



Vidya Prasarak Mandal's
**Advanced Study
Center**



Syllabus for

**Programme : P. G. Diploma
Course : Applications of Statistics**

With effect from academic year

2016 - 2017

Syllabus and Question Paper Pattern of

Course : Applications of Statistics

CourseCode	Course Title	No. of lectures	Credits
ASCAS01	Descriptive Statistics	36	3
ASCAS02	Elementary Probability Theory, and Inference	36	3
ASCAS03	Financial Mathematics and Quality Control	36	3
ASCASP1	Practical Training I	08	3
ASCASP2	Practical Training II	08	3
ASCASP3	Internal Assignments	20	1
<i>Total Credits</i>			<i>16</i>

Course Code: ASCAS01	Course Title Descriptive Statistics	No. of lectures
Unit I : Data Types and Data Condensation		12
Unit II : Measurements of Characteristics of data		12
Unit III : Correlation, Association and Time series		12

Course Code: ASCAS02	Course Title Elementary Probability Theory, and Inference	No. of lectures
Unit I : Probability and probability distributions		12
Unit II : Some specified distributions and concept of Estimation& testing		12
Unit III : Testing of Hypothesis, and Design of Experiments		12

Course Code: ASCAS03	Course Title Financial Mathematics and Quality Control	No. of lectures
Unit I : Basics of Actuarial science		12
Unit II : Investment- Securities Market & Mutual Funds		12
Unit III : Statistical Quality Control		12

Course Code: ASCASP1	Course Title Practical Training I
<p>Following practicals are to be performed using Microsoft Excel / Spreadsheet of Open Office / any other suitable software</p> <ol style="list-style-type: none"> 1. Diagrammatic representation- Bar-charts, Pie chart. 2. Descriptive statistics 3. Bivariate data 4. Time series analysis.- calculation of trend values by using moving averages and method of least square 5. Probability problems 6. Problems based on distributions 7. Calculation of Present value in terms of commutation functions of Life annuities and Temporary life annuities (immediate and due) with and without deferment period 8. Calculation of beta value in case of share market 9. Calculation of NAV in case of mutual funds 10. Control charts 	

Course Code: ASCASP2	Course Title Practical Training II
<p>Following practicals are to be performed using 'R'</p> <ol style="list-style-type: none"> 1. Fundamentals of R, Diagrammatic representation- Bar-charts, Pie chart 2. Descriptive statistics- R functions -Calculation of mean, median, quartiles, variance, s.d. minimum, maximum range coefficient of range, coefficient of variation. Measurement of skewness and kurtosis. 3. Probability problems 4. Problems based on distributions. 5. Correlation and regression analysis. 6. Testing of hypothesis- Z, t, F 7. Applications of chi square test 8. ANOVA 	

Reference books:

Course Code : ASCAS01 Descriptive Statistics

1. Elementary Business Statistics- A.V. Deshpande, M.L. Vaidya, D.M. Doke
2. Topics in Statistical Methodology (1992), First edition, Wiley Eastern Ltd- Biswas S
3. Quantitative Techniques For Managerial Decisions: , (2001), MacMillan India Ltd.: J K Sharma
4. Mathematical Statistics, Fifteenth edition, S. Chand and Company: J. N. Kapur, H. C. Saxena
5. Business Statistics For Contemporary Decision Making- Ken Black
6. Descriptive statistics- M.N. Welling, P.P. Khandeparkar, R.J. Pawar, S.S. Naralkar
7. Statistical Techniques- M.N. Welling, P.M. Saraph, S.M. Diwali
8. Descriptive Statistics- R.J. Shah
9. New Mathematical Statistics, Satya Prakashan, New Market, New Delhi,5(1989): Sanjay Arora and Bansi Lal

Course Code : ASCAS02 Elementary Probability Theory, And Inference

1. The Design and Analysis of Clinical Experiments, Second edition,,: Fleiss J. L. (1989), Wiley and Sons
2. Options futures, and other derivatives: –7th edition. Prentice Hall: Hull John C
3. Business Statistics For Contemporary Decision Making- Ken Black
4. Statistical Methods- R.J. Shah
5. Fundamentals of Applied Statistics, Fourth edition, Sultan Chand & Sons, S. C. Gupta&. V. K. Kapoor
6. Fundamentals Of Mathematical Statistics- S.C. Gupta, V.K. Kapoor

Course Code : ASCAS03 Financial Mathematics And Quality Control

1. Elementary Business Mathematics-, A.V Deshpande, M.L. Vaidya, A.P. Kumtha
2. Mathematical Basis of Life Assurance, First edition Insurance Institute of India: C.S Modi, R.V. Joshi, S.P. Dixit,.
3. Biostatistics- Daniel W. D.
4. Fundamentals of Clinical Trials, First edition, Springer Verlag.: Demets D. L. Friedman L. M., Furburg C., (1998)
5. Fundamentals of futures of Options and Marke Operation Research: 6th edition- Hull John C.
6. Business Mathematics- Dr. Neena Joshi
7. Life Contingencies, First edition, Heineman educational books London: Neill A.
8. Fundamental Of Applied Statistics- S.C. Gupta, V.K. Kapoor
9. Indian mutual funds handbook - A guide for industry professionals and intelligent investors by Shankaran Sunder
10. Biostatistical Analysis, Fourth edition, Pearson's education: Zar Jerrold H.

Book for Practical:

Statistical Methods Using R Software; Nirali Publications - V.R.Pawagi & Saroj A. Ranade

Evaluation Scheme

Theory Examination : Suggested Format of Question paper

Duration : 3 Hours

Total Marks : 100

- **All questions are compulsory**

Q. 1	Based on Unit I	25
	OR	
Q. 1	Based on Unit I	25
Q. 2	Based on Unit II	25
	OR	
Q. 2	Based on Unit II	25
Q. 3	Based on Unit III	25
	OR	
Q. 3	Based on Unit III	25
Q. 4	Based on Unit I, II, III	25
	OR	
Q. 4	Based on Unit I, II, III	25

Each question may have following subquestions

Full length question,	15 Marks
Short answer question	10 Marks
Short note questions	5 Marks
Objectives	2 Marks

Internal Assignments have to be submitted in the hard copy format in the office of Advanced Study Center

Total number of assignments: 20 each carrying 5 marks; Total marks: 100

Total marks of Theory Examination

Course Code	Maximum Marks
ASCAS01	100
ASCAS02	100
ASCAS03	100
TOTAL	300

Practical Examination

Course Code	Details	Marks	Viva	Journal	Total
ASCASP1	Practical I	80	10	10	100
ASCASP2	Practical II	80	10	10	100
Total				200	

Total of Internal Assignments	100 Marks
Total of Theory Examination	300 Marks
Total of Practical Examination	200 Marks
Grand Total	600 Marks

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