UNIVERSITY OF DELHI
DELHI SCHOOL OF ECONOMICS
DEPARTMENT OF ECONOMICS

Minutes of Meeting

Subject	:	B.A. (Hons) Economics – Fourth Semester (2017)
Course	:	COURSE 10: INTRODUCTORY ECONOMETRICS
Date of Meeting	:	13th January 2017
Venue	:	Department of Economics, Delhi School of Economics, University of Delhi
Chair	:	Prof. Pami Dua

Attended by:

1. Krishna Ram, Shivaji College
2. Gita Golani, SPM College
3. Apoorva Gupta, Ramjas College
4. Padma Suresh M, Sri Venkateshwara College
5. Navin Kumar, Lakshmi Bai College
6. Bhavna Seth, Dyal Singh College (M)
7. Shweta Nanda, A.R.S.D College
8. Ritika Aggarwal, PGDAV College
9. Ashish Kr. Sedai, IP College
10. Dr. Anchal Arora, Shyam Lal College (M)
11. Deepika Goel, Aryabhatta College
12. Dr. Ankur Bhatnagar, Satyawati College (M)
13. Nita Singh, Satyawati College (E)
14. Shailu Singh, Hansraj College
15. Manjula Singh, St. Stephen's College
16. Simin Akhter, Zakir Husain College
17. Sanjay Kumar, Dayal Singh College (M)
18. Paramjeet Kaur, Sri Gobind Singh College Of Commerce
19. Arun Kumar Kaushal, Shaheed Bhagat Singh College
20. Shilpa Chaudhary, Janaki Devi Memorial College
21. Shikha Singh, Daulat Ram College
22. Reshmi Ganguly, LSR College
23. Neetu Chopra, Miranda House
24. Rakesh Kumar, A.R.S.D College
25. Priyanka Bhatia, Sri Ram College of Commerce
26. Garima Aggarwal, Sri Ram College of Commerce

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

- To finalise the topic wise reading list according to the newly framed CBCS course structure
- 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 a give a good intuition of the concepts to the students.

The issues discussed at the meeting were as follows:

1. Marks allocation in the final exam question paper would be as follows: Maximum Marks: 75
   It was decided that no specific section wise weightage should be given and it should be left open to the paper setter as a particular question may cut across two or more topics.

2. 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.

3. Since students have already been exposed to Jay L. Devore, "Probability and statistics for Engineers", Cengage Learning, 2010 in the third semester, hence it was decided to continue the same text for the topics on "Statistical Inference". All the sub-topics under this topic are equally important for understanding the concepts of econometrics as well as from an examination point of view. This should also be brought to the notice of the paper setter.

4. The internal assessment would be a total of 25 marks which would comprise of 10 marks Class test, 10 marks Class test/project and 05 marks attendance. The project work is kept optional and individual teachers can decide on undertaking it depending upon the computer facilities in the college, time, and interest of the students. However it was also emphasized that the decision to undertake project or class test must be applicable on all students in a particular college.

A subcommittee was setup consisting of the following members to work on the topic wise reading list.

1. Ms. Deepika Goel, Aryabhatta College
2. Ms. Shailu Singh, Hans Raj College
3. Dr. Padma Suresh, Sri Venkateshwara College
4. Dr. Shilpa Chaudhary, Janki Devi Memorial College
5. Ms. Simin Akhter, Zakir Hussain College
6. Dr. Ankur Bhatnagar, Satyawati College

7. Ms. Anjani K. Kochak, LSR College
8. Dr. Paramjit Kaur, Sri Guru Gobind Singh College of Commerce
9. Ms. Ritika Aggarwal, PGDAV college

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

SYLLABUS

I. **Nature and scope of Econometrics**

II. **Statistical Inference**
   i. Normal distribution; chi-sq, t- and F-distributions
   ii. Estimation of parameters
   iii. Testing of hypotheses
   iv. Defining statistical hypotheses
   v. Distributions of test statistics
   vi. Testing hypotheses related to population parameters
   vii. Type-I and Type-II errors; Power of a test
   viii. Tests for comparing parameters from two samples.

III. **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

IV. **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

V. **Violations of Classical Assumptions: Consequences, Detection and Remedies**
   i. Multicollinearity
   ii. Heteroscedasticity
   iii. Serial Correlation

VI. **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.	***Nature and scope of Econometrics***	***Gujarati***: **Ch 1**
2.	***Statistical Inference*** *Normal distribution; chi-sq, t- and F-distributions; estimation of parameters; testing of hypotheses; defining statistical hypotheses; distributions of test statistics; testing hypotheses related to population parameters; Type-I and Type-II errors; power of a test; tests for comparing parameters from two samples.*	***Devore*****: Ch 8: Sec 8.1,** **Sec 8.2 (excluding "β and sample size determination", that is pages 313-314 and 318-320),** **Sec 8.4 (excluding "More on interpreting p values", that is pages 335-337),** **Ch 9: Sec 9.1 (excluding "β and the choice of sample size", that is page 350)** ***Gujarati*****: Appendix D, pages 507-510**
3.	***Simple Linear Regression Model: Two Variable Case*** *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*	***Gujarati*****: Ch 2, Ch 3** ***Dougherty*****: Ch2** **(excluding "A Monte Carlo Experiment", that is Sec 2.4)**
4.	***Multiple Linear Regression Model*** *Estimation of parameters; Properties of OLS estimators; Goodness of fit- R2 and Adjusted R2; Partial regression coefficients; Testing Hypotheses: Individual and Joint; Functional Forms of Regression Models; Qualitative (dummy) independent variables*	***Gujarati*****: Ch 4,** **Ch 5,** **Ch 6: Sec 6.1 and 6.2** ***Dougherty*****: Ch3 (excluding Sec 3.4)**
5.	***Violations of Classical Assumptions: Consequences, Detection and Remedies*** *Multicollinearity; Heteroscedasticity; Auto-correlation*	***Gujarati*****: Ch 8,** **Ch 9 (Excluding Sec 9.5),** **Ch 10 (Excluding Sec 10.6, Appendix 10A)** ***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).**
6.	***Specification Analysis*** *Omission of a relevant variable; Inclusion of irrelevant variable; Tests of specification*	***Gujarati*****: Ch 7: Sec 7.1** ***Dougherty*****: Ch 6: Sec 6.1**

Reading List

i) Jay L. Devore, *Probability and Statistics for Engineers*, Cengage Learning, 2010.

ii) D. N. Gujarati and D.C.Porter, *Essentials of Econometrics,* 4^{th} Edition, McGraw Hill International Edition, 2010.

iii) Christopher Dougherty, *Introduction to Econometrics*, 4^{th} edition, OUP, Indian edition, 2011.

iv) John E. Freund, *Mathematical Statistics*, Prentice Hall, 2011.

v) Irwin Miller and Marylees Miller, *John E. Freund's Mathematical Statistics with Applications,* 8^{th} edition, Pearson.

It was decided that in addition to the sections mentioned above, the **teachers** may also refer to the relevant sections from the following books:

1. Christopher Dougherty, *Introduction to Econometrics*, 4^{th} edition, OUP, Indian edition. This book provides very good intuitive explanation for all the topics covered in the syllabus. The appendices R.9, R.10, R.13 provide a good explanation to the topics covered under statistical inference.
2. Damodar Gujarati, *Econometrics by Example,* 2^{nd} edition, Palgrave Macmillan, 2014.
3. Maddala, G.S and Kajal Lahiri, *Introduction to Econometrics*, 4^{th} edition, Wiley publication, 2009. This book is particularly useful for the discussion on the LM and Durbin's h tests for testing for autocorrelation.
4. Jan Kmenta , *Elements of Econometrics*, Indian Reprint, Khosla Publishing House, 2008.

NOTE: Readings recommended for the teachers will help to understand the intuition of the concepts but no specific question should be asked based upon them. The intuition is also useful for students but it is optional for them to use the books.