

## SEMESTER-II

ECN-H-C-203-T	INTRODUCTORY STATISTICS FOR ECONOMICS	(06 Credits, 60 Lectures)
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**Credits 06, Lectures 60, Tutorials 15 Marks: 20 (MSE)+ 80 (ESE) =100**

**Pass Marks: (MSE:08+ ESE: 32)= 40**

**Instruction to Question Setter for :- Mid**

*Semester Examination (MSE):*

*1/2 Hrs. One semester internal Assessment (SIA) of 10 marks*

*End Semester Examination (ESE): Full Marks 80, Time 3 Hrs.*

*Five Questions have to be answered out of total of nine Questions of 16 marks each. Question no 1 is compulsory. Question No.1A will contain 04 MCQ of 02 mark each. Question No.1B will comprise of 02 short answer type questions of 04 marks each ( to be answered in about 100 words each). Any four questions from 2 to 9 are to be answered. Question nos. 2 to 8 shall be of descriptive type of 16 marks each. Question no 9 will be of short note type 4 questions, each carrying 8 marks in which any two should be answered (8x2=16).*

### **Unit 1 : Introduction to Statistics**

- 1.1 Definition and Scope of Statistics
- 1.2 Collection of Data – Primary and Secondary Data ; Methods of collecting Primary and Secondary Data
- 1.3 Methods of Collecting Primary Data – Census and Sampling Methods; Methods of Sampling
- 1.4 : Classification and Tabulation of Data
- 1.5 Presentation of Data - Tabular ; Diagrammatic and Graphic

### **Unit 2: Univariate Analysis**

- 2.1 Measures of Central Tendency – Arithmetic Mean, Median, Mode, Geometric Mean and Harmonic Mean
- 2.2 Measures of Dispersion – Range, Mean Deviation, Standard
- 2.3 Deviation, Coefficient of Variation and Quartile Deviation
- 2.4 Skewness and Kurtosis

### **Unit 3:Bivariate Analysis**

- 3.1 Correlation – Definition; Types; Karl Pearson and Rank Correlation
- 3.2 Coefficient; Properties of Correlation
- 3.3 Regression – Lines of Regression; Least Squares Method and
- 3.4 Interpretation of Regression Coefficients

### **Unit 4: Time Series and Index Numbers**

- 4.1 Time Series Analysis – Concept; Component; Trend Line and Trend
- 4.2 Values by Least Squares Method
- 4.3 4.2: Index Numbers -Concept; Price relative; Quantity relative; Weighted Index Numbers; Problems in the Construction of Index Numbers and Limitations of Index Numbers
- 4.4 Methods of Construction of Index Numbers –Laspeyre, Paasche, Fisherand Consumer Price Index
- 4.5 Tests for Adequacy of Index Number – Time Reversal Test & Factor, Reversal Test

### **Unit 5: Probability**

- 5.1 Basic Concepts – Random Experiments, Sample Space and Events
- 5.2 Definition of Probability – Classical, Statistical and Axiomatic
- 5.3 Rules of Probability – Addition and Multiplication Theorem; Bayes Theorem

### **Suggested Readings:-**

1. Statistics For Economics , N.M. Shah, Arya Publications
2. Schaum's Outline of Theory and Problems of Statistics , Murray R. Spiegel, Larry J. Stephens , Tata McGraw –Hill Edition
3. Basic Statistics , B.L.Agarwal, New Age International Publishers
4. Quantitative Techniques ( Hindi Edition) , Dr. B.N. Gupta , SBPD Publication
5. Business Statistics , V.C. Sinha and Alok Gupta , SPBD Publication
6. Fundamentals of Statistics , S.C. Gupta , Himalaya Publishing House

## SEMESTER-II

ECN-H-C-204-T	ENVIRONMENTAL ECONOMICS	(06 Credits, 60 Lectures)
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**Credits 06, Lectures 60, Tutorials 15 Marks: 20 (MSE)+ 80 (ESE) =100**

**Pass Marks: (MSE:08+ ESE: 32)= 40**

**Instruction to Question Setter for :- Mid Semester Examination (MSE):**

*1/2 Hrs. One semester internal Assessment (SIA) of 10 marks*

*End Semester Examination (ESE): Full Marks 80, Time 3 Hrs.*

*Five Questions have to be answered out of total of nine Questions of 16 marks each. Question no 1 is compulsory. Question No.1A will contain 04 MCQ of 02 mark each. Question No.1B will comprise of 02 short answer type questions of 04 marks each ( to be answered in about 100 words each). Any four questions from 2 to 9 are to be answered. Question nos. 2 to 8 shall be of descriptive type of 16 marks each. Question no 9 will be of short note type 4 questions, each carrying 8 marks in which any two should be answered (8x2=16).*

### **Unit 1 : Introduction**

- 1.1 Meaning and Scope of Environmental Economics.
- 1.2 Meaning and characteristics of Environmental goods.
- 1.3 Renewable and Non-renewable resources.
- 1.4 Common Property Resources.
- 1.5 Economic Development & Environment- Two Way Linkage

### **Unit 2: Environmental Externalities**

- 2.1 Externalities and market failure; Negative &Positive Externalities.
- 2.2 Pareto Optimality and market failure in the presence of externalities.
- 2.3 Pigouvian taxes and subsidies.
- 2.4 Sustainable Development- concept and indicators.

### **Unit 3: Environmental Issues**

- 3.1 Environmental Degradation- Land, Forest and Natural Resource degradation;
- 3.2 Causes, Effects and Solutions to Environmental Degradation.
- 3.3 Problems of Pollution- Air & Water Pollution.

### **Unit 4: Environmental Policies**

- 4.1 National Environment Policy.
- 4.2 National Water Policy.
- 4.3 National Forest Policy.
- 4.4 WTO & The Environment.
- 4.5 Climate Change and International Agreements.
- 4.6 Green GDP; Carbon Foot Print; Environmental Green Accounting.

**Suggested Readings-**

1. Ganesa murthy, V.S. Environmental Economics in India, New Century Publication
2. Bhattacharya, R.N. Environmental Economics-An Indian Perspective, Oxford University Press
3. T.Eugine, Environmental Economics, Vrinda Publication
4. Baumal, W.J. & W.E. Oates, The Theory of Environmental Policy, Cambridge University Press
5. Charles D. Kolstad, Intermediate Environmental Economics, Oxford University Press
6. N. Hanley, Jason F. & Shogren, Environmental Economics in theory and practice, Macmillan Education UK
7. Awashti N. M, Paryavaran Adhyayan (Hindi), Laxmi Narayana Agarwal, Agra
8. Muhtukrishnan Subhashini, Economics of Environment, Mediamatics

**SEMESTER-II**

ECN-H-GE-202-T	Paper XYZ-H-GE-202-T as per choice of course from list in Annexure 3	(06 Credits, 60 Lectures)
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Students must choose a course XYZ out of the courses offered in Annexure 3. They shall study one paper as a GE paper of that course in Semesters I, II, III and IV as offered by that course.

**Credits 06, Lectures 60, Tutorials 15**

**Marks: 20 (MSE)+ 80 (ESE) =100**

**Pass Marks: (MSE:08+ ESE: 32)= 40**

( See Annexure 2 for choice of course offered)

**SEMESTER-II**

ECN-H-AECC-202-T	ENVIRONMENTAL SCIENCE	(02 Credits, 30 Lectures)
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This is a compulsory course in Ability Enhancement and common to all Courses of all Faculties in the University.

**ENVIRONMENTAL SCIENCE**

**Credit Theory 02), Theory-30 Lectures**

**Marks:10(MSE) +40 (ESE) =50.**

**Pass Marks: (MSE:04 + ESE: 16) =20**

(See Annexure 1 for Syllabus on Environmental Science).