Semester	IV
Paper Number	HECCR4101T
Paper Title	INTRODUCTORY ECONOMETRICS
No. of Credits	6
Theory/Composite	Theory
No. of periods assigned	5 Theory + 1 Tutorial
Course description/objective	This course provides a comprehensive introduction to basic econometric concepts and techniques. It covers statistical concepts of hypothesis testing, estimation and diagnostic testing of simple and multiple regression models. The course also covers the consequences of and tests for misspecification of regression models.
Syllabus	**Module 1 (40 marks)** **1. Nature and Scope of Econometrics** **2. Statistical Concepts** Normal distribution; chi-sq, t- and F-distributions; estimation of parameters; properties of estimators; 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. **3. Simple Linear Regression Model: Two Variable Case** Estimation of model by method of ordinary least squares; properties of estimators; goodness of fit; tests of hypotheses; scaling and units of measurement; confidence intervals; Gauss-Markov theorem; forecasting. **Number of Classes per week: 2** **Module 2 (40 marks)** **4. Multiple Linear Regression Model** Estimation of parameters; properties of OLS estimators; goodness of fit - R^2 and adjusted R^2; partial regression coefficients; testing hypotheses – individual and joint**;** functional forms of regression models; qualitative (dummy) independent variables. **5. Violations of Classical Assumptions: Consequences, Detection and Remedies** Multicollinearity; heteroscedasticity; serial correlation. **6. Specification Analysis** Omission of a relevant variable; inclusion of irrelevant variable; tests of specification errors. **Number of Classes per week: 3** **Tutorial Classes per week: 1**
Readings	1. Jay L. Devore, *Probability and Statistics for Engineers,* Cengage Learning, 2010. 2. John E. Freund, *Mathematical Statistics*, Prentice Hall, 1992. 3. Richard J. Larsen and Morris L. Marx, *An Introduction to Mathematical Statistics and its Applications,* Prentice Hall, 2011.

	4. D. N. Gujarati and D.C. Porter, *Essentials of Econometrics,* McGraw Hill, 4th edition, International Edition, 2009. 5. Christopher Dougherty, *Introduction to Econometrics*, Oxford University Press, 3rd edition, Indian edition, 2007. 6. Maddala, *Introduction to Econometrics,* Wiley. 7. Jan Kmenta, *Elements of Econometrics*, Indian Reprint, Khosla Publishing House, 2nd ed. 2008. 8. Jack Johnston and John Dinardo, *Econometric Methods*, McGraw Hill Higher Education; 4th edition (July 16, 1997)
Evaluation	Continuous Internal Assessment: 20 marks End- Semester Theory Examination: 80 marks
Paper Structure for End Sem Theory	<table><tr><th>Module</th><th>No. of Questions to be Answered</th><th>No. of Alternatives</th><th>Marks</th></tr><tr><td>Module 1</td><td>2</td><td>3</td><td>5 x 2 = 10</td></tr><tr><td></td><td>2</td><td>3</td><td>15 x 2 = 30</td></tr><tr><td>Module 2</td><td>2</td><td>3</td><td>5 x 2 = 10</td></tr><tr><td></td><td>2</td><td>3</td><td>15 x 2 = 30</td></tr><tr><td colspan="3">Total Marks</td><td>80</td></tr></table>