

**Practical Plan**

**Name of the college: Government college of Arts Science and commerce Sanquelim Goa.**

**Name of Faculty: Dr. Guruprasad R. Naik**      **Subject: Economics**

**Paper code: ECO-141**      **Program: FYBA SEC**      **Division: Batch II**

**Academic year: 2024 - 2025**      **Semester: I**      **Total Practicals/Labs: 32 (32 hours)**

**Credits: 2**

**Course Objectives:- To familiarize the students with Basic statistical concepts and their application using open-source software (spreadsheets and GRETL).**

**Expected Course Outcome:**  
1) To familiarize the students with Basic statistical concepts and their application using open-source software (spreadsheets and GRETL).

**Student Learning Outcome:**  
1) To familiarize the students with Basic statistical concepts and their application using open-source software (spreadsheets and GRETL).

Month	Practicals/Labs Scheduled Date	No. of Practical's/Labs planned	List of Experiments	Reference books
June	28/06/2024-29/06/2024		Meaning of random variable (discrete and continuous), generating random variables from random experiments (coin toss or rolling dice etc), Probability distributions of random variables: meaning, examples (discrete and continuous)	<ul style="list-style-type: none"> <li>● Gupta S.C. (2016): Fundamentals of Statistics, 7 th Edition, Himalaya Publishing House Pvt. Ltd, Mumbai</li> <li>● Adkins, L. C. (n.d.). Using gretl for Principles of Econometrics, 5th Edition Version 1.0.</li> <li>● Gerald Keller (2017): Statistics for Management and Economics, 11th Edition, Cengage Learning, USA.</li> <li>● Black, Ken. (2019). Business Statistics: For Contemporary Decision Making (10th). New York: West Publishing Company.</li> </ul>

				<ul style="list-style-type: none"> <li>● David M. Levine, David F. Stephan, Timothy C. Krehbiel,</li> </ul>
July	01/07/2024 -06/07/24	4	Quantitative (Discrete and Continuous) and Qualitative (categorical), Levels & Scales of measurement: Ratio/ interval data, ordinal and nominal data, suitable analysis methods,	<ul style="list-style-type: none"> <li>● Gupta S.C. (2016): Fundamentals of Statistics, 7 th Edition, Himalaya Publishing House Pvt. Ltd, Mumbai</li> <li>● Adkins, L. C. (n.d.). Using gretl for Principles of Econometrics, 5th Edition Version 1.0.</li> <li>● Gerald Keller (2017): Statistics for Management and Economics, 11th Edition, Cengage Learning, USA.</li> <li>● Black, Ken. (2019). Business Statistics: For Contemporary Decision Making (10th). New York: West Publishing Company.</li> <li>● David M. Levine, David F. Stephan, Timothy C. Krehbiel,</li> </ul>
July	08/07/2024-13/07/24	4	Primary and Secondary data - Meaning, differences, and examples of sources (Downloading data from RBI, WB etc)	<ul style="list-style-type: none"> <li>● Gupta S.C. (2016): Fundamentals of Statistics, 7 th Edition, Himalaya Publishing House Pvt. Ltd, Mumbai</li> <li>● Adkins, L. C. (n.d.). Using gretl for Principles of Econometrics, 5th Edition Version 1.0.</li> <li>● Gerald Keller (2017): Statistics for Management and Economics, 11th Edition, Cengage Learning, USA.</li> <li>● Black, Ken. (2019). Business Statistics: For Contemporary Decision Making (10th). New York: West Publishing Company.</li> <li>● David M. Levine, David F. Stephan, Timothy C. Krehbiel,</li> </ul>
July	15/07/2024-20/07/24	4	One-way and two-way Frequency tables	<ul style="list-style-type: none"> <li>● Gupta S.C. (2016): Fundamentals of Statistics, 7 th Edition, Himalaya Publishing House Pvt. Ltd, Mumbai</li> <li>● Adkins, L. C. (n.d.). Using gretl for Principles of Econometrics, 5th Edition Version 1.0.</li> <li>● Gerald Keller (2017): Statistics for Management and Economics, 11th Edition, Cengage Learning, USA.</li> <li>● Black, Ken. (2019). Business Statistics: For Contemporary Decision Making (10th). New York: West Publishing Company.</li> <li>● David M. Levine, David F. Stephan, Timothy C. Krehbiel,</li> </ul>
July	22/07/2024-27/07/24	4	Charts: Pie chart, bar chart, trendline, scatter plot, histogram	<ul style="list-style-type: none"> <li>● Gupta S.C. (2016): Fundamentals of Statistics, 7 th Edition, Himalaya Publishing House Pvt. Ltd, Mumbai</li> <li>● Adkins, L. C. (n.d.). Using gretl for Principles of Econometrics, 5th Edition Version 1.0.</li> <li>● Gerald Keller (2017): Statistics for Management and Economics, 11th Edition, Cengage Learning, USA.</li> </ul>

				<ul style="list-style-type: none"> <li>● Black, Ken. (2019). Business Statistics: For Contemporary Decision Making (10th). New York: West Publishing Company.</li> <li>● David M. Levine, David F. Stephan, Timothy C. Krehbiel,</li> </ul>
July	29/07/2024-03/08/24	4	Mean, Median, and Mode;	<ul style="list-style-type: none"> <li>● Gupta S.C. (2016): Fundamentals of Statistics, 7 th Edition, Himalaya Publishing House Pvt. Ltd, Mumbai</li> <li>● Adkins, L. C. (n.d.). Using gretl for Principles of Econometrics, 5th Edition Version 1.0.</li> <li>● Gerald Keller (2017): Statistics for Management and Economics, 11th Edition, Cengage Learning, USA.</li> <li>● Black, Ken. (2019). Business Statistics: For Contemporary Decision Making (10th). New York: West Publishing Company.</li> <li>● David M. Levine, David F. Stephan, Timothy C. Krehbiel,</li> </ul>
July	05/08/2024-10/08/24	4	Meaning, Merits & Demerits, Manual calculations (Discrete and Continuous)	<ul style="list-style-type: none"> <li>● Gupta S.C. (2016): Fundamentals of Statistics, 7 th Edition, Himalaya Publishing House Pvt. Ltd, Mumbai</li> <li>● Adkins, L. C. (n.d.). Using gretl for Principles of Econometrics, 5th Edition Version 1.0.</li> <li>● Gerald Keller (2017): Statistics for Management and Economics, 11th Edition, Cengage Learning, USA.</li> <li>● Black, Ken. (2019). Business Statistics: For Contemporary Decision Making (10th). New York: West Publishing Company.</li> <li>● David M. Levine, David F. Stephan, Timothy C. Krehbiel,</li> </ul>
August	12/08/2024-17/08/24	4	Range, Inter Quartile Range, Semi Quartile Range,	<ul style="list-style-type: none"> <li>● Gupta S.C. (2016): Fundamentals of Statistics, 7 th Edition, Himalaya Publishing House Pvt. Ltd, Mumbai</li> <li>● Adkins, L. C. (n.d.). Using gretl for Principles of Econometrics, 5th Edition Version 1.0.</li> <li>● Gerald Keller (2017): Statistics for Management and Economics, 11th Edition, Cengage Learning, USA.</li> <li>● Black, Ken. (2019). Business Statistics: For Contemporary Decision Making (10th). New York: West Publishing Company.</li> <li>● David M. Levine, David F. Stephan, Timothy C. Krehbiel,</li> </ul>
August	19/08/2024-24/08/24	4	Mean Deviation, Variance, and Standard Deviation.	<ul style="list-style-type: none"> <li>● Gupta S.C. (2016): Fundamentals of Statistics, 7 th Edition, Himalaya Publishing House Pvt. Ltd, Mumbai</li> <li>● Adkins, L. C. (n.d.). Using gretl for Principles of Econometrics, 5th Edition Version 1.0.</li> </ul>

				<ul style="list-style-type: none"> <li>● Gerald Keller (2017): Statistics for Management and Economics, 11th Edition, Cengage Learning, USA.</li> <li>● Black, Ken. (2019). Business Statistics: For Contemporary Decision Making (10th). New York: West Publishing Company.</li> <li>● David M. Levine, David F. Stephan, Timothy C. Krehbiel,</li> </ul>
August	26/08/2024-31/08/24	4	Skewness and Kurtosis - Meaning, types, and interpretations	<ul style="list-style-type: none"> <li>● Gupta S.C. (2016): Fundamentals of Statistics, 7 th Edition, Himalaya Publishing House Pvt. Ltd, Mumbai</li> <li>● Adkins, L. C. (n.d.). Using gretl for Principles of Econometrics, 5th Edition Version 1.0.</li> <li>● Gerald Keller (2017): Statistics for Management and Economics, 11th Edition, Cengage Learning, USA.</li> <li>● Black, Ken. (2019). Business Statistics: For Contemporary Decision Making (10th). New York: West Publishing Company.</li> <li>● David M. Levine, David F. Stephan, Timothy C. Krehbiel,</li> </ul>
September	02/09/2024-07/09/24	4	Primary data (cross-sectional): Cleaning, editing (re/naming variables, scale), and coding (categorical: nominal and ordinal variables, generating dummy variables)	<ul style="list-style-type: none"> <li>● Gupta S.C. (2016): Fundamentals of Statistics, 7 th Edition, Himalaya Publishing House Pvt. Ltd, Mumbai</li> <li>● Adkins, L. C. (n.d.). Using gretl for Principles of Econometrics, 5th Edition Version 1.0.</li> <li>● Gerald Keller (2017): Statistics for Management and Economics, 11th Edition, Cengage Learning, USA.</li> <li>● Black, Ken. (2019). Business Statistics: For Contemporary Decision Making (10th). New York: West Publishing Company.</li> <li>● David M. Levine, David F. Stephan, Timothy C. Krehbiel,</li> </ul>
September	09/09/2024-14/09/24	4	Commonly used Tables and Graphs (with interpretation)	<ul style="list-style-type: none"> <li>● Gupta S.C. (2016): Fundamentals of Statistics, 7 th Edition, Himalaya Publishing House Pvt. Ltd, Mumbai</li> <li>● Adkins, L. C. (n.d.). Using gretl for Principles of Econometrics, 5th Edition Version 1.0.</li> <li>● Gerald Keller (2017): Statistics for Management and Economics, 11th Edition, Cengage Learning, USA.</li> <li>● Black, Ken. (2019). Business Statistics: For Contemporary Decision Making (10th). New York: West Publishing Company.</li> <li>● David M. Levine, David F. Stephan, Timothy C. Krehbiel,</li> </ul>
September	16/09/2024-21/09/24		Descriptive statistics in spreadsheets with interpretation	<ul style="list-style-type: none"> <li>● Gupta S.C. (2016): Fundamentals of Statistics, 7 th Edition, Himalaya Publishing House Pvt. Ltd, Mumbai</li> </ul>

				<ul style="list-style-type: none"> <li>● Adkins, L. C. (n.d.). Using gretl for Principles of Econometrics, 5th Edition Version 1.0.</li> <li>● Gerald Keller (2017): Statistics for Management and Economics, 11th Edition, Cengage Learning, USA.</li> <li>● Black, Ken. (2019). Business Statistics: For Contemporary Decision Making (10th). New York: West Publishing Company.</li> <li>● David M. Levine, David F. Stephan, Timothy C. Krehbiel,</li> </ul>
September	06/09/2024-12/09/24	<b>CHATURTHI BREAK</b>		
September	23/09/2024-28/09/24	4	Installing Gretl, Introduction to Gretl, Gretl basics,	<ul style="list-style-type: none"> <li>● Gupta S.C. (2016): Fundamentals of Statistics, 7 th Edition, Himalaya Publishing House Pvt. Ltd, Mumbai</li> <li>● Adkins, L. C. (n.d.). Using gretl for Principles of Econometrics, 5th Edition Version 1.0.</li> <li>● Gerald Keller (2017): Statistics for Management and Economics, 11th Edition, Cengage Learning, USA.</li> <li>● Black, Ken. (2019). Business Statistics: For Contemporary Decision Making (10th). New York: West Publishing Company.</li> <li>● David M. Levine, David F. Stephan, Timothy C. Krehbiel,</li> </ul>
September/October	30/09/2024-05/10/24	4	loading sample data, generating new variables, Importing data to Gretl	<ul style="list-style-type: none"> <li>● Gupta S.C. (2016): Fundamentals of Statistics, 7 th Edition, Himalaya Publishing House Pvt. Ltd, Mumbai</li> <li>● Adkins, L. C. (n.d.). Using gretl for Principles of Econometrics, 5th Edition Version 1.0.</li> <li>● Gerald Keller (2017): Statistics for Management and Economics, 11th Edition, Cengage Learning, USA.</li> <li>● Black, Ken. (2019). Business Statistics: For Contemporary Decision Making (10th). New York: West Publishing Company.</li> <li>● David M. Levine, David F. Stephan, Timothy C. Krehbiel,</li> </ul>
October	07/10/2024-12/10/24	4	Exploring inbuilt datasets for descriptive statistics and their interpretation.	<ul style="list-style-type: none"> <li>● Gupta S.C. (2016): Fundamentals of Statistics, 7 th Edition, Himalaya Publishing House Pvt. Ltd, Mumbai</li> <li>● Adkins, L. C. (n.d.). Using gretl for Principles of Econometrics, 5th Edition Version 1.0.</li> <li>● Gerald Keller (2017): Statistics for Management and Economics, 11th Edition, Cengage Learning, USA.</li> <li>● Black, Ken. (2019). Business Statistics: For Contemporary Decision Making (10th). New York: West Publishing Company.</li> </ul>

				<ul style="list-style-type: none"> <li>● David M. Levine, David F. Stephan, Timothy C. Krehbiel,</li> </ul>
October	14/10/2024- 19/10/24	4	Exploring inbuilt datasets for descriptive statistics and their interpretation.	<ul style="list-style-type: none"> <li>● Gupta S.C. (2016): Fundamentals of Statistics, 7 th Edition, Himalaya Publishing House Pvt. Ltd, Mumbai</li> <li>● Adkins, L. C. (n.d.). Using gretl for Principles of Econometrics, 5th Edition Version 1.0.</li> <li>● Gerald Keller (2017): Statistics for Management and Economics, 11th Edition, Cengage Learning, USA.</li> <li>● Black, Ken. (2019). Business Statistics: For Contemporary Decision Making (10th). New York: West Publishing Company.</li> <li>● David M. Levine, David F. Stephan, Timothy C. Krehbiel,</li> </ul>
October	21/10/2024- 22/10/24	00	-	-

**\*Assessment Rubrics**

Component	Max Marks
ISA 1	05
ISA 2	05
ISA 3	05
ISA 4	05
ISA 5	05
Semester End Exam Theory	20
Semester End Exam Practical	40