Re-Accredited 'B++' 2.86 CGPA by NAAC
VEER NARMAD SOUTH GUJARAT UNIVERSITY
University Campus, Udhna-Magdalla Road, SURAT - 395 007, Gujarat, India.
વીર નર્મદ દક્ષિણ ગુજરાત યુનિવર્સિટી
યુનિવર્સિટી કેમ્પસ, ઉધના-મગદલ્લા રોડ, સુરત - ૩૯૫ ૦૦૭, ગુજરાત, ભારત.
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–: પરિપત્ર :–

યુનિવર્સિટી સંલગ્ન વિજ્ઞાન વિદ્યાશાખા હેઠળની તમામ કોલેજોનાં આચાર્યશ્રીઓને જણાવવાનું કે, NEP-2020 અંતર્ગત પ્રથમ વર્ષ બાદ Exit થનાર વિદ્યાર્થીઓને સર્ટિફિકેટ એનાયત કરવા અને દ્વિતીય વર્ષ બાદ Exit થનાર વિદ્યાર્થીઓને ડિપ્લોમાં એનાયત કરવા સંદર્ભે ૪ ક્રેડિટના વોકેશનલ Exit Course તૈયાર કરવા સંદર્ભે આંકડાશાસ્ત્ર વિષયની અભ્યાસ સમિતિની તા.૨૭/૦૩/૨૦૨૫ની સભાના ઠરાવ ક્રમાંકઃ૦૩ થી નીચે મુજબ કરેલ ભલામણ સ્વીકારી વિજ્ઞાન વિદ્યાશાખાની તા.૩૦/૦૪/૨૦૨૫ની સભાનાં ઠરાવ ક્રમાંકઃ ૬ થી કરેલ ભલામણ સ્વીકારી એકેડેમિક કાઉન્સિલની તા.૫/૫/૨૦૨૫ ની સભાનાં ઠરાવ ક્રમાંકઃ ૭૩ થી મંજુર કરેલ છે. જેનો અમલ કરવા આથી જાણ કરવામાં આવે છે.

બિડાણઃ ઉપર મુજબ

ક્રમાંકઃઓથો./પરિપત્ર/સિલેબસ/૧૧૯૪૮/૨૦૨૫
તા.૦૨–૦૬–૨૦૨૫

કુલસચિવશ્રી

પ્રતિ,
૧) યુનિવર્સિટી સંલગ્ન વિજ્ઞાન વિદ્યાશાખા હેઠળની તમામ કોલેજોનાં આચાર્યશ્રીઓ.
.....આપશ્રીની કોલેજના સંબંધિત શિક્ષકોને જાણ કરી અમલ કરવા સા.રૂ.
૨) ડીનશ્રી, વિજ્ઞાન વિદ્યાશાખા.
૩) પરીક્ષા નિયામકશ્રી, પરીક્ષા વિભાગ, વીર નર્મદ દ. ગુ. યુનિવર્સિટી, સુરત.
.....તરફ જાણ તેમજ અમલ સા.રૂ.

Academic Council 05-05-2025
Item No. 73 Encl. 62

VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT

VOCATIONAL EXIT COURSE
IN
STATISTICS

B.A./B.Com./B.Sc. Sem -I and Sem-II

Template For Syllabus

VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT

Programme Name :- BSc / B.Com/ B.A. (Statistics)

As Per NEP 2020

About programme :- First and Second Year (Vocational Course)

Teaching & Evaluation Scheme:- As per NEP 2020

Course Category	Course Code	Course Title	Mark sheet title in English	Level of course	Teaching Hours /week (TH)	Teaching Hours /week (PR)	Exam Duration (TH)	Exam Duration (PR)	Credit (TH)	Credit (PR)	Internal Marks (TH)	Internal Marks (PR)	External Marks (TH)	External Marks (PR)	Total (TH+PR)
Vocational course for certificate after completion of first year		Statistical-Data Analysis Using Software Packages	Statistical-Data Analysis Using Software Packages	300	1	6	0.5 (30 minutes)	1.5 (120 minutes)	1	3	15	35	15	35	100
Vocational course for Diploma Degree after completion of second year		Introduction to Statistical Softwares	Introduction to Statistical Softwares	300	2	4	1	1	2	2	25	25	25	25	100
Vocational course for Diploma Degree after completion of second year		Industrial Statistics	Industrial Statistics	300	4	-	2	-	4	-	50	-	50	-	100

Course wise Details :-

VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT

Vocational Course for Certificate

After Completion of First year BSc / B.Com/ B.A. (Statistics)

Statistical-Data Analysis Using Microsoft Excel (1 credit Th+3 credits practical)

As per NEP 2020

To be implemented from the Academic year 2025-26

Course code	VOC-ST-FY01	Weightage	Marks
Course title	Statistical-Data Analysis Using Microsoft Excel		
credit	4 credit **(1 Th + 3 practical)**		
Teaching per week	1 hour **(Theory)**		
Effective from	2025-2026		
Purpose of course	The purpose of the course is to prepare students for professional pursuits.		
Objective of course	The main objective of this course is to reinforce and expand students' understanding of core concepts in statistics and probability. It aims to develop their analytical and problem-solving skills by integrating theoretical knowledge with practical applications by using Microsoft Excel.		
urse outcomes	**CO1:** Understand and manage data using Microsoft Excel. **CO2:** Create and interpret various graphical representations. **CO3:** Generate detailed descriptive statistics and automated reports. **CO4:** Perform correlation, regression analysis, and curve fitting. **CO5:** Apply statistical inference, including hypothesis testing and confidence intervals.		
Course content	Unit-I: Introduction to Basic Statistics • Definition and Scope of Statistics • Concepts of Data; Variables and Attributes • Types of Data: Quantitative and Qualitative data, Discrete and Continuous data variables • Different Types of Scales: For Attributes: Nominal, Ordinal For Variables: Interval, Ratio • Methods of Data Collection (Primary and Secondary) ➢ Tabulation of Data • Frequency Distribution (Discrete, Continuous and Cumulative) Bivariate Frequency Distribution (Discrete and Continuous) • Measures of Central Tendency and Dispersion • Concept of Correlation and Regression	20%	10
References	9. Introduction to Statistics, S. D. Sharma 10. Moore, D.S. and McCabe, G.P. and Craig, B.A. (2014): Introduction to the practice of Statistics, W.H. Freeman 11. "Excel for Beginners" M.L. Humphrey 12. "Microsoft Excel Formulas and Functions (Office 2021 and Microsoft 365)" by Paul McFedries, Pearson 13. "Statistical Methods" by S.P. Gupta (published by Sultan Chand & Sons) 14. "Excel Statistics: A Quick Guide", By Neil J. Salkind		

VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT

Vocational Course for Certificate

After Completion of First year BSc / B.Com/ B.A. (Statistics)

Statistical-Data Analysis Using Software Packages (1 credit Th+3 credits practical)

As per NEP 2020

To be implemented from the Academic year 2025-26

Course code	VOC-ST-FY01	Weightage	Marks
Course title	Statistical-Data Analysis Using Software Packages (practical)		
credit	3**(Practical)**		
Teaching per week	6 hours**(Practical)**		
Effective from	2025-2026		
List of practical	UNIT-I: • Learn how to load data • Plot a graph viz. histogram (equal class intervals and unequal class intervals) • Box plot • Stem-leaf • Frequency polygon • Pie chart • Ogives with graphical summaries of data.	20%	10
	UNIT-II: • Finding measures of descriptive statistics using Microsoft Excel • Correlation and lines of regression. • Fitting of polynomials and exponential curves • Application problems based on fitting of suitable distribution • Normal probability plot.	20%	10
	UNIT-III: • Simple analysis and create and manage statistical analysis projects • Random number generation and sampling procedures	40%	20

VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT

Vocational Course for Diploma Degree

After Completion of Second year BSc / B.Com/B.A. (Statistics)

INTRODUCTION TO ADVANCED EXCEL FOR STATISTICAL ANALYSIS (2 credits Th+2 credits practical)

As per NEP 2020

To be implemented from the Academic year 2025-26

Course code	VOC-ST-SY01	Weightage	Marks
Course title	INTRODUCTION TO ADVANCED EXCEL FOR STATISTICAL ANALYSIS		
credit	4 credit **(2 Theory + 2 practical)**		
Teaching per week	2 hours **(Theory)**		
Effective from	2025-2026		
Purpose of course	The purpose of the course introduces students to Advanced Excel. So, that they can use it for statistical analysis work.		
Objective of course	The main objective of this course is to provide Advanced knowledge of Excel and its use to analyse the data using different statistical techniques.		
Course outcomes	**CO1:** Understand the concept of Advanced Excel. **CO2:** Understand about how to analyse data using Advanced Excel. **CO3:** Understand application of statistical techniques using Advanced Excel. **CO4:** Apply the knowledge of Advanced Excel for the research work and analysis work.		
Course content	Unit-I: Introduction to Basic Statistics • Definition and Scope of Statistics • Concepts of Data; Variables and Attributes • Types of Data: Quantitative and Qualitative data, Discrete and Continuous data variables • Different Types of Scales: For Attributes: Nominal, Ordinal For Variables: Interval, Ratio • Methods of Data Collection (Primary and Secondary)	25%	12
	Unit-II: Tabulation of Data • Frequency Distribution (Discrete, Continuous and Cumulative) Bivariate Frequency Distribution (Discrete and Continuous) • Measures of Central Tendency and Dispersion • Concepts of Testing of Hypothesis • Concept of Correlation and Regression	25%	13
References	1. Introduction to Statistics, S. D. Sharma 2. Moore, D.S. and McCabe, G.P. and Craig, B.A. (2014): Introduction to the practice of Statistics, W.H. Freeman 3. "Excel for Beginners" M.L. Humphrey 4. "Microsoft Excel Formulas and Functions (Office 2021 and Microsoft 365)" by Paul McFedries, Pearson 5. "Statistical Methods" by S.P. Gupta (published by Sultan Chand & Sons) 6. "Business Statistics" by J.K. Sharma (published by Pearson India) 7. "Excel Statistics: A Quick Guide", By Neil J. Salkind **8.** "Statistical Data Analysis using MS-Excel" by B. J. Kore		

VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT

Vocational Course for Diploma Degree

After Completion of Second year BSc / B.Com/ B.A. (Statistics)

INTRODUCTION TO STATISTICAL SOFTWARES (2 credits Th+2 credits practical)

As per NEP 2020

To be implemented from the Academic year 2025-26

Course code	VOC-ST-SY01	Weightage	Marks
Course title	INTRODUCTION TO STATISTICAL SOFTWARES **(practical)**		
credit	2 **(Practical)**		
Teaching per week	4 hours **(Practical)**		
Effective from	2025-2026		
List of practical	**Unit-I Module 1: Introduction to Excel (Basics)** • Overview of Excel Interface, Workbook, Worksheets, and Cell Basics • Data Entry, Formatting, and Editing • Basic Arithmetic Operations in Excel • Basic Functions: SUM, AVERAGE, MIN, MAX, COUNT, COUNTA • Logical Functions: IF, AND, OR, NOT • Text Functions: CONCATENATE, LEFT, RIGHT, MID, LEN, TRIM • Date & Time Functions: TODAY, NOW, DATEDIF. • Sorting and Filtering Data, Find & Replace, Remove Duplicates • Data Validation & Drop-down Lists • Text-to-Columns and Flash Fill	25%	13
	Unit-II Module2: Working with Measures of Central Tendency • Understanding Mean, Median, Mode • Using AVERAGE, MEDIAN, and MODE Functions in Excel • Creating Basic Charts: Bar, Line, Pie Charts • Advanced Charts: Histogram, Scatter Plot, Combo Chart. • Creating & Customizing Pivot Tables • Grouping & Filtering Data in Pivot Tables • Calculated Fields & Value Summarization • Creating Pivot Charts for Data Analysis. • Using STDEV.P, STDEV.S, VAR.P, VAR.S for Variability Analysis • Regression Analysis & Trendlines	25%	12

VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT

Vocational Course for Diploma Degree

After Completion of Second year BSc / B.Com/ B.A. (Statistics)

INDUSTRIAL STATISTICS(4 credit)

As per NEP 2020

To be implemented from the Academic year 2025-26

Course code	VOC-ST-SY02	Weightage	Marks
Course title	INDUSTRIAL STATISTICS		
credit	4		
Teaching per week	4 hours		
Effective from	2025-2026		
Purpose of course	The purpose of the course is to make students aware about how to control quality of the product using different statistical charts.		
Objective of course	The main objective of this course is to provide fundamental knowledge of techniques of quality control, cusum chart and total quality management.		
Course tcomes	**CO1:** Understand the basic concept of Quality and statistical techniques to improve it. **CO2:** Understand the basic concept of Cusum chat. **CO3:** Understand the basic concept of TQM. **CO4:** Understand application of charts to control quality of the product. **CO5:** Apply the knowledge of charts on real life examples.		
Course content	**Unit-I: Introduction of Statistical Quality Control** Statistical process control • Introduction • Measure of location and variability • Process of Control Charts for variables & attributes • Process of control limits • Out of control criteria Process and measurement system capability analysis	30%	15
	Unit-II: Cumulative sum chart Statistical product control • Introduction • Standard plans for attributes • Plan for acceptance sampling by measurement	30%	15
	Unit-III: Total Quality Management • The meaning of Quality & Quality improvement • Meaning and Important concepts • Importance of Quality Management • Total quality management models • Strategic quality planning and total quality management • The cost of quality • Productivity	20%	10
	Unit-IV: Quality Management System • Six Sigma and Quality management • Kaizen process • ISO 9001	20%	10
References	Hopper A.G:"Basic Statistical Quality Control", McGraw Hill, London. Gupta R.C.:"Statistical Quality Control", Khanna publishers, New Delhi. Ryan T.P.:"Statistical Methods for Quality Improvement"; John Wiley& Sons. Omachonu V.K. and Ross J.E.:"Principles of Total Quality"; S.Chand& Co., New Delhi.		