

**UNIVERSITY OF DELHI
DELHI SCHOOL OF ECONOMICS
DEPARTMENT OF ECONOMICS**

Minutes of Meeting

Subject : B.A. (Hons) Economics – Fourth Semester (2022)
Course : HC43: INTRODUCTORY ECONOMETRICS
Date of Meeting : 13th January 2022
Venue : Online
Chair : Prof. Pami Dua

Attended by:

- 1 Deepika Goel, Aryabhata College
- 2 Yogita Yadav, Sri Venkateshwara College
- 3 Priyanka Bhatia, SRCC College
- 4 Sonia Goel, Ramjas College
- 5 Poonam Kalra, St. Stephen's College
- 6 Archana Jain, DCAC College
- 7 Akanksha Aggarwal, Jesus and Mary College
- 8 Pratibha Madan, Kirori Mal College
- 9 Hena Oak, Miranda House
- 10 Abhinav Parashar, Sri Aurobindo College (Eve)
- 11 Gita Golani, Shyama Prasad Mukherji College
- 12 Reshmi Ganguly, LSR College
- 13 Rupali Sharma, SGTB Khalsa College
- 14 Abdul Rahim Ansari, Hindu College
- 15 Jasmine Jha, Hindu College
- 16 Nishtha Sadana, Kamala Nehru College
- 17 Namita Mathur, IP College
- 18 Nupur Kataria, Maitreyi College
- 19 Ankur Bhatnagar, Satyawati College
- 20 Narender Thakur, Bhim Rao Ambedkar College
- 21 Enakshi Sinha, Rajdhani College
- 22 Juhi Lohani Harjani, Deshbandhu College
- 23 Amrit Lal Meena, Moti Lal Nehru College
- 24 Rimpay, PGDAV College
- 25 Arun Kaushal, Shaheed Bhagat Singh College
- 26 Bhavna Seth, Dyal Singh College
- 27 Nikita Gupta, Shivaji College

A meeting of teachers of this course was held with a view to achieve the following aims:

- To review the reading list implemented in academic year 2020-21 and suggest changes for improvement if any.
- To discuss the pattern of the semester end exam
- To figure out how changes could be brought about in the listed topics to complete the course in time as well as to give a good intuition of the concepts to the students.

The issues that were further discussed are as follows:

1. Teachers were satisfied with the changes implemented in academic year 2020-21 and suggested that the same reading list could be continued for the current academic year 2021-22.
2. End semester exam would be of 75 marks with no specific section wise weightage and a particular question may cut across two or more topics.
3. It was also decided that in the final exam 7 questions should be asked out of which, a student should be asked to attempt 5 questions of 15 marks each. In case of an OBE (open book exam), pattern decided by university would be followed (which is 4 out of 6 questions at present).
4. The internal assessment would comprise of 10 marks Class test, 10 marks Class test/project using an econometrics software GRETL/EVIEWS/STATA/R/PYTHON/MS-EXCEL or any other suitable econometrics software. Attendance will carry 05 marks.
5. The project work can be kept optional this year and individual teachers can decide on undertaking it depending upon the constraints posed by the pandemic.
6. All the sub-topics under 'Review of Statistics' are important for understanding the concepts of econometrics. Other topics can also be discussed here as per the discretion of the instructor.
7. The teachers also suggested that the following instruction should appear in the final exam: 'All intermediate calculations should be rounded off to 4 decimal places. The values provided in statistical tables should not be rounded off. All final calculations should be rounded off to two decimal places.' This instruction would help to achieve uniformity for final answer across students.

A subcommittee was constituted to review the suggestions given during and after the meeting by the teachers. The committee consisted of the following teachers:

- 1 Deepika Goel, Aryabhata College
- 2 Priyanka Bhatia, SRCC College
- 3 Abdul Rahim Ansari, Hindu College

The details of the Syllabus, Topic-wise Reading list, recommended text books are attached.

SYLLABUS

- I. Nature and scope of Econometrics**
- II. Simple Linear Regression Model: Two Variable Case**
 - i. Estimation of model by method of ordinary least squares
 - ii. Properties of estimators
 - iii. Goodness of fit
 - iv. Testing of Hypotheses
 - v. Scaling and units of measurement
 - vi. Confidence intervals
 - vii. Gauss Markov Theorem
 - viii. Forecasting
- III. Multiple Linear Regression Model**
 - i. Estimation of parameters
 - ii. Properties of OLS estimators
 - iii. Goodness of fit- R^2 and Adjusted R^2
 - iv. Partial regression coefficients
 - v. Testing Hypotheses: Individual and Joint
 - vi. Functional Forms of Regression Models
 - vii. Qualitative (dummy) independent variables
- IV. Violations of Classical Assumptions: Consequences, Detection and Remedies**
 - i. Multicollinearity
 - ii. Heteroscedasticity
 - iii. Serial Correlation
- V. Specification Analysis**
 - i. Omission of a relevant variable
 - ii. Inclusion of irrelevant variable
 - iii. Tests of specification

TOPIC NO.	TOPIC	READINGS FROM CORE TEXTS
1.	<i>Nature and scope of Econometrics</i>	<i>Gujarati: Ch 1</i>
2.	<p>Simple Linear Regression Model: Two Variable Case</p> <ul style="list-style-type: none"> ❖ <i>Review of Statistics: normal distribution, chi-square, t- and F-distributions; tests for comparing parameters from two samples. Other topics can be discussed here as per the discretion of the instructor, since the concepts discussed here are applied in other topics.</i> ❖ <i>Estimation of model by method of ordinary least squares; Properties of estimators; Goodness of fit; Testing of Hypotheses; Scaling and units of measurement; Confidence intervals; Gauss Markov Theorem; Forecasting</i> 	<p><u>Review of Statistics</u> <i>Devore: Ch 7: Sec 7.4, Ch 9.1, 9.2, 9.5</i> <i>Gujarati: Appendix D, pages 507-510</i></p> <p><u>Two Variable Case:</u> <i>Gujarati: Ch 2, Ch 3</i></p> <p><i>Dougherty: Ch2 (excluding “A Monte Carlo Experiment”, that is Sec 2.4)</i></p>
3.	<p>Multiple Linear Regression Model</p> <ul style="list-style-type: none"> ❖ <i>Estimation of parameters; Properties of OLS estimators; Goodness of fit- R2 and Adjusted R2; Partial regression coefficients;</i> ❖ <i>Testing Hypotheses: Individual and Joint;</i> ❖ <i>Functional Forms of Regression Models;</i> ❖ <i>Qualitative (dummy) independent variables</i> 	<p><i>Gujarati: Ch 4, Ch 5, Ch 6 (excluding Sec 6.7)</i></p> <p><i>Dougherty: Ch3 (excluding Sec 3.4), Ch 5</i></p>
4.	<p>Violations of Classical Assumptions: Consequences, Detection and Remedies</p> <ul style="list-style-type: none"> ❖ <i>Multicollinearity;</i> ❖ <i>Heteroscedasticity;</i> ❖ <i>Auto-correlation</i> 	<p><i>Gujarati: Ch 8, Ch 9 (Excluding Sec 9.5), Ch 10 (Excluding Sec 10.6, Appendix 10A)</i></p> <p><i>Dougherty: Ch 3 (only sec 3.4 is to done), Ch 7: Goldfeld-Quandt test (p. 285-286 are to be done), Ch12 (pp 434-440 are to be done).</i></p>
5.	<p>Specification Analysis</p> <ul style="list-style-type: none"> ❖ <i>Omission of a relevant variable;</i> ❖ <i>Inclusion of irrelevant variable;</i> ❖ <i>Tests of specification</i> 	<p><i>Gujarati: Ch 7</i></p> <p><i>Dougherty: Ch 6: Sec 6.1, 6.2, 6.3, 6.5</i></p>

Essential Readings:

- D. N. Gujarati and D.C.Porter, *Essentials of Econometrics*, 4th Edition, McGraw Hill International Edition, 2010.
- Christopher Dougherty, *Introduction to Econometrics*, 4th edition, OUP, Indian edition, 2011.
- Jay L. Devore, *Probability and Statistics for Engineers*, Cengage Learning, 2010.
- Damodar Gujarati, *Econometrics by Example*, 2nd edition, Palgrave Macmillan, 2014. This book is particularly useful for students to do project work.

Recommended Readings for Teachers:

- Jeffrey M. Wooldridge, *Introduction to Econometrics: A Modern Approach*, 5th Edition, Cengage Learning, 2014.
- Maddala, G.S and Kajal Lahiri, *Introduction to Econometrics*, 4th edition, Wiley publication, 2009. This book is particularly useful for the discussion on the LM and Durbin's h tests for testing for autocorrelation.
- Jan Kmenta, *Elements of Econometrics*, Indian Reprint, Khosla Publishing House, 2008.