5. Please explain how the suggested policies should be implemented and also highlight the difficulties which will stop the countries to implement your suggested policies.

DELIVERABLES AND DEADLINES:

<i>Deliverable</i>	<i>Details</i>	<i>Deadline</i>
Proposal of the Term Paper	1. Make proposal that will provide information about your plan of action your project. 2. The page limit is from 1-2 pages. (including country name)	Session # 6
Term Paper	Term paper should be comprehensive. The page limit is from 15-25 pages (excluding appendices).	Session # 13
Presentation	1. You will be given 15 – 20 minutes to share your work with rest of the class.	1. The presentation will be conducted in the last session and the detailed instructions will be provided later.

NOTES:

- The submission deadlines for each task are to be observed. Extensions will not be possible!
- The term paper should adhere to the standard norms of professional report writing.
- Proof read your term paper before submission.
- Provide references for all the cited articles in APA format.

CLASS PARTICIPATION

1. You are required to attend the classes regularly and with punctuality
2. You should come fully prepared in each class, and participate actively in class activities

Recommended Text

Considering the nature and requirement of this course no single book is recommended. However, there are some books available that can cover the course in its minimum requirements. This deficiency may be overcome by using some references besides a recommended book. Following is the recommended text as well as some reference texts for the course;

1. **Econometric Analysis of Panel Data**
by Badi H. Baltagi
2. **The Econometrics of Panel Data: Fundamentals and Recent Developments in Theory and Practics**
by Laszlo Matyas and Patrick Sevestre (Eds.), Springer.
3. **Econometric Analysis of Cross Section and Panel Data**
by Jeffrey M. Wooldridge
4. **Econometric Methods**
by Jack Johnston and John Dinardo
5. **Applied Econometrics – A Modern Approach using Eviews and Microfit**
by Asteriou D. & Hall, S. G.
6. **Applied Time Series Econometrics**
by Walter Enders.

Sr. No.	Topics to be Covered in the Class	Contents	Learning Objectives	Learning Outcomes	Teaching Methodology
1	Introductory Session	<ul style="list-style-type: none"> Defining Econometrics Discussing Stages of Econometrics Sharing Importance of Data Splicing Types and Presentation of Data Series Discussing Data Transformation Approaches Sharing Importance of Variance Inflation Factor 	To aware participants about econometrics; its stages, data splicing, data types, its transformation and importance of VIF.	Scholars will be able to know the comprehensive understanding along with the application of the concepts used in applied econometrics. The will also learn about stages of econometric, data splicing, its types, data transformation and about variance inflation factor (VIF).	Lecture + Class Discussion + Demonstration Through Software
2	Approaches Based on Time Series	<ul style="list-style-type: none"> Descriptive Statistics Unit Root Tests Cointegration Approaches: Johanson & ARDL Discussing Long run & Short run Coefficients Estimating Diagnostics Causality Test 	To let the participants know about the non-stationary data series, meaning and application of Co-integration, long run and short run coefficients and about causality test.	This will guide the scholars to differentiate among various types of unit root and cointegration techniques. This will also allow the scholars to understand various diagnostics to judge about and causality test.	Lecture + Class Discussion + Demonstration Through Software
3	Approaches Based on Cross Sectional Data	<ul style="list-style-type: none"> Models When There is Multicollinearity: Stepwise Regression, Factor Analysis Models for Primary Data: SEM 	To familiarize participants about stepwise regression, factor analysis and SEM.	This will allow participants to have hands on practice on Stepwise Regression, Factor Analysis and SEM.	Lecture + Class Discussion + Demonstration Through Software
4	Approaches Based on Micro Panel Data	<ul style="list-style-type: none"> Models When Dependent is Not Continuous and Normal: Logit/Probit (Cross Sectional Data) Advantages of using Panel 	This content will provide understanding about various techniques used in Micro Panel data and it will also aware students about	After completing this content, the participants are expected to make an assignment on the similar contents by taking real life	Lecture + Class Discussion + Demonstration Through

		<p>Data Models</p> <ul style="list-style-type: none"> • Setting Up Panel Data and Data Presentation • Models of Unobserved Heterogeneity: • Panel Data Diagnostics 	different diagnostic tests.	data.	Software
5	Approaches Based on Macro Panel Data	<ul style="list-style-type: none"> • Panel Unit Root and Panel Cointegration Tests • Models for Panel Autocorrelation: Panel ARDL etc, FMOLS • Panel Data Diagnostics • Panel GMM • Endogeneity/ Simultaneity: 2SLS, 3SLS, GMM 	The contents will allow the scholars to know about different methods of macro panel data, various diagnostic tests, GMM, 2SLS and 3SLS.	After completing this section, the scholars are expected to apply macro panel data, 2SLS, 3SLS and GMM on a practical data.	Lecture + Class Discussion + Demonstration Through Software
6	Econometric Engineering	<ul style="list-style-type: none"> • Studying the 4 Pillars to Constitute an Econometric Modeling Framework: Data Type, Variable Nature, Functional Form and Estimation Model. • Special Models: Stochastic Frontier Analysis, Session on How to Prepare Papers for Submission in a Journal 	The part will provide understanding about the four pillars of econometric modeling framework and application of Stochastic Frontier Analysis.	After completing this section, the scholars are expected to learn about the four pillars of econometric modeling framework and are expected to apply Stochastic Frontier Model.	Lecture + Class Discussion + Demonstration Through Software
7	Term Paper Troubleshooting, Discussion of Special Cases	Presentations of Term Paper			