1. It was decided that for the academic session 2016-17, the main textbook would continue to be Basic Econometrics by Gujarati, Porter and Gunasekar (2012) supplemented by Wooldridge (2014) for selected topics. For applications using software, Econometrics by Example by Gujarati (2014) would be the recommended text.

2. It was also decided that in Section II.1 i.e. The Matrix Approach to Linear Regression Model, the entire Appendix C in Gujarati and Porter (2012), 5th edition (International) would be included in the reading list.

3. Teachers are advised to use the following textbook for reference in the Applied Econometrics course in the BA(Hons) Semester batch of 2016-17:

4. The Applied Econometrics course must orient students to do a research project and get hands on experience with appropriate software (GRETL/EViews/ R/Stata/EXCEL). This would form part of the Internal Assessment.

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

I. Stages in Empirical Econometric Research

II. The Linear Regression Model: Estimation, Specification and Diagnostic Testing
   i. The Matrix Approach to Linear Regression Model: The k-variable regression model, Assumptions of the Classical Linear Regression Model, OLS estimation, Variance-Covariance Matrix, Coefficient of Determination R².
   ii. Review of Functional forms and Qualitative explanatory variable regression models
   iii. Regression Diagnostics
       a. Detection of and remedial measures for Multicollinearity, Autocorrelation and Heteroscedasticity.
       b. Model Selection and Diagnostic Testing
           1. Tests of Specification errors: Detecting the presence of unnecessary variables, omitted variables and incorrect functional form (Ramsey RESET and Lagrange Multiplier Test for Adding Variables)
           2. Errors of measurement: Consequences and remedial measures
           3. Model Selection Criteria: R² and Adjusted R² criteria, Akaike’s Information Criterion and Schwarz’s Information Criterion.
           4. Additional topics in modelling (Outliers, Leverage, Influence; Recursive least Squares; Chow’s Prediction Failure Test; Missing Data)
           5. Non-normal errors and stochastic regressors

III. Advanced Topics in Regression Analysis
   i. Dynamic Econometric Models
       b. Estimation of Autoregressive Models
   ii. Instrumental Variable Estimation
       a. Omitted variables in a simple regression model
       b. Measurement errors

IV. Panel Data Models and Estimation techniques
The Pooled OLS Regression Model, the Fixed Effect Least Squares Dummy Variable Model, the Fixed Effect within Group Estimator, the Random Effects Model.

V. Introduction to Econometric Software (GRETL/ EViews/ R /Stata/ EXCEL: ANY ONE)
   i. Generation of data sets and data transformation; data analysis (Graphs and Plots, Summary Statistics, Correlation Matrix etc.)
   ii. Running an OLS regression; Testing for Linear Restrictions and Parameter Stability.
   iii. Regression Diagnostics: Collinearity, Autocorrelation, Heteroscedasticity, Normality of residuals
   iv. Estimation of Other Linear Models: Weighted Least squares, Cochran-Orcutt/ Hildreth-Lu/ Prais-Winsten etc.
   v. Model Selection Criteria (AIC, SIC) and Tests (Adding and Omitting Variables, Non Linearities: Squares, Cubes and Logs, Ramsey’s RESET test)
<table>
<thead>
<tr>
<th>S.No.</th>
<th>TOPIC</th>
<th>REFERENCES FROM RECOMMENDED TEXT BOOKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>II.ii.</td>
<td>Review of Functional forms and Qualitative explanatory variable regression models</td>
<td>Chapter 2 ‘Functional Forms of Regression Models’ and Chapter 3 ‘Qualitative Explanatory Variables Regression Models in Gujarati, Econometrics by Example.</td>
</tr>
<tr>
<td>II.iii.a</td>
<td>Regression Diagnostics: Detection of, and remedial measures for Multicollinearity, Autocorrelation Heteroscedasticity</td>
<td>Chapter 4 ‘Regression Diagnostic I: Multicollinearity’, Chapter 5 ‘Regression Diagnostic II: Heteroscedasticity’ and Chapter 6 ‘Regression Diagnostic III: Autocorrelation in Gujarati, Econometrics By Example</td>
</tr>
<tr>
<td>III.b.</td>
<td>Advanced Topics in Regression Analysis: Instrumental Variable Estimation</td>
<td>Chapter 15 ‘Instrumental Variable Estimation and Two Stage Least Squares’, Section 15.1, 15.2 and 15.4 in Wooldridge, Econometrics</td>
</tr>
<tr>
<td>IV.</td>
<td>Panel Data Models and Estimation Techniques</td>
<td>Chapter 16 ‘Panel Data Regression Models’ in Gujarati, Porter and Gunasekar, Basic Econometrics</td>
</tr>
</tbody>
</table>
Recommended textbooks


Student Assessment Summary

Students will have to pass the end-semester exam and the total of the internal assessment and end-semester exam as per university rules to clear the paper.

The end-semester final examination will be of 75 marks. The question paper will consist of seven questions of 15 marks each from Topics I, II, III and IV only. Students will have to answer any five questions.

The software skills of the students will be tested by the teachers during internal assessment and not in the end-semester final exam. The paper setting committee should take a note of this.

Internal assessment will be of 25 marks, divided further as follows:

1. Attendance: 5 marks
2. Class Test/ Assignment: 10 marks
3. Empirical project using the econometric software learnt: 10 marks. (Projects can be done in groups of 2 or 3)