



## University of Kerala

Discipline	STATISTICS				
Course Code	UK3DSCSTA201				
Course Title	BUSINESS DATA ANALYTICS III				
Type of Course	DSC				
Semester	3				
Academic Level	200 – 299				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	4	3 hours	-	2 hours	5
Pre-requisites					

### COURSE OUTCOMES

Up on Completion of the course, students should be able to:		Cognitive level	PSO Addressed
CO1	Explain the fundamental concepts of testing of hypothesis.	Understand	PSO -1
CO2	Apply various tests for hypotheses	Apply	PSO –1, 2,3 5,4
CO3	Describe basic concepts of time series analysis	Understand	PSO -1
CO4	Determine trend using different methods	Apply	PSO 1,2,3,4,5
CO5	Compute various index numbers and interpret the results	Apply	PSO -1,2,3,4,5

### COURSE CONTENT

Module	Content	Hrs
<b>I</b>	<b>Testing of Hypotheses</b>	<b>10</b>
	<b>Testing of Hypotheses:</b> Concepts of statistical hypothesis, Simple and composite hypothesis, Null and alternate hypothesis, One tailed and two-tailed tests, Type I and type II errors, Level of significance and power of tests, p –value, Various steps involved in testing statistical hypothesis Large sample tests: Tests concerning significance of mean, difference between means, significance of proportion, difference between proportions (only applications to numerical problems, no derivations required)	
<b>II</b>	<b>Small Sample Tests</b>	<b>10</b>
	Small Sample Tests: Tests concerning significance of mean, difference between means, significance of correlation coefficient and significance of variances (only applications to numerical problems, no derivations required).	
<b>III</b>	<b>Time Series</b>	<b>12</b>
	Time Series : Analysis of Time Series-Causes of Variation in Time Series Data - Components of Time Series- Additive and Multiplicative Models-	

	Determination of Trend By Semi Average, Moving Average and Least Square (Linear Second Degree And Exponential) Methods.	
<b>IV</b>	<b>Index Numbers</b>	<b>13</b>
	Index Numbers: Meaning and Types of Index Numbers-Problems in Construction of Index Numbers- Methods of Construction of Price and Quantity Indices, Errors in Index Numbers- Chain Base Index Numbers- Base Shifting - Splicing -Deflation -Customer Price Index and Its Uses.	
<b>V</b>	<b>PRACTICUM</b>	<b>30</b>
	Practical demonstration of the concepts mentioned in the second, third and fourth modules using spreadsheet software	

## REFERENCES

1. Agarwal, B.L. (2006). Basic Statistics. 4th Edition, New Age international (P) Ltd., New Delhi.
2. Gupta, S.C and Kapoor, V.K (2002). Fundamentals of Mathematical Statistics, Sultan Chand.
3. Medhi J. (2005). Statistical Methods-An Introductory Text. New Age International (P) Ltd, New Delhi.
4. Miah, A. Q. (2016). Applied statistics for social and management sciences. Berlin: Springer.
5. Mukhopadhyay, P. (2016). Applied statistics. Books and Allied (P) Limited.
6. Sharma, J. K. (2012). Business statistics. Pearson Education India..
7. Sah, A. N. (2009). Data analysis using microsoft excel. Excel Books India.
8. <https://www.libreoffice.org/calc>

## Name of the Course: BUSINESS STATISTICS- III

Credits: 3:0:1 (Lecture:Tutorial:Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)	Practical (P)
CO1	Explain the fundamental concepts of testing of hypothesis.	PSO -1 PO 1	Understand	C	L	
CO2	Apply various tests for hypotheses	PSO -1, 2,3 5,4 PO 1 2 4 7	Apply	C, P	L	P
CO3	Describe basic concepts of time series analysis	PSO -1 PO 1	Understand	C	L	P
CO4	Determine trend using different methods	PSO 1,2,3,4,5 PO 1 2 4 7	Apply	C, P	L	P
CO5	Compute various index numbers and interpret the results	PSO - 1,2,3,4,5 PO 1 2 4 7	Apply	C P	L	P

**Mapping of COs with PSOs and POs :**

	PS O1	PS O2	PS O3	PS O4	PS O5	PS O6	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
CO 1	2						1							
CO 2	1	2	1	1	2		1	2		1			2	
CO 3	1						1							
CO 4	1	2	1	1	2		1	1		1			2	
CO 5	1	2	1	1	2		1	1		1			2	

**Correlation Levels:**

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

**Assessment Rubrics:**

- Quiz / Assignment/ Discussion / Seminar
- Internal Examinations
- Practical Evaluation
- End Semester Examinations

**Mapping of COs to Assessment Rubrics :**

	Internal Exam	Quiz / Assignment/ Discussion / Seminar	Practical Evaluation	End Semester Examinations
CO 1	✓	✓		✓
CO 2	✓	✓		✓
CO 3	✓	✓		✓
CO 4	✓	✓		✓
CO 5	✓	✓		✓