Krishna University Machilipatnam

Board of Studies Meeting in BBA Analytics

Date:11-06-2025

Agenda:

- Adaptation of B.B.A. Analytics syllabus for the 3
- 5th,7thand8thSemesters under single major program for the academic year 2024-2025.

The Board of studies for B.B.A. Analytics Program is conducted on 10-06-2025 at Nalanda Degree Collegee, Vijayawada with following members:

S. No	Position	Name	Signature with Date
1	Chairman	Sri G Narayana Rao Lecturer in Commerce, Dr. LHR Govt. Degree College, Mylavaram NTR Dist. Cell: 9440490959, Email ID: glatharao.999@gmail.com	24/6/25
2	Member	Mr. D. Vasu Dept. of BBA Business Analytics, P.B. Siddhartha College of Arts and Science, Vijayawada. Cell: 8885869995, Email: vasudammati1@gmail.com	24/6/25
3	Member	Mr. NayapamuHemanth Kumar Department of MBA, KBN College, Vijayawada, Cell: 9100864160, Email: hemathkumar.nayapamu@kbncollege.ac.in	
4	Member	Ms. Y. Srilakshmi Department of MBA, Nalanda Degree College, Vijayawada. Cell: 9948024529, Email: srilakshmiy@nalanda.edu.in	
5	Industry Expert	Mr. Ravi TejaTallam Industrialist, General Manager, Trigyn Technologies Ltd., Vijayawada. Cell: 7680822227, Email: ravi.t@trigyn.com&ravitejatallam@yahoo.com	
6	University Nominee	Dr. M. Sravani Asst. Professor, Dept. of Business Management, Krishna University, Cell: 9966361117, Email: sravani_me21@yahoo.co.in	
7	Student Member -1	B. Venkatesh Student, III BBA-BA, P.B. Siddhartha College of Arts and Science,	
8	Student Member -2	T.Sathish Student, Nalanda Degree College, Vijayawada.	

Resolutions:

The members of the Board of Studies for B.B.A. Analytics Programme of Krishna university held its meeting at Kakaraparti Bhava Narayana College, Vijayawada and made the following resolutions unanimously:

1. It is resolved to adopt and implement the syllabus for the core subjects in the 5th, 7th and 8th semesters (Major5,6,7,8 and Major9,10,11) as appended here under from the academic year 2024 – 2025.

2. It is resolved to adopt and implement the 4 minor subjects syllabus in the 5th, 7th and 8th Semesters (Minor 5 [illegible]) in (i.e. Digital Marketing, Computer Science, Logistics and Supply chain management and Data Science) as appended here under from the academic year 2024 – 2025.

3. The Board of Studies unanimously resolved to have 30 Marks allocated for the Continuous Internal Assessment in the college and 70 Marks for Semester End Examination to be held by Krishna University, Machilipatnam.

4. The Board of Studies unanimously resolved the Blue-Print/Question paper structure as held down here under. (For Both Major and Minor subjects).

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1. 3. 5. Y. Srilakshmi

2. Dr. V.N. 4.

Blue – Print / Question Paper Structure
Semester End Examination

Max. Marks: 70 **Max. Time: 3 Hrs.**

SECTION A (5X4 = 20 MARKS)

Answer any Five Questions of the following. Each question carries 4 Marks.

1. Contents of Unit – I
2. Contents of Unit – II
3. Contents of Unit – III
4. Contents of Unit – IV
5. Contents of Unit – V
6. Contents from any Unit
7. Contents from any Unit
8. Contents from any Unit

SECTION B (5X10 = 50 MARKS)

Answer any Five Questions of the following. Each question carries 10 Marks.

9. (a) Contents of Unit – I

(Or)

(b) Contents of Unit – I

10. (a) Contents of Unit – II

(Or)

(b) Contents of Unit – II

11. (a) Contents of Unit – III

(Or)

(b) Contents of Unit – III

12. (a) Contents of Unit – IV

(Or)

(b) Contents of Unit – IV

13. (a) Contents of Unit – V

(Or)

(b) Contents of Unit – V

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ANDHRA PRADESH STATE COUNCIL OF HIGHER EDUCATION
Programme: B.B.A.Business Analytics Honours(Major)
w.e.f. AY 2023-24COURSESTRUCTURE

Semester	Course Number	Course Name	No of Hrs/Week	No of Credits
Semester- I	1	Fundamentals of Commerce	4	4
	2	Business Organization	4	4
Semester-II	3	Principles of Management	4	4
	4	Quantitative methods for managers	4	4
Semester-III	5	Fundamentals of Business Analytics	4	4
	6	Database Management	4	4
	7	Accounting for managers	4	4
	8	Human Resource Management	4	4
Semester-IV	9	Marketing Management	4	4
	10	Data mining & Warehousing	4	4
	11	Financial Management	4	4
Semester- V	12	Sales and Distribution Management	4	4
	13	Statistical Quality control and Six Sigma	4	4
	14	Data Analytics with Python	4	4
	15	Business Research Methods	4	4
Semester-VI	Internship			
Semester-VII	16	E-Business (or) Brand Management	4	4
	17	Data visualization (or) Export & import Management	4	4
	18	Performance Management (or) Industrial Safety	4	4
	SEC			
	19			

	20			
Semester-VIII	21	Big data Analytics using R (or) Global Marketing	4	4
	22	Optimization Techniques (or) Training and Development	4	4
	23	Machine learning using Python (or) Business Statistics	4	4
	SEC			
	24			
	25			

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SEMESTER-V

Course:12-SALES AND DISTRIBUTION MANAGEMENT

Introduction to course:

The purpose of this paper is to acquaint the student with the concepts which are helpful in developing a sound sales and distribution policy and in organizing and managing sales force and marketing channels.

Course Objectives:

The aim is to prepare students to manage sales and channel teams for different types of selling, with the purpose of enhancing value based output and productivity.

Learning Outcomes:

At the end of the course, the student will be able to:

- Understand the concept of sales and distribution management and their interrelationship.
- Explain role and responsibility of sales personal and essential selling skills.
- Understand the concept and effect of sales organization and sales effort.
- Explain the skills and methods required for sales force management.
- Understand the Management of Marketing Channels.
- Explore the concept and theories of rural distribution.
- Explain the concept of retailing.
- Understand the process of marketing logistics.

UNIT–I:

Introduction:

Nature and Scope of Sales Management– Objectives and functions of Sales management– Evolution of the Sales Department– sales management cycle– personal selling process.

UNIT – II

Theories of Sales Management:

Objectives, Nature and Scope. Buyer- Seller Dyads, Theories of selling – AIDAS Theory, " Right set of circumstances" Theory, "Buying Formula" Theory, and Behavioral Equation, Theory of selling.

UNIT – III

Sales Organization:

Basic types of Sales Organization, sales quotas: Characteristics, types, difficulties in setting sales quotas. Sates territory: objectives, process, factors.

UNIT - IV

Distribution:

Design of Distribution Channel, Management of Channels, Managing Co-operation, Conflict and Competition, Vertical and Horizontal Marketing Systems. Wholesaling and Retailing: Importance, Types, Marketing Decisions for Wholesalers, Retailing: Importance, Types, and Retailer Marketing Decisions.

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UNIT - V

Physical Distribution:

Objectives, Order Processing, Warehousing Inventory, Transportation, Organizing for Physical Distribution, EDI and supply chain, Internet as a medium for order processing and Information

Refereed Text Books:

1. Tanner, J; HoneycuttED; Erffmeyer Robert C.; Sales management: Pearson Education, 2009

   Anderson, R. Professional Sales Management. Englewood Cliff, New Jersey, Prentice Hall

Inc., 1992.

2. Anderson, R. Professional Personal Selling. Englewood Cliff, New Jersey, Prentice Hall Inc., 1991.
3. Buskirk, R H and Stanton, W J. Management of Sales Force. Homewood Illonois, Richard D Irwin, 1983.
4. Dalrymple, D J. Sales Management: Concepts and cases. New York, John Wiley, 1989.

   Johnson, E M etc. Sales Management: Concepts Practices and cases. New York, McGraw Hill, 1986.
5. Stanton, William J etc. Management of Sales Force. Chicago, Irwin,1988. Still, R.R.&Cundiff; Sales Management, Englewood Cliff, New Jersey, Printice Hall Inc.,

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MODEL PAPER
SALES AND DISTRIBUTION MANEGEMENT

Answer Any Four of the Following 5*4=20

1. sales management cycle
2. personalselling process
3. Buying formula theory
4. Salesterritory
5. sales quota
6 .wholesaler
7. supply chain
8. order processing

SECTION –B

Answer the following questions 5*10=50

9.Explian the nature and scope of sales management
(or)
10.Explain the objectives and functions of sales management

11.Explain the behavioral equation theory
(or)
12.Explain the AIDIAS theory (or)

13.Explain the different types of sales organization
(or)
14.Explainobjectives and process of sales territory

15.Explain about management channels
(or)
16.Write about vertical and horizontal marketing system

17.Explain about warehousing inventory
(or)
18.HowInternet as a medium for order processing

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SEMESTER-V

Course:13-STATISTICAL QUALITY CONTROL AND SIX SIGMA

Introduction to Course:

This course focuses on the application of statistics to quality control requirements found in organizational settings with an emphasis on the development and use of control charts, statistical process control (SPC) software and Six Sigma methodologies.

Course Objectives:

To equip the students with comprehensive understanding of statistical quality control and six sigma processes and methodologies used to improve quality of products and services produced in business organizing.

Course Outcomes:

After successful completion of this course, the students will be able to:

1. Apply basic quality tools in manufacturing operations.
2. Calculate process capability and gage capability in a manufacturing process.
3. Describe the DMAIC processes (define measure, analyze, improve, and control).
4. Demonstrate the ability to use the methods of statistical process control.
5. Demonstrate the ability to design, use, and interpret control charts for variables.
6. Demonstrate the ability to design, use, and interpret control charts for attributes.
7. Perform analysis of process capability and measurement system capability.
8. Understand and interpret the basic concepts and usage of Lean Six Sig

Unit-I:

The Meaning of Quality and Quality Improvement–Importance of Quality in Industry–Statistical Quality Control –Introduction to control charts, process and product control, control charts, 3 control limits, tools for statistical quality control, creating control charts for variable.

Unit-II:

Construction of control charts for attributes p-chart for fraction defective, d-chart for number of defective, interpretation of p-chart. Control charts for number of defects per unit:limits for c-chart, c-chart for variable sample size or u-chart, application c-chart and Natural tolerance limits and specification limits.

Unit-III:

Acceptance sampling by attributes- acceptance quality level, lot tolerance proportion or percent defective, process average fraction defective, consumers risk, producers risk,

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rectifying inspection plans, average outgoing quality limit, O.C curve, single sampling plan, double sampling plan and sequential sampling plan.

Unit-IV:

Six sigma- Basics of six sigma, traditional approach of six sigma, break through approachto six sigma-measure, variation, cost of quality, six sigma measurements, Analyze,improve control: challenges in implementing six sigma.

Unit-V:

Elements of six sigma business score card: Leadership and profitability, Management and improvement, Employees and innovation, Purchasing and supplier management, Operational execution, Sales and distribution, Service and growth, Six sigma business score card and measurements, Business performance index, Corporate DPU and DPMO, Corporate sigma level.

Reference Text Books:

1. Aswathapppa&Bhat (2013), Production and Operations Management, New Delhi:Himalaya Publishing House.
2. Everett E. Adam, Jr. and Ronals J. E. Ebert (2012), Production and Operations Management: Concepts, Models and Behavior, New Delhi: Prentice Hall of India.
3. S.N. Chary (2011), Production and Operations Management, New Delhi: Tata McGraw Hill Publishing Co. Ltd.
4. Gupta and Kapoor ,Fundamentals of applied statistics, Sultan and Chand,2017
5. Pathak and F. Resh ,Demographic Methods, Sultan and Chand,2017
6. G. Harver, Lean Six Sigma For Beginners, A Quick-Start Beginner's Guide To Lean Six Sigma, Kindle Edition.
7. Daniel J. Zrymiak , GovindarajanRamu , Roderick A. Munro, The Certified Six Sigma Green Belt Handbook, 2nd Edition (With 2 CD-ROMs) Hardcover – 2015
8. Thomas Pyzdek , Paul Keller, The Six Sigma Handbook Hardcover – 30 Aug 2010

MODEL PAPER
STATISTICAL QUALITY CONTROL AND SIX SIGMA

Answer Any Four of the Following 5*4=20

1. Explain the meaning of quality
2. Explain statistical quality control
3. Explain p-chart for fraction defective
4. Explain interpretation of p-chart
5. Explain acceptance quality level
6.Explain consumer's risk
7. Explain basics of 6 sigma
8.Explain employee management

SECTION –B

Answer the following questions 5*10=50

9.Write about importance of quality in industry
(or)
10.Explain process and product control and control units

11.Explai natural tolerance limits and specifications
(or)
12.Explain control charts for number of defects per unit limits for C-chart for variable sample size (or)

13.Explainaverage outgoing quality limit and OC-curve
(or)
14.Explain double sampling plan and sequential sampling plan

15.Explain break through approach to six-sigma measure ,cost of quality
(or)
16.Explain analyze improve control challenges in implementing six-sigma

17. Explain operational execution sales and distribution
(or)
18.Explain corporate DPU and DPMO

SEMESTER-V

Course:14-DATA ANALYTICS WITH PYTHON

Introduction to Course:

This course is designed to teach students how to analyze different types of data using Python. Students will learn how to prepare data for analysis, perform simple statistical analysis, create meaningful data visualizations and predict future trends from data.

Course Outcomes:-

On successful completion of the course, students will be able to:

1. Understanding basics of python for performing data analysis
2. Understanding the data, performing preprocessing, processing and datavisualization to get insights from data.
3. Use different python packages for mathematical, scientific applications and forweb data analysis.
4. Develop the model for data analysis and evaluate the model performance.

UNIT – I

Introduction to Python, Installing Python. How a Program Works, Using Python, Program Development Cycle, Input, Processing, and Output, Displaying Output with the Print Function, Comments, Variables, Reading Input from the Keyboard, Performing Calculations, Operators. Type conversions, Expressions, More about Data Output. Decision Structures and Boolean Logic: if, if-else, if--else Statements, Nested Decision Structures, Comparing Strings, Logical Operators, Boolean Variables. Repetition Structures: Introduction, while loop, for loop, Calculating a Running Total, Input Validation Loops, Nested Loops. Data types and Expressions: Strings, Assignment and Comments, Numeric Data Types and Character Sets, Expressions, Functions and Modules.

UNIT – II

Control Statements: Definite Iteration, Formatting Text for Output, Selection, Conditional Iteration. File and Exceptions: Introduction to File Input and Output, Using Loops to Process Files, Processing Records, Exceptions. Functions: Introduction, Defining and Calling a Void Function, Designing a Program to Use Functions, Local Variables, Passing Arguments to Functions, Global Variables and Global Constants, Value-Returning Functions-Generating Random Numbers, The math Module, Storing Functions in Modules.

UNIT – III

Strings and Text Files: Accessing Characters and Substrings in a String, Strings and Number System, String Methods, Basic String Operations, String Slicing, Testing, Searching, and Manipulating Strings. Text Files, Data Encryption, Lists, Introduction to Lists, List slicing,

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Finding Items in Lists with the in Operator, List Methods and Useful Built-in Functions, Copying Lists, Processing Lists, Two-Dimensional Lists, Tuples Sequences, Tuples. Dictionaries and Sets: Dictionaries, Sets, Serializing Objects. Recursion: Introduction, Problem Solving with Recursion, Examples of Recursive Algorithms.

UNIT - IV

Design with Classes: Classes and Objects, Classes and Functions, Classes and Methods, Working with Instances, Inheritance and Polymorphism. Object-Oriented Programming: Procedural and Object-Oriented Programming, Classes, techniques for Designing Classes.

UNIT - V

Graphical User Interfaces: Behavior of terminal based programs and GUI-based programs, Coding simple GUI-based programs, other useful GUI resources. GUI Programming: Graphical User Interfaces, Using the tkinter Module, Display text with Label Widgets, Organizing Widgets with Frames, Button Widgets and Info Dialog Boxes, Getting Input with Entry Widget, Using Labels as Output Fields, Radio Buttons, Check Buttons. Simple Graphics and Image Processing: Overview of Turtle Graphics, Two dimensional Shapes, Colors and RBG System, Image Processing

Reference Text Books:

1. Introducing Python, Lubanovic, Bill, O'Reilly
2. Mastering Object-Oriented Python, Lott, Steven F, Packt Publishing, latest edition
3. Python pocket reference, Lutz, Mark, O'Reilly, latest edition

MODEL PAPER
DATA ANALYTICS WITH PYTHON

Answer Any Four of the Following 5*4=20

1. Explain about type conversions
2. Explain about input validation groups
3Write about global variables and global constants
4. Explain about storing functions in modules
5. Discuss about characters and substrings in a string
6.Explain problem solving with recursion
7. Explain working with instances
8.Wite about display text with lable widgets

SECTION –B

Answer the following questions

5*10=50

9. Explain briefly about installing python. How a program works
(or)
10.Write about program development cycle

11.Write about using loops to process files
(or)
12.Write about passing arguments to functions
(or)

13. Write about finding items in lists with the operator
(or)
14.Explainabout serializing objects

15.Explaindifference between procedure and object oriented programming
(or)
16.Explainabout techniques for designing classes

17. Write about behavior of terminal based programs and GUI- based programs
(or)
18.Explain colors and RBG system, image processing

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SEMESTER-V

COURSE NO: 15 BUSINESS RESEARCH METHODS

Introduction to Course:

Research methodology is the systematic and scientific method of how to review and research a topic. It starts with identification of the problem and continues with sample design, data collection, analysis and report. It is extensively used to find a solution to a problem and enhance knowledge. Continuous growth is one of the key challenges for business, which needs innovative ideas and solutions to stagnation in growth. Research is a valuable tool for businesses to identify potential avenues for growth and solutions to problems. Understanding the methodology to be adopted when researching is, therefore very crucial for businesses.

Course Objectives:

1. To enable the students to get familiarize with the concepts of Research Methodology
2. To acquaint the students with the techniques of Research Methodology which are applicable to business arena.

Course Learning Outcomes:

At the end of the course, the student will

1. Be able to interpret, define and formulate research problems and, formulate hypotheses that can be tested
2. Get exposure to critical analysis, problem solving and research skills
3. Understand the rationale for using a particular qualitative and quantitative research method
4. Understand and apply a range of methods and to be able to decide on appropriate research designs and methods to investigate their chosen research problems

UNIT-I

Nature and Scope of Research Methodology:

Concept of BRM, Nature of BRM, Scope BRM, Need and Role of Business Research, Characteristic of Research, Types of Research, the Research Process: An overview.

UNIT-II

Research Design:

Concept of Research Design,Types of Research Design,Including Exploratory,Descriptive and Experimental,Research Design Process.

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Unit III

Questionnaire Design and Schedule and Sampling Theory:

Concept of Questionnaire and Schedule, Principles of Designing Questionnaire and Schedule,Limitations of Questionnaire, Reliability and Validity of Questionnaire - Concept,Need and importance of Sampling,Types of Sampling Methods,Sampling and Non-Sampling Errors,Sample Design, Determinants of Sample Size.

UNIT-IV:

Data Analysis Techniques:

Descriptive statistics :Tabulation, Processing of Data and presentation of data - Basic Aspects of Statistical Inference Theory and Hypothesis Testing - Parametric tests (z-test, t-test) and Non-parametric test(Chi-square test).

UNIT-V

Report Writing:

Pre-Writing considerations, Research report components, Types of Research Reports, Common Problems encountered when preparing the Research Report, Mechanics of Report Writing, Presenting research report.

Reference Text Books

1. Kothari, C.R. (2012), Research Methodology – Methods and Techniques, New Delhi: New Age International Publishers.
2. Boyd, H. W., Westfall, R. L., &Stasch, S. F. (2010), Marketing Research: text and cases, New Delhi: All India Travel Book Sellers.
3. Bryman, A. (2010), Social Research Methods, New Delhi: Oxford University Press.
4. Krishnaswami, O.R. (2011), Methodology of Research in Social Sciences, Mumbai: Himalaya

Publishing House.

MODEL PAPER
BUSINESS RESEARCH METHODS

Answer Any Four of the Following 5*4=20

1. Concept of BRM
2. Research process
3. Research design
4. Sample design
5. Non-sampling errors
6.Chi-square test
7. Rersearch report
8.Pre-writing considerarions

SECTION –B

Answer the following questions 5*10=50

9.What are the characteristics of research
(or)
10.An overview of the research process

11.Explain various types of research designs
(or)
12.Explain the concept of research design

13.Explain the principles of designing questionnaire
(or)
14.What are the typesof sampling methods

15.Explain the processing of data land presentation of data
(or)
16.What are the aspects of statistical inference

17. What are the main components of a research report
(or)
18.Explain the common problems in preparing research report

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Krishna University Machilipatnam

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- 5th,7thand8thSemesters under single major program for the academic year 2024-2025.

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S. No	Position	Name	Signature with Date
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2	Member	Mr. D. Vasu Dept. of BBA Business Analytics, P.B. Siddhartha College of Arts and Science, Vijayawada. Cell: 8885869995, Email: vasudammati1@gmail.com	24/6/25
3	Member	Mr. NayapamuHemanth Kumar Department of MBA, KBN College, Vijayawada, Cell: 9100864160, Email: hemathkumar.nayapamu@kbncollege.ac.in	
4	Member	Ms. Y. Srilakshmi Department of MBA, Nalanda Degree College, Vijayawada. Cell: 9948024529, Email: srilakshmiy@nalanda.edu.in	
5	Industry Expert	Mr. Ravi TejaTallam Industrialist, General Manager, Trigyn Technologies Ltd., Vijayawada. Cell: 7680822227, Email: ravi.t@trigyn.com&ravitejatallam@yahoo.com	
6	University Nominee	Dr. M. Sravani Asst. Professor, Dept. of Business Management, Krishna University, Cell: 9966361117, Email: sravani_me21@yahoo.co.in	
7	Student Member -1	B. Venkatesh Student, III BBA-BA, P.B. Siddhartha College of Arts and Science,	
8	Student Member -2	T.Sathish Student, Nalanda Degree College, Vijayawada.	

Resolutions:

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Blue – Print / Question Paper Structure
Semester End Examination

Max. Marks: 70 **Max. Time: 3 Hrs.**

SECTION A (5X4 = 20 MARKS)

Answer any Five Questions of the following. Each question carries 4 Marks.

1. Contents of Unit – I
2. Contents of Unit – II
3. Contents of Unit – III
4. Contents of Unit – IV
5. Contents of Unit – V
6. Contents from any Unit
7. Contents from any Unit
8. Contents from any Unit

SECTION B (5X10 = 50 MARKS)

Answer any Five Questions of the following. Each question carries 10 Marks.

9. (a) Contents of Unit – I

(Or)

(b) Contents of Unit – I

10. (a) Contents of Unit – II

(Or)

(b) Contents of Unit – II

11. (a) Contents of Unit – III

(Or)

(b) Contents of Unit – III

12. (a) Contents of Unit – IV

(Or)

(b) Contents of Unit – IV

13. (a) Contents of Unit – V

(Or)

(b) Contents of Unit – V

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ANDHRA PRADESH STATE COUNCIL OF HIGHER EDUCATION

Programme: B.B.A.Business Analytics Honours(Major)

w.e.f. AY 2023-24COURSESTRUCTURE

Semester	Course Number	Course Name	No of Hrs/Week	No of Credits
Semester- I	1	Fundamentals of Commerce	4	4
	2	Business Organization	4	4
Semester-II	3	Principles of Management	4	4
	4	Quantitative methods for managers	4	4
Semester-III	5	Fundamentals of Business Analytics	4	4
	6	Database Management	4	4
	7	Accounting for managers	4	4
	8	Human Resource Management	4	4
Semester-IV	9	Marketing Management	4	4
	10	Data mining & Warehousing	4	4
	11	Financial Management	4	4
Semester- V	12	Sales and Distribution Management	4	4
	13	Statistical Quality control and Six Sigma	4	4
	14	Data Analytics with Python	4	4
	15	Business Research Methods	4	4
Semester-VI	Internship			
Semester-VII	16	E-Business (or) Brand Management	4	4
	17	Data visualization (or) Export & import Management	4	4
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	SEC			

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	20			
Semester-VIII	21	Big data Analytics using R (or) Global Marketing	4	4
	22	Optimization Techniques (or) Training and Development	4	4
	23	Machine learning using Python (or) Business Statistics	4	4
	SEC			
	24			
	25			

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SEMESTER-VII
Course:16-E-BUSINESS

LEARNING OUTCOMES:

By the completion of the course, the students are able to

1. Understand the mechanism of ecommerce
2. Equip specialization in website designing for e commerce
3. Enhance their skills in operational services of e commerce
4. Involve in activities of e commerce
5. Able to create awareness among the public one commerce activities

II. Syllabus Total 75hrs (Teaching 60, Training10 and others 05 including IE etc.)

UNIT-I

Introduction, Nature and Scope Introduction- Definition –importance- Nature and scope of e commerce-Advantages and limitations-Types of ecommerce – B2B, B2C, C2B, C2C,B2A,C2A-Framework e commerce

UNIT -II

Environmental and Technical support Aspects Technical Components- Internet and its component structure-Internet Vs Intranet, Vs Extranet and their differences-Website design- its structure-designing, developing and deploying the System

UNIT-III

Security and Legal Aspects Security environment –its preliminaries and precautions-protecting Web server with Firewalls Importance of Digital Signature –its components – Cyber Law-Relevant Provisions of IT Act2000.

UNIT-IV

Operational Services of e Commerce E retailing –features- E Services-Banking, Insurance, Travel, Auctions, Learning, Publication and Entertainment-Payment of utilities (Gas, Current Bill, Petrol Products)- On Line Shopping(Amazon, Flip kart, Snap deal etc.)

UNIT-V

E Payment System Types of e payment system- its features-Digital payments (Debit Card/Credit Cards, Internet Banking, Mobile wallets- Digital Apps (unified Payment Services-Phone Pay, Google Pay, HIM Etc.) Unstructured Supplementary Services Data (Bank Prepaid Card, Mobile banking)-

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III. Reference Text Books:

1. Bharat Bhaskar, Electronic Commerce Framework, Technology and Application. McGraw Hill Education.
2. Bajaj,D.Nag,E Commerce, Tata McGraw Hill Publication
3. Whitely David, E-Commerce, McGraw Hill
4. TN Chhabra, E Commerce, Dhanapat Rai & Co
5. Dave Chaffey, E Business and E Commerce Management, Pearson Publication
6. Dr.Pratikkumar Prajapati, Dr.M.Patel, E Commerce , Redshine Publication
7. Web resources suggested by the Teacher concerned and the College Librarian including reading material

IV Co-Curricular Activities (teacher participation: total 15 hours):

A. Mandatory

1. For Teachers:

Training of students by the teacher (using actual field material) in class room and field for a total of not less than 10 hours on the skills of listing out the local institutions who are involved in e-commerce activities, Identifying the institutions and their experience in operational activities of e-commerce, Case studies are to be analyzed of various problems raised at the time of e payment and operational activities of e commerce

2. For Students:

- Students shall individually undertake field study by contact website designers and studying various procedures adopted by the merchants and individuals and their experiences.
- Each student has to record and submit his/her observations in a handwritten Fieldwork/Project work Report not exceeding 10 pages to teacher in the given format.
- Max marks for Fieldwork/Project work Report: 05.
- Suggested Format for Fieldwork/Project work Report (not more than 10 pages): Titlepage, student details, contents, objective, step-wise work done, findings, conclusions and acknowledgements.
- Unit tests (IE).

B. Suggested Co-Curricular Activities

- Training of students by a related field expert.
- Assignments (including technical assignments like volume of business operated through
- e-commerce, Case Studies of problems raised at the time of e commerce
- Seminars, Conferences, discussions by inviting concerned institutions
- Conduct surveys on pros and cons of ecommerce
- Invited lectures and presentations on related topics by field experts.

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MODEL PAPER
E-BUSINESS

SECTION-A

Answer Any Four of the Following **5*4=20**

1. Internet components
2. Firewalls
3. Web sites
4. E-commerce frame work
5. IT Act 2000
6. E-retailing
7. Online shopping
8. Mobile banking

SECTION –B

Answer the following questions **5*10=50**

9. Explian the types of e-commerce

(OR)

10. Explain the advantages and disadvantages of E-commerce

11. Explain the differences between internet and extranet

(OR)

12. What is website designing and how it is developed

13. Explain the importance of digital signature

(OR)

14. Explain about cyber Law

15. What are the operational services of e-commerce

(OR)

16. Explain about payment utilities of e-commerce

17. Explain about types of e-payment system

(OR)

18. How e-payment s are supporting development of e-commerce

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SEMESTER-VII
Course:16-BRAND MANAGEMENT

I. Learning Outcomes:

1. Understand the nuances of product and product concepts, and understand key principles of branding.
2. Explain branding concepts and ideas in their own words
3. Understand and conduct the measurement of brand equity and brand performance
4. Formulate effective brand strategies for consumer and business goods and services.
5. Demonstrate the ability to conduct a critical brand audit, including recommendations for changes and improvement in brand management.

II.Syllabus: Total 75hrs (Teaching 60, Training10, Others 05 including IE etc.)

UNIT-I Introduction:

Brand: Meaning, Definition, Evolution of Brands, Different Types of Brands, Functions ofBrand to Consumer – Role of Brand – Advantages of Brand – Product Vs Brand – Brand LifeCycle – Branding: Meaning, Creation of Brands – Branding Decisions.

UNIT – II Brand Management:

Meaning and Definition – Strategic Brand Management Process: Meaning, Steps in Brand Management Process – Concept of Brand Equity: Customer Based Brand Equity, and Models of CBBE – Brand Building and its Implications – Brand Value Chain.

UNIT-III Branding Strategies:

Multiple Branding, Brand Extension, Co-branding Strategies, Brand Personality, Brand Image Building, Brand Repositioning, Brand Leveraging – Branding Impact on Buyers and Competitors – Methods for Measuring Brand Equity – Methods for Measuring Brand Performance – Brand Audit.

UNIT-IV Designing & Implementing Branding Strategies:

Brand Architecture: Meaning of Brand Architecture, The Brand-Product Matrix, Breadth of a Branding Strategy, Depth of a Branding Strategy. Brand Hierarchy: Meaning of Brand Hierarchy, Building Equity at Different Hierarchy Levels

UNIT-V Brand Rejuvenation and Re-launch strategies.

Brand Rejuvenation and Re-launch – Brand Development through Acquisition, Takes over and Merger – Brand Licensing and Franchising – Role of Packaging and Labeling .Brand Success Strategies – Brand Loyalty Programs – Building Global Brands – Branding Failures.

III. References

1. Kevin Lane Keller, Strategic brand Management, Person Education, New Delhi.
2. Jean Noel, Kapferer, Strategic brand Management, The Free Press, New York.
3. Paul Tmeporal, Branding in Asia, John Wiley & sons (P) Ltd., New York,
4. S.Ramesh Kumar, Managing Indian Brands, Vikas publishing House (P) Ltd., New Delhi.
5. Richard Elliott &Larry Perclu, Strategic Brand Management, Oxford Press.
6. Chernatony, Creating powerful brands, Elsevier Publication.

IV Co-Curricular Activities:

A. Mandatory (Student training by teacher in the related field skills:10 hrs):

1. For Teachers:

- Ask Students to choose any consumer durable products or FMCGs and identify their elements of positioning.
- Guide Students to do a mini project on product mix decisions of FMCG/Consumer durables/automobile companies in India.
- Discuss about PLCS of any consumer durable or FMCG product in class.
- Direct Students go to a supermarket and find the brand elements in various brands of soaps,
- Mobiles, consumer durables and other products.

2. For Students:

Students can pick a multiproduct company and as completely as possible analyze its brand portfolio and brand extensions?

- Consider some groups like Tata's, Birla's, Infosys etc – what is their branding strategy
- Students are supposed to assess the product life cycle and appraise alternative approaches to
- Students can select any two popular brands and identify and examine the criteria for successin the luxury brand industry.
- Students form brand management teams and conduct a brand audit. Every team must study

C. Suggested co -curricular activities

- Training of students by related experts
- Assignments on brand equity techniques and tools
- Seminars, conferences, discussions by inviting concerned institutions
- Guest lectures.

MODEL PAPER
BRAND MANAGEMENT

SECTION –A

Answer Any Four of the Following **5*4=20**

1. Role of brand
2. Private brand
3. Brand value chain
4. Co-branding
5. Brand audit
6. Breadth of branding
7. Brand franchising
8. Brand failures

SECTION –B

Answer the following questions **5*10=50**

9. Explain the different types of brands in detail

(OR)

10. Describe the brand life cycle
11. Explain strategic brand management process

(OR)

12. Describe Brand Building and its implications

(OR)

13. Describe Brand extensions and co-branding strategies

(OR)

14. Explain Brand re-positioning and brand leveraging
15. Describe the concept of Brand Architecture

(OR)

16. Explain both Brand Equity and Brand Hierarchy
17. Explain brand merger and takeover

(OR)

18. Describe the role of packaging and labeling in brand management

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SEMESTER-VII
Course:18-PERFORMANCE MANAGEMENT

I. COURSE LEARNING OUTCOMES

1. Develop an understanding of the principles behind performance measurement and management. Develop a working knowledge of how to effectively apply performance assessment and Management processes/techniques.
2. Learn to improve program/project planning and accomplishment, facilitate effective decision making, assist budget formulation and justification, enhance transparency and accountability with stakeholders from goal-setting to performance reporting.
3. Understand the different types of performance assessments and be able to select and Implement the appropriate approach that best suits.
4. Apply techniques to improve performance of employees in business organizations.

UNIT- I Performance Management

Scope and Significance – Advantages of Performance Management – Organizational Structure – Impact of Organizational structure and Operational Problems Performance management process – Performance Planning – Performance Appraisal -Performance Mentoring – Performance Management Strategic Planning.

UNIT – II Planning performance:

Performance Appraisal – Employer and Employee perspective, performance appraisal versus performance management and merit rating. Identifying performance dimensions, KPA's and performance planning, Performance Appraisal process. Developing an effective appraisal program. Issues in appraisal design.

UNIT III Performance Management and Employee Development:

Performance Management Skills, performance Management Framework, Employee Assessment system, Role of HR Professionals in Performance management.

UNIT – IV Performance management:

Methods of Performance Appraisal, Pros and cons of 360 Degree Appraisal. Types of Appraisal Interviews and Conducting Appraisal Interviews. Barriers to effective appraisal and overcoming barriers to appraisal.

UNIT – V Improving performance:

Identifying sources of ineffective performance. Performance Diagnosis, factors that influence performance, legal issues in Performance Appraisal. Strategies to improve performance. Contemporary practices of PMT, Balanced Scorecard – HR Scorecard - Business Process

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Reengineering - McKinsey 7Sframework - Lean Management - Quality management systems, Six-sigma practices, Quick Response Manufacturing.

III. Reference Text Books:

1. Bhattacharyya, Dipak Kumar (2011). Performance Management, Systems and Strategies, 1/e; New Delhi: Pearson
2. SoumendraNarianBagchi, Performance Management, 2e, Cengage Learning 2013.
3. Herman Aguinis, Performance management, 3e, Pearson, 2014.
4. David A Decenzo, Stephen P Robbins, "Fundamentals of Human Resource Management",Wiley Publications.
5. Snell / Bohlander, "Human Resource Management", Thomson.
6. Luis R. Gomez Mejia, David B Balkin, Robert L.Cardy, "Managing Human Resources, PHIPvt. Ltd.
7. John W Newstrom, "Organizational Behaviour", Mc Graw Hill.
8. L.M. Prasad, "Principles and practices of Management", Sultan Chand & Sons.

IV.CO-CURRICULAR ACTIVITIES

A. Mandatory (student training by teacher in related real time field skills: total 10 hrs)

A. FOR TEACHERS

1. Laying foundation of performance management Cases with examples.
2. Developing students to strategically Exercise performance management methods.
3. Developing analysis of multiple Case/Workshop perspectives of performance Management

B. FOR STUDENTS

- Students must prepare a performance management planand trail it in the class.
- Students to collect information from any organization regarding performance management of an employee.
- Students have to prepare questionnaire for conducting performance management survey
- Solve various case studies.

B. Suggested co -curricular activities

- Training of students by related experts
- Assignments on talent management techniques and tools
- Seminars, conferences, discussions by inviting concerned institutions
- Guest lectures.

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MODEL PAPER
PERFORMANCE MANAGEMENT

SECTION –A

Answer Any Four of the Following **5*4=20**

1. Scope of performance management
2. performance mentoring
3. Merit rating
4. Key performance Areas(KRA's)
5. Interviews
6. Effective Appraisal
7. HR Score card
8. Lean management

SECTION –B

Answer the following questions **5*10=50**

9. Explain the Significance and advantages of performance management

(OR)

10. Describe performance management strategic planning

11. Explain performance planning

(OR)

12. Explain the process of performance Appraisal

13. Describe performance management skills

(OR)

14. Explain the role of HR professionals in performance management

15. Describe the process of conducting Appraisal interviews

(OR)

16. Explain the barriers to effective appraisal and over coming barriers to appraisal

17. Describe the legal issues in performance appraisal

(OR)

18. Explain business process re engineering

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SEMESTER-VII
Course:18-INDUSTRIAL SAFETY

Course Objectives:

- To achieve and understanding of principles of safety management.
- To enable the students to learn about various functions and activities of safety department.
- To enable students to conduct safety audit and write audit reports effectively in auditing situations.
- To have knowledge about sources of information for safety promotion and training.
- To familiarize students with evaluation of safety performance.

UNIT-1:INTRODUCTIONTOINDUSTRIALSAFETY:

Need for safety, Safety legislation: Acts and rules, Safety standards and codes, Safety policy: safety organization and responsibilities and authorities of different levels. Accident sequence theory, Nature of Accident, Process of accident, Causes of accidents, Accident prevention and control techniques, Plant safety inspections, Job safety Analysis and investigation of accidents.

UNIT-2:SAFETYEDUCATION:

Importance of training-identification of training needs-training methods – programmes, seminars, conferences, competitions – method of promoting safe practice - motivation – communication – role of government agencies and private consulting agencies in safety training – creating awareness, awards, celebrations, safety posters, safety displays, safety pledge, safety incentive scheme, safety campaign.

UNIT-3:TRAINING PROGRAMS:

In-Plant and Out- of–Plant Training. Seminars, workshops. Safety Induction Program for newrecruitsandworkforce.ToolboxTalk.Jobinstructionsvs.SafetyInstructions-EmployeeParticipationin Safety-Safety committee and union participation:

UNIT-4:ACCIDENT PREVENTION:

Definition : Incident, Accident, Injury , Dangerous occurrence ,Unsafe Act, Unsafe, Conditions, Hazards, Error, Oversight, Mistake ,Near Miss, Electricity & Hazards, Of Electricity, Explosives and Transportation Safety.

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UNIT-5:SAFETYAUDIT:

Components of safety audit, types of audit, audit methodology, non-conformity reporting (NCR),audit checklist and report – review of inspection, remarks by government agencies, consultants,experts–perusalofaccidentandsafetyrecords,formats–implementationofauditindication-liaison with departments to ensure co-ordination–checklist–identification of unsafe acts of workers and unsafe conditions in the shop floor.

Reference Books:

1. BlakeR.B.,"Industrial Safety"PrenticeHall,Inc., NewJersey,.3rdEdition.
2. DanPetersen, "Techniques of Safety Management",McGraw-HillCompany, Tokyo.
3. HeinrichH.W."IndustrialAccidentPrevention"McGraw-HillCompany,NewYork.
4. IndustrialSafety,HealthandEnvironmentManagementSystems,Prof.SunilS.Rao&R.K. Jain,KhannaPublishing
5. PrinciplesofIndustrialSafetyManagement,DasAkhilKumar,PHIPublishing.

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MODEL PAPER
INDUSTRIAL SAFETY

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SECTION –A

Answer Any Four of the Following **5*4=20**

1. Plant safety inspections
2. Performance mentoring
3. Role of government agencies
4. Safety posters
5. Safety Induction Program
6. Transportation Safety
7. Types of audit
8. Union participation

SECTION –B

Answer the following questions **5*10=50**

9. Explain the industrial safety organization authorities and responsibilities of different levels

(OR)

10. Explain the accident prevent control techniques

(OR)

11. How to create awareness in safety training
12. Explain the role of government and private agencies in safety training

(OR)

13. Explain In plant and out plant training methods

(OR)

14. Explain the employee and union participation in safety training programs
15. How to prevent accidents

(OR)

16. Write about unsafe act and unsafe conditions
17. Explain the components of safety audit

(OR)

18. write about audit checklist and report – review of inspection

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SEMESTER-VII
Course:17-DATA VISUALIZATION

UNIT 1

Introduction to Tableau: What is Tableau, Tableau Desktop, Tableau Reader, Tableau Online, and Tableau Server? An Introduction to Data in Tableau, Shaping Data for Use in Tableau, Dimension and Measure.

UNIT 2:

Introduction to Aggregation: Five Ways to Create a Bar Chart in Tableau, Introduction to aggregation in Tableau, Line graphs, independent Axes, Data Hierarchies in Tableau. An Introduction to Filters: Dimension Filters, Measure Filters, Macro Filters.

UNIT 3:

An Introduction to Sets and Detail Expressions: How to create a Set in Tableau, Tableau level of Detail Expressions. Dashboards and Distribution: Dashboards in Tableau, Distributing Tableau in Dashboards.

UNIT 4:

Chart Types: Highlight Table, Heat Map, Dual-axis Combination Chart, Scatter Plot, Tree Map, Sparkline's, Bullet Graphs, and Histograms in Tableau.

UNIT 5:

Advanced Chart Types: Box-and-Whisker Plot, Symbol Map , Filled Map, Dual-axis Map, Sequential Path, Gnatt Chart, Donut Chart, Funnel Chart, Pace chart, Control Chart, Dumbbell chart in Tableau

MODEL PAPER
DATA VISULIZATION

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SECTION –A

Answer Any Four of the Following **5*4=20**

1. Write a short notes on Tableau
2. Write about tableau online and tableau server
3. What are the five ways to create a bar chart in tableau
4. Explain about aggregation in brief
5. How to create a set in tableau
6. What are the features of tableau
7. Explain about highlight table
8. Write about dumbbell chart in tableau

SECTION –B

Answer the following questions **5*10=50**

9.Explain about dimension and measure

(OR)

10.Explain the process of shaping dates for use in tableau

11.Explain about aggregation in tableau

(OR)

12.Explain about various types of filters

13.Write about applications of tableau

(OR)

14.Explain about dashboards in tableau

15.Explain about Dual –axis combination chart and scatter plot

(OR)

16.Write about tree map and bullet graphs

17.explain about Box –and – whisker plot and symbol map

(OR)

18.Explain about Donut chart and control chart

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SEMESTER-VII
Course:17-EXPORT & IMPORT MANAGEMENT

I. Learning Outcomes:

Upon successful completion of the course the student will be able to

1. Understand the significance of Export and Import Management and its role in Economy and as job careers
2. Acquire knowledge on Procedures of export and import
3. Involve in pre and post EXIM activities
4. Enhance their skills by practicing in foreign trade

II. Syllabus: Total 75hrs (Teaching 60, Training10, Others 05 including IE etc.)

UNIT 1: Introduction of EXIM policies and procedures

Objectives of EXIM policies- Role of export houses in the development of Economy- State Trading Corporations and SEZs - Flow of Procedure for export and import process.

UNIT 2: Product planning and for import and export

Export Promotion Councils in India and Commodities Board of India - Its functions and their role - Registration cum Membership Certificate (RCMC) and registration of Export Credit and Guarantee Corporation of India (ECGC)

UNIT 3: Documentation at the time of EXIM goods

Commercial documents- Principal and Auxiliary documents - Regulatory documents (relating to Goods, Shipment, Payment, Inspection, Payment, Excisable and FERA)

UNIT 4: Payment Procedures in foreign trade

Factors determine for Payment and methods of receiving Amount -Payment in advance Documentary Bills- Documentary credit under Letter of Credit- Different types of Letters of Credit - Open account with periodical settlement.

UNIT 5: Insurance and Shipment of Goods

Cargo Insurance (Marine)- Types of Marine insurance policies- Kinds of losses - Shipment of goods - Clearing and forwarding agents- its role and significance-Classification of services Essential and Optional services-clearance procedures for export of goods.

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III. Reference Text Books

1. Rama Gopal.C; Export and Import Procedure- New Age International Publishers
2. Neelam Arora, Export and Import Procedure and documentation- Himalaya Publishing House
3. Dr.SwapnaPilai, Export and Import Procedure & documentation- Sahityabhawan Publications
4. Sudhir kochhar, Export and Import Procedure- Aggarwal Book house

IV Co-Curricular Activities:

A. Mandatory (Student training by teacher in the related field skills:10 hrs):

1. For Teachers:

Training of students by teacher (using actual field material) in classroom and field for not less than 10 hours on techniques of foreign trade by involving students in making observations, preparation of documents, identification of exportable goods and recording experiences of exporters.

1. **For Students:**

Students shall visit export import houses or related centers and observe processes of identification of exportable goods, registration of RCMC, logistic support and insurance procedures. They shall submit their observations as an individual handwritten Fieldwork/Project work Report in the given format and submit to teacher.

2. Max marks for Fieldwork/Project work Report: 05

3. Suggested Format for Fieldwork/Project work (not more than 10 pages):

Title page, student details, contents, objective, step-wise work done, findings, conclusions and acknowledgements.

4. Unit tests (IE).

B. Suggested Co-Curricular Activities

1. Training of students by a related field expert.
2. Assignments (including technical assignments like identifying sources of exportable and Excisable goods, Case Studies of export procedures and the success stories and getting Practical experiences by exporting Agricultural and local products including DWACRA
3. Seminars, Conferences, discussions by inviting concerned institutions
4. Visits to exporting units. SEZs and Export houses
5. Invited lectures and presentations on related topics by field experts.

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Krishna University Machilipatnam

Board of Studies Meeting in BBA Analytics

Date:11-06-2025

Agenda:

- Adaptation of B.B.A. Analytics syllabus for the 3
- 5th,7thand8thSemesters under single major program for the academic year 2024-2025.

The Board of studies for B.B.A. Analytics Program is conducted on 10-06-2025 at Nalanda Degree Collegee, Vijayawada with following members:

S. No	Position	Name	Signature with Date
1	Chairman	Sri G Narayana Rao Lecturer in Commerce, Dr. LHR Govt. Degree College, Mylavaram NTR Dist. Cell: 9440490959, Email ID: glatharao.999@gmail.com	24/6/25
2	Member	Mr. D. Vasu Dept. of BBA Business Analytics, P.B. Siddhartha College of Arts and Science, Vijayawada. Cell: 8885869995, Email: vasudammati1@gmail.com	24/6/25
3	Member	Mr. NayapamuHemanth Kumar Department of MBA, KBN College, Vijayawada, Cell: 9100864160, Email: hemathkumar.nayapamu@kbncollege.ac.in	
4	Member	Ms. Y. Srilakshmi Department of MBA, Nalanda Degree College, Vijayawada. Cell: 9948024529, Email: srilakshmiy@nalanda.edu.in	
5	Industry Expert	Mr. Ravi TejaTallam Industrialist, General Manager, Trigyn Technologies Ltd., Vijayawada. Cell: 7680822227, Email: ravi.t@trigyn.com&ravitejatallam@yahoo.com	
6	University Nominee	Dr. M. Sravani Asst. Professor, Dept. of Business Management, Krishna University, Cell: 9966361117, Email: sravani_me21@yahoo.co.in	
7	Student Member -1	B. Venkatesh Student, III BBA-BA, P.B. Siddhartha College of Arts and Science,	
8	Student Member -2	T.Sathish Student, Nalanda Degree College, Vijayawada.	

Resolutions:

The members of the Board of Studies for B.B.A. Analytics Programme of Krishna university held its meeting at Kakaraparti Bhava Narayana College, Vijayawada and made the following resolutions unanimously:

1. It is resolved to adopt and implement the syllabus for the core subjects in the 5th, 7th and 8th semesters (Major5,6,7,8 and Major9,10,11) as appended here under from the academic year 2024 – 2025.

2. It is resolved to adopt and implement the 4 minor subjects syllabus in the 5th, 7th and 8th Semesters (Minor 5 [illegible]) in (i.e. Digital Marketing, Computer Science, Logistics and Supply chain management and Data Science) as appended here under from the academic year 2024 – 2025.

3. The Board of Studies unanimously resolved to have 30 Marks allocated for the Continuous Internal Assessment in the college and 70 Marks for Semester End Examination to be held by Krishna University, Machilipatnam.

4. The Board of Studies unanimously resolved the Blue-Print/Question paper structure as held down here under. (For Both Major and Minor subjects).

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Blue – Print / Question Paper Structure
Semester End Examination

Max. Marks: 70 **Max. Time: 3 Hrs.**

SECTION A (5X4 = 20 MARKS)

Answer any Five Questions of the following. Each question carries 4 Marks.

1. Contents of Unit – I
2. Contents of Unit – II
3. Contents of Unit – III
4. Contents of Unit – IV
5. Contents of Unit – V
6. Contents from any Unit
7. Contents from any Unit
8. Contents from any Unit

SECTION B (5X10 = 50 MARKS)

Answer any Five Questions of the following. Each question carries 10 Marks.

9. (a) Contents of Unit – I

(Or)

(b) Contents of Unit – I

10. (a) Contents of Unit – II

(Or)

(b) Contents of Unit – II

11. (a) Contents of Unit – III

(Or)

(b) Contents of Unit – III

12. (a) Contents of Unit – IV

(Or)

(b) Contents of Unit – IV

13. (a) Contents of Unit – V

(Or)

(b) Contents of Unit – V

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ANDHRA PRADESH STATE COUNCIL OF HIGHER EDUCATION

Programme: B.B.A.Business Analytics Honours(Major)

w.e.f. AY 2023-24COURSESTRUCTURE

Semester	Course Number	Course Name	No of Hrs/Week	No of Credits
Semester- I	1	Fundamentals of Commerce	4	4
	2	Business Organization	4	4
Semester-II	3	Principles of Management	4	4
	4	Quantitative methods for managers	4	4
Semester-III	5	Fundamentals of Business Analytics	4	4
	6	Database Management	4	4
	7	Accounting for managers	4	4
	8	Human Resource Management	4	4
Semester-IV	9	Marketing Management	4	4
	10	Data mining & Warehousing	4	4
	11	Financial Management	4	4
Semester- V	12	Sales and Distribution Management	4	4
	13	Statistical Quality control and Six Sigma	4	4
	14	Data Analytics with Python	4	4
	15	Business Research Methods	4	4
Semester-VI	Internship			
Semester-VII	16	E-Business (or) Brand Management	4	4
	17	Data visualization (or) Export & import Management	4	4
	18	Performance Management (or) Industrial Safety	4	4
	SEC			

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	20			
Semester-VIII	21	Big data Analytics using R (or) Global Marketing	4	4
	22	Optimization Techniques (or) Training and Development	4	4
	23	Machine learning using Python (or) Business Statistics	4	4
	SEC			
	24			
	25			

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SEMESTER-VIII
Course:21-BIG DATA ANALYTICS USING R

Learning Outcomes: Upon successful completion of the course, a student will be able to:

1. Understand data and classification of digital data.
2. Understand Big Data Analytics.
3. Load data in to R.
4. Organize data in the form of R objects and manipulate them as needed.
5. Perform analytics using R programming.

Syllabus:

Unit – 1: Introduction to Big data

Data, classification Of Digital Data--structured, unstructured, semi-structured data, characteristics of data, evaluation of big data, definition and challenges of big data , what is big data and why to use big data ?, business intelligence Vs big data.

Unit – 2: Big data Analytics

What is and isn't big data analytics? Why hype around big data analytics? Classification of analytics, top challenges facing big data, importance of big data analytics, technologies needed to meet challenges of big data

Unit – 3: Introduction to R and getting started with R

What is R? Why R? , advantages of R over other programming languages, Data types in R-logical, numeric, integer, character, double, complex, raw, coercion, ls() command, expressions, variables and functions, control structures, Array, Matrix, Vectors, R packages.

Unit – 4: Exploring data in R

Data frames-data frame access, ordering data frames, R functions for data frames dim(), nrow(), ncol(), str(), summary(), names(), head(), tail(), edit() .Load data frames—reading from .CSV files, sub setting data frames, reading from tab separated value files, reading from tables.

Unit – 5: Data Visualization using R

Reading and getting data into R (External Data): XML files, Web Data, JSON files, Databases, Excel files. Working with R Charts and Graphs: Histograms, Bar Charts, Line Graphs, Scatterplots, Pie Charts

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BOOKS

1. Seema Acharya , Subhashini Chellappan --- Big Data And Analytics second edition, Wiley
2. Seema Acharya--Data Analytics using R, McGraw Hill education (India) Private Limited.
3. Big Data Analytics, Introduction to Hadoop, Spark, and Machine-Learning, Raj kamal, Preeti Saxena, McGraw Hill, 2018.
4. Big Data, Big Analytics: Emerging Business intelligence and Analytic trends for Today's Business, Michael Minelli, Michelle Chambers, and Ambiga Dhiraj, John Wiley & Sons, 2013.

SEMESTER-VIII
Course:21-BIG DATA ANALYTICS USING R
MODEL PAPER

Section - A

Answer any FIVE questions **5 X 4 = 20M**

1. What are the key characteristics of data?
2. How does big data differ from traditional data?
3. What is big data analytics?
4. What are the benefits of leveraging big data analytics?
5. What is the difference between 'numeric' and 'integer' data types in R?
6. Give an example of a control structure in R.
7. What is the purpose of the edit() function in R?
8. Which R function is commonly used to read Excel files?

Section – B

Answer the following questions **5 X 10 = 50M**

9. a) Explain the evaluation process of big data and identify the criteria used for assessing big data sets.

OR

b) Define data and explain the importance of data in the context of big data.

10. a) Discuss common misconceptions about big data analytics and clarify what activities or data types do not fall under this domain.

OR

b) Elaborate on how big data analytics drives decision-making, innovation, and competitive advantage for organizations.

11. a) Discuss the advantages of using R over other programming languages such as Python or SAS.

OR

b) Explain the process of installing and loading R packages. Why is it important to use packages in R programming?

12. a) Explain how to access specific columns and rows in a data frame. Provide an example using bracket notation.

OR

b) Describe the importance of understanding the structure and summary of your data before performing further analysis.

13. a) Explain the process of importing JSON data into R. What functions or packages are typically used?

OR

b) Describe the process of creating a bar chart in R. How can you customize the appearance of the bar chart?

SEMESTER-VIII

Course:21-GLOBAL MARKETING

Course Objectives:

- To understand the various factors that influence the business at global level.
- To analyse the strategic segmentation , targeting and positioning(STP) process at global level
- To analyse the marketing mix strategy at global level.
- To understand the effective global channels of distribution.
- To understand the various promotional strategies globally.

UNIT-I:INTRODUCTION:

GlobalMarketingConcept:Nature,EvolutionandScopeofGlobalMarketing,ManagementOrientations (EPRG Framework), Global Environment: Economic, Socio-Cultural, Technological, Ecological, Political and Legal Environment.

UNIT-II:STP STRATEGIES:

Global Market Segmentation, Targeting and Positioning, Criteria for Global Market Selection, Basic Modes of Entry into Foreign Markets, Global Product Strategies: Ansoff Matrix, New Product Development Global Level, Global Product Life Cycle, Building Global Brands.

UNIT-III:GLOBAL PRICING:

Objectives, Factors influencing Global pricing, Pricing Methods, Pricing Strategies, Transfer Pricing, Issues in Global Price Setting.

UNIT-IV:GLOBALDISTRIBUTIONANDLOGISTICS:

Global Channel Functions, Structure of Global Distribution Systems, Criteria for Channel Design.

UNIT-V:INTERNATIONALPROMOTIONALPOLICY:

International Promotion, Concept, Strategies, International advertising, International Sales Promotion, Sales force and their management, other forms of promotion for global markets.

ReferenceBooks:

1. Keifer Lee,SteveCarter,GlobalMarketingManagement,OxfordUniversityPress.
2. WareenJ.Keegan,NavalK.Bhargava,GlobalMarketingManagement,PearsonEducation.
3. Jean-PierreJennet

   &H.DavidHennessey,GlobalMarketingStrategies,WileyIndia,Delhi.
4. Vasudeva:International Marketing, Excel Publications.

Course:21-GLOBAL MARKETING
MODEL PAPER

Answer any FIVE questions **5 X 4 = 20M**

1. What is the concept of global marketing?
2. What is global market segmentation?
3. Provide examples of successful global branding campaigns
4. What is transfer pricing, and why is it important in multinational corporations?
5. What is value-based pricing, and how can it be applied across different countries?
6. How do global channel functions differ from domestic channel functions?
7. Discuss the main objectives of international promotion in global marketing.
8. How should companies select and train international sales personnel?

Section – B

Answer the following questions **5 X 10 = 50M**

9. a) Discuss the key challenges faced by companies engaged in global marketing.

OR

b) How does the economic environment influence global marketing strategies?

10. a)What are the main factors to consider when selecting a foreign market for expansion?

OR

b) Explain the concept of the global product life cycle and its stages.

11. a) List and explain the key factors that influence pricing decisions in international markets.

OR

b) Discuss the pros and cons of using market-oriented (competitive) pricing in global markets.

12. a) Describe the process of order processing and inventory management within international channels.

OR

b) How does product type influence the choice of distribution channels in global markets?

13. a) Discuss the role of digital and social media advertising in global promotion.

OR

b) Explain the role of point-of-sale displays and sampling in international sales promotion strategies.

1. 3. 5.

2. 4.

SEMESTER-VIII

Course:22- OPTIMIZATION TECHNIQUES

Learning Outcomes

After learning this course, the student will be able

- To minimize the total elapsed time in an industry by efficient allocation of jobs to the suitable persons.
- To find a solution for an adequate usage of human resources
- To link the OR techniques with business environment and life sciences
- To convert real life problems into mathematical models
- To inculcate logical thinking to find a solution to the problem.

Unit – 1:Introduction to Linear programming–Introduction General form of LPP- Slack variable, surplus variable and artificial variables unbounded solutions, methods of LPP – Big-M method, Two- phase simplex method - Graphical simplex methods.

Unit – 2:Duality in Linear Programming –Concept of duality -Definition of Primal and Dual Problems, General rules for converting any primal into its Dual, Relation between the solution of Primal and Dual problem (statements only). Dual Simplex Method.

Unit – 3:Sequencing problem: Introduction and assumptions of sequencing problem, Sequencing of n jobs and one machine problem. Johnson's algorithm for n jobs and two machines problem- problems with n-jobs on two machines, algorithm for n jobs on three machines problem- problems with n- jobs on three machines.

Unit – 4:GameTheory: Two-person –zero-sum-games.PureandMixedstrategies.Maximum and Minimum Principles - Saddle point and its existence. Games without Saddle point-Mixed strategies. Solution of 2 x 2 rectangular games. Graphical method of solving 2 x n and m x 2 games. Dominance Property.

Unit – 5:Network Scheduling: Basic Components of a network, nodes and arcs, events and activities– Rules of Network construction – Time calculations in networks - Critical Path method (CPM) and PERT.

Practical Syllabus :

- Problem solving using Big M - method.
- Problem solving using Two Phase method. .
- Problems based on Dual simplex method.
- Solution of sequencing problem—processing of n jobs through two machines
- Solution of sequencing problem- processing of n jobs through three machines
- To perform Project scheduling of a given project (Deterministic case-CPM).
- To perform Project scheduling of a given project (Probabilistic case-PERT).
- Solution of m x n games by dominance rule.

References:

1. S.D. Sharma: Operations Research, KedarNath Ram Nath& Co, Meerut.
2. KantiSwarup, P.K.Gupta, Manmohan: Operations Research, Sultan Chand and sons, NewDelhi.
3. J.K. Sharma: Operations Research and Application, Mc. Millan and Company, New Delhi.

OPTIMIZATION TECHNIQUES
MODEL PAPER

Answer any five questions **5 X 4 = 20M**

1. Define the terms
   (a) Slack variables
   (b) Surplus variables
   (c) Artificial variables
2. Explain the procedure for changing primal LPP into dual LPP.
3. Give the assumptions of sequencing problem.
4. Define Strategy.
5. Define Pessimistic time, Optimistic time, Most likely time.
6. Explain the applications of network techniques.
7. Obtain the dual form of the following LPP.
   Maximize $Z=2X_1+5X_2$ Subject to the constraints
   $3X_1+4X_2\leq 8$
   $5X_1+6X_2\leq 3$
   $-2X_1+4X_2\leq 5$
   $X_1, X_2\geq 0$
8. Explain the problem of 3 machine and n jobs.

Section - B

Answer the following questions 5X10=50M

9. (a) Explain the procedure for Two Phase Method.

(OR)

(b) Solve the following LPP by Big M method
Maximise $Z=-2X_1-3X_2$ subject to the constraints
$X_1+X_2\geq 5$,
$X_1+2X_2\geq 6$,
$X_1, X_2\geq 0$

10. (a) Explain dual simplex method.

(OR)

(b) Use dual Simplex method to solve the following L.P.P.:
Minimize $Z= 3X_1+X_2$ subject to the constraints:
$X_1+X_2\geq 1$,
$2X_1+3X_2\geq 2$,
$X_1, X_2\geq 0$

1. 3. 5.
2. 4.

11. (a) Explain Johnson's algorithm of sequencing of n jobs on 2 machines.

(OR)

(b) A Company has five jobs to perform three machines A, B, C in the order ABC.The processing time in minutes are given below. Find the optimum job sequence for the company. Also find the Idle time for machines A,B and C.

Jobs	1	2	3	4	5
Machine A	4	9	8	6	3
Machine B	4	5	3	2	6
Machine C	6	9	11	8	7

12. (a) Given the following information.

Activity	0-1	1-2	1-3	2-4	2-5	3-4	3-6	4-7	5-7	6-7
Duration	2	8	10	6	3	3	7	5	2	8

i) Draw a network diagram

ii) Identify the critical path and find the total project duration

iii) Determine the total, free, and independent floats

(OR)

(b) The following information is given.

Activity(i-j)	1-2	1-3	1-4	2-5	3-5	4-6	5-6
Pessimistic time(weeks)	7	7	8	1	14	8	15
Most likely time(weeks)	1	4	2	1	5	5	6
Optimistic time(weeks)	1	1	2	1	2	2	3

i) Draw the project network.

ii) Find the expected duration and variance of each activity. what is the expected project length?

iii) Calculate the variance and standard deviation of the project length.

13. (a) Using Dominance principle to simplify the rectangular game with the following pay of matrix and solve it graphically

	PLAYER B			
PLAYER A	I	II	III	IV
	18	4	6	4
	6	2	13	7
	11	5	17	3
	7	6	12	2

(OR)

(b) Solve the following game graphically:

Player B

Player A $\begin{bmatrix} 2 & 1 & 0 & -2 \\ 1 & 0 & 3 & 2 \end{bmatrix}$

SEMESTER-VIII

Course:22-TRAINING AND DEVELOPMENT

Course Objectives:

- Understand basic concepts associated with learning process, learning theories, training and development.
- Understand training needs, identification of training needs, training processes, training methods.
- To familiarize with evaluation design to asses training program effectiveness.
- Emerging trends in training and development.
- Relevance andusefulnessoftrainingexpertiseintheorganizationalworkenvironment.

UNIT-I:TRAINING AND DEVELOPMENT

Introduction to Training- Scope, Objectives and Importance Beneficiaries of Training, Factors influencing working and learning. Training Need Analysis, Training practices, Problems in Training process, emerging trends in training.

UNIT-II:STEPS IN TRAINING PROGRAM

Need for Training and Development, Role of training managers – Administrators, Consultants, Designers and Instructors, Identification of training needs – Potential macro needs,-DesigningCompetencyBasedtrainingprograms.Evaluationoftrainingprograms-Evaluationprocess,Feedback mechanism, Methods of Training Evaluation, Training Effectiveness Models – Kirkpa trick Model of Training Effectiveness, CIRO Model.

UNIT-III:TRAINING DESIGN

Introduction to Training Design, Factors affecting design of a training program, Designing a training module Identification of Trainer, designing the Training Schedule, Preparingcohtent,StudyMaterial.Budgeting for training, types of cost involved in training programs. Identification of alternative methods of instruction. Conduct of the Program-Physical arrangements, Creating climate for learning, tips for effective implementation.

UNIT-IV:TRAININGMETHODSANDTRAINER'SSTYLE

Types of training- On-the-Job methods, Off-the -Job training methods (Job Instruction method, Job Rotation Method, presentation methods, hands on methods, group building methods), choosing a training method. Competence of trainer- Trainer's skills and style, Trainer's roles, Do's and Don'ts for Trainers.

UNIT-V:DEVELOPMENT

Executive Development- Need, importance of Training for Managers. Steps in the organization of Executive Development Programs, Techniques of Development Programs. Difference between Training and Development, Career Development. Counselling- Meaning of Counselling, Process of Counselling. Non- Directive Counselling, Evaluation of Counselling programs, Factors determining Effectiveness of Counselling.

ReferenceBooks:

1. Gary Dessler, Human Resource Management, Pearson Education.
2. Noe,R.A. Employee Training & Development .McGraw-Hill India.
3. Aswathappa K, HumanResource to Personnel Management, TataMcGrawHill.
4. Mamoria C.BandMamoria S. Personnel Management, Himalaya Publishing Company.
5. Rolf,P and Udai Pareek, Training for Development, Sage Publications Pvt. Ltd.

SEMESTER-VIII
Course:22-TRAINING AND DEVELOPMENT
MODEL PAPER

Section - A

Answer any five questions **5 X 4 = 20M**

1. How does training differ from development?
2. What is Training Need Analysis, and why is it important?
3. What is meant by potential macro needs in training need analysis?
4. What is a competency-based training program?
5. What criteria should be considered when selecting a trainer?
6. Why is flexibility important in training schedules?
7. How does job instruction training facilitate skill development?
8. What is meant by career development within an organization?

Section - B

Answer the following questions **5 X 10 = 50M**

9. a) Explain the significance of training in enhancing employee performance.

OR

b) How does organizational culture impact the effectiveness of training?

10. a) How do competency-based programs align training with organizational goals?

OR

b) Explain the CIRO Model and how it differs from other evaluation models.

11. a) What are some effective ways to design engaging and interactive training materials?

OR

b) What are the advantages of using simulations and role-plays in training?

12. a) What are on-the-job training methods, and how do they differ from off-the-job methods?

OR

b) What factors should be considered when selecting an appropriate training method?

13. a) What are some common techniques used in executive development programs?

OR

b) What are the main steps involved in designing and organizing an executive development program?

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SEMESTER-VIII

Course:23-MACHINE LEARNING USING PYTHON

UNIT-I: Introduction to Machine Learning and Preparing to Model

Introduction to Machine Learning-Introduction, What is Human Learning? Types of Human Learning, What is Machine Learning? Types of Machine Learning, Problems Not To Be Solved Using Machine Learning, Applications of Machine Learning.

Preparing to Model-Introduction, Machine Learning Activities, Basic Types of Data in Machine Learning, Exploring Structure of Data, Data Quality and Remediation, Data Pre Processing

UNIT-2: Modeling & Evaluation, Basics of Feature Engineering

Modeling & Evaluation-Introduction, Selecting a Model, Training a Model (for Supervised Learning), Model Representation and Interpretability, Evaluating Performance of a Model.

Basics of Feature Engineering-Introduction, Feature Transformation, Feature Subset Selection

UNIT-3: Bayesian Concept Learning and Regression

Bayesian Concept Learning - Introduction, Why Bayesian Methods are Important?, Bayes' Theorem, Bayes' Theorem and Concept Learning, Bayesian Belief Network.

Regression: Introduction, Regression Algorithms - Simple linear regression, Multiple linear regression, Polynomial Regression Model, Logistic Regression, Maximum Likelihood Estimation.

UNIT-4: Supervised Learning: Classification, Ensemble Learning

Classification-Introduction, Example of Supervised Learning, Classification Model, Classification Learning Steps, Common Classification Algorithms - k-Nearest Neighbour (kNN), Decision tree, Random forest model, Support vector machines.

Ensemble Learning- Boosting, Bagging

UNIT-5: Unsupervised learning

Unsupervised Learning- Introduction, Unsupervised vs Supervised Learning, Application of Unsupervised Learning, Clustering –Clustering as a Machine Learning task, Different types of clustering techniques, Partitioning methods, Hierarchical clustering, Density-based methods: DBSCAN.

Finding Pattern using Association Rule - Definition of common terms, Association rule, Apriority algorithm

Reference Books:

1. Shai Shalev-Shwartz, ShaiBen David, "Understanding Machine Learning: From Theory to Algorithms", Cambridge.
2. Peter Harington, "Machine Learning in Action" , Cengage, 1st edition, 2012.
3. Peter Flach, "Machine Learning: The art and science of algorithms that make sense of data", Cambridge university press,2012.

1. 3. 5.

2. 4.

SEMESTER-VIII

Course:23-MACHINE LEARNING USING PYTHON

MODEL PAPER

Section - A

Answer any five questions **5 X 4 = 20M**

1. Why is data quality important in machine learning?
2. What is machine learning, and how does it differ from traditional programming?
3. What is the primary goal of modeling in machine learning?
4. What is meant by model interpretability, and why is it important?
5. What is Bayesian Concept Learning?
6. How is regression used for predictive modeling?
7. What are the key components of a classification model?
8. What is DBSCAN, and how does it work?

Section - B

Answer the following questions **5 X 10 = 50M**

9. .a) What are the basic types of data used in machine learning? Provide examples of each type.

OR

b) List and explain some problems that should not be solved using machine learning techniques.

10. a) Describe at least three evaluation metrics used for classification problems.

OR

b) What is feature engineering, and why is it crucial in machine learning?

11. a) Differentiate between simple linear regression and multiple linear regression.

OR

b) Describe the process of deriving estimates using MLE with an example.

12. a) Briefly explain the working principle of the k-Nearest Neighbour (kNN) algorithm.

OR

b) Discuss potential limitations or challenges associated with ensemble methods.

13. a) What are the key characteristics of partitioning clustering methods? Name two popular partitioning algorithms.

OR

b) Discuss how unsupervised learning can be utilized in customer segmentation.

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2. 4. 6.

SEMESTER-VIII
Business Statistics

LearningObjectives

Thecourseaimstodevelopamongstthelearnerstheabilitytosummarise,analyseandinterpret quantitative information for business decision making.

Learningoutcomes

Aftercompletionofthecourse,learnerswillbeableto:

1. Examineandunderstandthevariousdescriptivepropertiesofstatisticaldata.
2. Evaluate probability rulesandconceptsrelatingtodiscrete andcontinuousrandom variables to answer questions within a business context.
3. Analysetheunderlyingrelationshipsbetweenthevariablestousesimplereg ression models.
4. Analysethetrendsandtendenciesoveraperiodoftimethroughtimeseriesanalysis.
5. Examineandapplyindexnumberstoreallifesituations.

SYLLABUS

Unit1:DescriptiveStatistics(15hours)

Relationship between Mean, Median and Mode. Diagrammatic and Graphical representation of data.
Introduction to Excel/SPSS- Measures of central tendency, dispersion, skewness, kutrosis and graphs

Unit2:CorrelationandRegressionAnalysis(15hours)

Correlation Analysis: Meaning and types of Correlation; Correlation Vs Causation; Pearson's coefficient of correlation (computation and properties); Probable and standard errors; Rank correlation.

Regression Analysis: Principle of least squares and regression lines; Regression equations and estimation;Propertiesofregressioncoefficients;RelationshipbetweenCorrelation andRegression coefficients; Standard Error of Estimate.

Unit 3:Theory of estimation (10 hours)

Estimation of a parameter, criteria of a good estimator – unbiasedness, consistency, efficiency, & sufficiency. Statement of Neyman's factorization theorem.

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Testing of Hypothesis: Concepts of statistical hypotheses, null and alternative hypothesis, critical region, two types of errors, level of significance and power of a test. One and two tailed tests. Neyman-Pearson's lemma. Examples in case of Binomial, Poisson, Exponential and Normal distributions.

Unit4:Time Series Analysis(10hours)

TimeSeriesData; Componentsoftimeseries;AdditiveandMultiplicativemodels.

Trend analysis; Fitting of trend using principle of least squares – linear and second-degree parabola.

Shifting of Origin and Conversion of annual linear trend equation to quarterly/monthly basis and vice-versa.

Unit5:IndexNumbers(10hours)

Meaningandusesofindexnumbers.

ConstructionofIndexnumbers:MethodsofLaspeyres,PaascheandFisher'sIdeali

ndex. Construction and Utility of Consumer Price Indices; BSE SENSEX,

and NSE NIFTY.

Practical Exercises:

Thelearnersarerequiredto:

1. Observeandapplytheconceptslearnedinreallifesituations.
2. Practice basic calculations in statistics using spreadsheets/ statistical packages/ open source ware such as R/ Python and try to use it for solving subject related assignments.
3. Do small primary research/survey in groups and analyse the data using statistical tools discussedintheclass(Examples:BuyingBehaviour,Motivation,Stress,Brand aspects,Sales Projections, Impact of advertisements etc).
4. PlanaProjectwork
5. Studyingstockmarketmovements

1. 3. 5.

2. 4.

SuggestedReadings:

- Anderson,D.R.(2019).*StatisticsforlearnersofEconomicsandBusiness*.Boston,United States: Cengage Learning.
- Douglas A. Lind, Robert D. Mason, William G. Marchal. (2022). *Basic Statistics for BusinessandEconomics*.NewYork,UnitedStates:Mc-Graw-HillInternationaleditions.
- Gupta,S.C.,&Gupta,I.(2018).*BusinessStatistics*.Mumbai,India:HimalayaPublishing House.
- Gupta,S.P.,&Gupta,A.(2018).*BusinessStatistics:StatisticalMethods*.Delhi,India:S. Chand Publishing.
- Hazarika,P.A.(2012).*TextbookofBusinessStatistics*.Delhi,India:S.Chand Publishing.
- Levine,D.M.,Krehbiel,C.,&Berenson,L.(2009).*Viswanathan.BusinessStatistics– A First Course*. India: Pearson Education.
- Levin,R.,Rubin,D.S.,RastogiS.,&Siddqui,M.H.(2017).*Statisticsfor Management*. London, United Kingdon: Pearson Education.
- Berenson,M.,Baruch,B.M.,Levine,D.,Szabat,K.,&Stephen,D.(2020).*BasicBusiness Statistics*. Australia: Pearson.
- Murray,R.S.,Stephens,L.J.(2017).*Statistics*.UttarPradesh,India:TataMcGrawHill edition.
- Siegel,O.F.(2016).*PracticalBusinessStatistics*.Cambridge,United States:Academic Press.
- Thukral,J.K.(2021).*BusinessStatistics*.Delhi,India:TaxmanPublication.
- Tulsian,P.C.,&Jhunjhunwala,B.(2020).*Businessstatistics*.Mumbai,India:S.Chand publishing.
- Vohra,N.D.(2017).*BusinessStatistics*.Delhi,India:McGraw-HillEducationIndia.

1. 3. 5. Y. Gidalchi

2. 4.