

## **CURRICULAM/SYLLABI FOR CARRIER ORIENTED ADD ON COURSES**

Name of the course: Advanced Diploma in Statistical Computing and Data Analysis.

Name of the College: Vimala College, Thrissur-9

### 3. ADVANCED DIPLOMA COURSE

	ITEM	Module	Credit per module	Total credits
A	Theory	Module 1 –Unit-3	5	10
		Module -2-Unit 3	5	
B	Project/Field work Training		10	10
		Grand total of credits		20

#### 4. Detailed Syllabus:

##### A). Theory

##### Module 1 : Basic Statistical Methods and tabulation

**Unit 1.** Collection of data, classification, graphs and diagrams, measures of central tendency and dispersion. Correlation and regression: Karl Pearson's and rank correlation coefficients.

**Unit 2:** Probability: conditional probability, independence of events, random variables, pdf, cdf, Probability distributions: Binomial, Poisson and Normal.

**Unit 3:** Estimation of parameters: Point estimation and interval estimation, Tests of hypothesis for mean, difference of means, chi-square tests. Tests of chi-square for goodness of fit and independence of attributes. Design of experiments using CRD, RBD, LSD.

##### Module 2: Data Analysis using software packages:

**Unit 1:** Fundamentals of computers. Elements of MS-EXCEL. Creation of worksheets. Editing, formatting, and saving. Data analysis using Excel-graphs and diagrams, summary statistics, correlation, regression, tests of hypothesis and Internet.

**Unit2.** Data analysis using SPSS- creation of data file, editing, saving, summary statistics, two-way tables, correlation, tests of hypothesis.

### Unit3.Introduction to SAS, Minitab, MATLAB, Mathematica, Maple, MATHCAD

#### B) Practical

**Module 1:** Practical problems of Module I to be done with the help of personal computers.

**Module 2:** Practical problems of Module II to be done with the help of personal computers.

#### 6. Scheme of evaluation:

There will be 2 papers, 1 each for theory and practical and a comprehensive viva voce for project/ field work based on the report. Total marks for each module is 100. Grading can be done in the following way.

Range of marks for Each paper	Grade	Weightage (W)
90%and above	Outstanding (A+)	10
80-90	Excellent (A)	9
70-80	Very Good (B)	8
60-70	Good(G)	7
50-60	Satisfactory(D)	6
Below 50%	Failed (F)	0

Overall performance at the end of the course shall be indicated by Grade Point Average (GPA). It is calculated as follows:

$GPA = (W_1C_1 + W_2C_2 + \dots)$  divided by  $(C_1 + C_2 + C_3 + \dots)$   $W_1$  refers to the grade weightage obtained for each paper and  $C_1$  refers to the credit assigned for that module.

#### Overall Performance

A GRADE - if  $GPA \geq 8$

B GRADE - if  $7 \leq GPA < 8$

C GRADE. - if  $6 \leq GPA < 7$