Vels University  MBA Program Outcomes

The following outcomes have been identified by the School of Management and commerce, Faculty Council, as important for students to be able to perform at the conclusion of the MBA program. The MBA curriculum has been mapped to these outcomes, which are regularly assessed to identify levels of student achievement and areas of improvement. Students who are Graduates of the Master of Business Administration degree program will be able to:

1. Apply knowledge of management techniques in business environment

2. Evaluate the systems and processes used in an organization including the planning, decision-making, group dynamics, innovation, production, supply chain, operations, technologies, marketing and distribution management.

3. Design alternatives to solve business problems utilizing quantitative analysis, critical thinking and sound ethical decision making.

4. Summarize, process and transform data for obtaining meaningful conclusions

5. Use research based knowledge and methods including company analysis, primary and secondary data collection, analysis and interpretation of data to find solution to business problems

6. Interpret data using latest data analytics tools to address organisational problems

7. Organize and critically apply the concepts and methods of business analytics

8. Assess decision problems and build models for creating solutions using business analytical tools

9. Communicate effectively in various forms by effective use of recent technology and logical reasoning for presentations, documentation, report writing, manual preparation.

10. Adapt life-long learning and professional development to enrich knowledge and competencies

11. Design predictive and descriptive analysis on the basis of data

12. Demonstrate a global outlook with ability to identify aspects of the global business operations.
Program Specific Outcomes – MBA Business Analytics

PSO1. To comprehend the practice of iterative, methodical exploration of an organization’s data with emphasis on statistical analysis. Business analytics is used by companies committed to data-driven decision making to automate and optimize business processes.

PSO2. To anticipate needs and the analytical perspective provides clearer insights through data visualization and the data gathered is vital for statistical analysis, which in turn is essential for decision making.

PSO3. The strategic perspective focuses on the holistic impact of the initiative. It’s the most “big-picture” approach, usually focusing on competencies, competitive advantage, and overall systems and supported by evidence of best-practice, linkages to strategic objectives and reference to market influences.

PSO4. The Competitive advantage of analytics is multi-disciplinary activity: the value from insight comes not from the activity but from the execution, A business intelligence (BI) and analytics strategy empowers with the right information at the right time.

PSO5 The Advanced analytics tools enable deeper insights and discovery that will challenge business assumptions using data can help companies save thousands of pounds, improve their procurement efficiency, develop their marketing strategies, support business growth and, critically, differentiate themselves from competitors.
## VELS UNIVERSITY
### SCHOOL OF MANAGEMENT STUDIES
#### BOARD OF STUDIES MEMBERS

**MBA (GEN), MBA (LSM), MBA (LSCM) and MBA(BA)**

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Name &amp; Address</th>
<th>Designation</th>
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</table>
| 1.    | **Dr.K.S.Meenakshisundaram,**  
       | Director,  
       | School of Management Studies,  
       | Vels University, Chennai-600117 | Chairperson |
| 2.    | **Dr.R.Thenmozhi,**  
       | Professor and Head,  
       | Department of Management Studies,  
       | Madras University, Chennai | External Expert |
| 3.    | **Mr.K.V.V.Giri**  
       | President CCHA,  
       | M/S Vaishnavi freight logistics Pvt Ltd. | External Expert |
| 4.    | **Mrs.Sripriya,**  
       | Operations Programme Manager, TCS | Alumni |
| 5.    | **Dr.S.Vasantha,**  
       | Professor,  
       | School of Management Studies,  
       | Vels University, Chennai-600117 | Internal Member |
| 6.    | **Dr.S.Preetha,**  
       | Associate Professor,  
       | School of Management Studies,  
<pre><code>   | Vels University, Chennai-600117 | Internal Member |
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<tr>
<td>7.</td>
<td>Dr. G. Rajini</td>
<td>Associate Professor,</td>
<td>School of Management Studies,</td>
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<td>Dr. P. Shalini</td>
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<td>Dr. P. G. Thirumagal</td>
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<td>Assistant Professor,</td>
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MBA

BUSINESS ANALYTICS

Curriculum And Syllabus

(Based on Choice Based Credit System)

Effective from the Academic year

2016-2017

Department of M.B.A

School of Management Studies
# MBA - BUSINESS ANALYTICS CURRICULUM

## SEMESTER 1

<table>
<thead>
<tr>
<th>Code</th>
<th>Course</th>
<th>Hour / Week</th>
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<td>Applied Statistics for Decision Making</td>
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<td>16CMBN12</td>
<td>Macro Economics in Global Economy</td>
<td>4 0 0 3</td>
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<td>Financial Analysis and Reporting</td>
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<td>Organizational Behavior</td>
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<td>Accounting for Managers</td>
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<td>Research Methodology</td>
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Total no of Credits: 90
### SEMESTER II

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# SEMESTER IV

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## List of Discipline Specific Elective (DSE)

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<td>Ethical and Legal Aspects of Analytics</td>
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<td>Advanced Research Methods and Predictive Analysis</td>
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<td>15</td>
<td>16GMBN33</td>
<td>Financial Planning Data Modeling and Mining</td>
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</table>
Course Objective:

- The basic aim of this course is to impart knowledge of basic statistical tools & techniques with emphasis on their application in Business decision process and Management.
- Statistical analysis informs the judgment of the ultimate decision-maker—rather than replaces it—some key conceptual underpinnings of statistical analysis will be covered to insure the understandability of its proper usage.

Course Outcomes:

- CO-1: To facilitate objective solutions in business decision making under subjective conditions.
- CO-2: To enhance knowledge in probability theory
- CO-3: To understand normality and its distribution concepts.
- CO-4: To stress the need for collection of data and its dispersion techniques.
- CO-5: To apply time series analysis in market prediction rates.
- CO-6: To draw conclusions over the hypothetical situations.
- CO-7: To determine the relationship between dependent and independent variables.
- CO-8: To measure the trend setting factors for projection of sales and demand curves.
- CO-9: To extract the variance among the factors of study concerned.
- CO-10: To classify the distribution of data spread.

UNIT I  INTRODUCTION  
Introduction to Statistics - Collection of Data - Measures of Central Tendency & Dispersion in Frequency Distribution

UNIT II  PROBABILITY THEORY  
Probability Theory– Addition, Multiplication & Baye’s Theorem. Test for Normality. Skewness & Kurtosis

UNIT III  CORRELATION  
Correlation-Karl Pearsons and Rank Correlation. Regression(linear)

UNIT IV  HYPOTHESIS TESTING  
Hypothesis Testing – Test for Single Mean & Two Mean – Chi-Square test, F test – ANOVA.

UNIT V  TESTS  
Index Nos-Unweighted and Weighted-Test of Consistency. Time Series Analysis-Measurement of Secular Trend

Total – 60 H
Text Books:

References:
3. Arora PN & others,”Complete Statistical Methods”, S. Chand, 3rd Ed, 2010
16CMBN12MACRO ECONOMICS IN GLOBAL ECONOMY 4 0 0 3

Course Outcome:

Co-1: Analyze the changes in the macro economic indicators
Co-2: Build the economic policy suitable for the open and closed economy.
Co-3: Suggest a feasible solution for the inflationary situation.
Co-4: Estimate the macroeconomic indicators
Co-5: Distinguish the fixed and floating exchange rates

Unit I 12

Unit II 12

Unit III 12

Unit IV 12

Unit V 12
Exchange Rate – Purchasing Power Parity Theory – Foreign Exchange Market – Fixed, Variable Floating Rates – Inter-dependence in Exchange Market

Total – 60 h

REFERENCE BOOKS:
M.L. JHINGAN – MACRO ECONOMICS
S. SANKARAN – MACRO ECONOMICS
COURSE OBJECTIVES:

- The objective of the course is to provide students with hands on experience in financial statement analysis.
- Students will be exposed to general tools of financial analysis, theoretical concepts, and practical valuation issues.
- Students should be comfortable with using firm’s financial statements to develop understanding of their performance and to establish basis for making reasonable evaluation estimates.

Course Outcomes:

- CO1 - Describes and apply the basic techniques of financial statement analysis
- CO2 - Explain the relationship between strategic business analysis, accounting analysis and financial analysis;
- CO3 - Identify and utilise value-relevant information contained within financial statements;
- CO4 - Recognise and explain the fundamental role of accounting numbers in the valuation of entities and the key financial claims on these entities assets (equity and debt securities);
- CO5 - Understand the impact of financial reporting choices on the usefulness of reported earnings to predict future performance;
- CO6 - Prepare a written analysis of a listed company, which incorporates and synthesises the strategic, accounting and financing techniques covered in the course;
- CO7 - Conduct applied business research (including locating, critically interpreting and evaluating firm-specific financial information);
- CO8 – Analyse the ratios for M & A and restructuring.
- CO9 – Forecast the future trend through time series analysis
- CO10 – Apply the knowledge to compare GAAP and IFRS.

UNIT 1: Introduction to financial analysis

Finance and accounting – meaning –Types of companies - Financial statement analysis – on the basis of materials used – on the basis of modus operandi – Comparing financial and non-financial listed companies performance through annual as a bench marking against competitor and industry.
UNIT 2: Financial analysis through ratios  

UNIT 3: Prospective and Credit analysis  

UNIT 4: M & A and Equity analysis  

UNIT 5: Financial reporting  
Financial reporting – Concepts – users, Objectives of financial reporting – Qualitative characteristics of information in financial reporting – basic problems of disclosure – Role of SEBI in IFRS – Statutory disclosures in IFRS – Corporate reporting practices in India - Challenges in financial reporting

REFERENCES
- Palepu Healy and Bernard, : Business analysis & valuation, South western college publication, 2nd edition
- Raghu Palat, “Fundamental analysis for investors”
Course Objective:

- To introduce students to theories and concepts of organizational behavior, increase knowledge and understanding of organizational behavior terminology and main concepts.
- To develop students’ skills in organizational behavior analysis, by providing practice in assessing organizational behavior problems.
- To acquaint the student with the determinants of intra-individual, inter-personnel and inter-group behaviour in organizational setting and to equip them with behavioural skills in managing people at work.

Course Outcome:

- CO – 1: To define organization and classify the contributing disciplines, approaches to OB.
- CO – 2: To clearly understand challenges and opportunities for OB.
- CO –3: To acquire knowledge in applying motivational theories to resolve problems of employee absenteeism, turnover, stress, job satisfaction, job performance and organizational commitment.
- CO – 4: To acquire abilities and in identifying why effective communication systems are particularly important in a pluralistic, multicultural workforce).
- CO – 5: To analyses the behaviour of individuals and groups in organization’s in terms of the key factors that influence organisational behaviour.
- C0 – 6: To have a better comprehend of how organizations function, how individuals behave within organizations and how to manage interactions in the workplace.
- CO – 7: To obtain knowledge on organizational factors affecting teams, recognize organizational cultures in which groups function).
- CO –8: To assess the potential effects of organisational-level factors (such as Power, politics. Organisational culture, climate, change and organisational development on organisational behaviour.
- CO –9: To discover how transactional analysis can help people manage complex organizations.
- CO –10: To develop skills in handling stress and also identify the different form of stress).
UNIT I  INTRODUCTION

Unit II  FOUNDATIONS OF INDIVIDUAL BEHAVIOUR

Unit III  FOUNDATIONS OF GROUP BEHAVIOUR
Motivation- concepts, early theories, contemporary theories, motivation concepts to application. Leadership – concepts, theories – finding and creating effective leaders.

Unit IV  GROUP DYNAMICS
Defining and classifying groups – stages of group –group decision making. Teams – creating effective teams – managing work teams. Communicating to teams.

Unit V  UNDERSTANDING ORGANISATION SYSTEM

Total: 45 H

Text Books:

References:
1. Udai Pareek , Understanding Organisational Behaviour, Oxford University Press, 2004
Course Objective:

- To make the learners familiar with various basic financial costing concepts.
- This course aims to convey sufficient knowledge for an adequate interpretation, analysis and use the information provided by financial accounting.

Course Outcome:

CO – 1: To be well versed with accounting concepts
CO – 2: To know about the different capital budgeting techniques for decision making purposes in accounting.
CO – 3: To analyze the different elements in a cost sheet.
CO – 4: To gain knowledge on different kinds of budgets and its preparation.
CO – 5: To clearly understand the ratio analysis techniques.
CO – 6: To gain knowledge on financial and operating leverages.
CO – 7: To be well versed in double entry system of accounting.
CO – 8: To gain a wide knowledge on various financial statement analyses.
CO – 9: To have diverse knowledge on working capital concepts.
CO – 10: To analyze on different capital budgeting decisions.

UNIT I  INTRODUCTION  12

UNIT II  RATIO ANALYSIS  12

UNIT III  CAPITAL BUDGETING  12
Capital budgeting – meaning –steps – different types of investment decisions - Different methods – Payback, Net Present Value, Internal rate of return, Profitability index, Average rate of return – Capital rationing
UNIT IV  COST ACCOUNTING
Cost accounting – Elements of costs, preparation of cost sheet – Standard costing and Variance analysis – material variance and labour variance

UNIT V  BUDGETS
Budgeting – Different types of budgeting – Cash budget – Flexible budget. Marginal costing – Cost Volume Profit analysis – Break Even analysis – Applications of marginal costing

Case Study:
Financial statement analysis
Break Even Analysis
Fund Flow statement
Ratio analysis
Capital budgeting problems 14

Text Books:

References:

Total – 60 H
Course Objective:

- The objective of this course is to develop a research orientation among the students and to acquaint them with fundamentals of research methods.
- To have a knowledge about research and how research is conducted.
- The data collection methods the sampling methods and the data analysis are introduced to do research objectively and systematically.
- To create awareness about the importance of research in all fields.

Course Outcome:

CO-1: To obtain knowledge on various kinds of research questions and research design
CO-2: To understand qualitative, quantitative and mixed methods research, as well as relevant ethical and philosophical consideration
CO-3: To design a good quantitative purpose statement and good quantitative research questions and hypotheses
CO-4: To familiar with good practices in conducting a qualitative interview and observation.
CO-5: To understand how to distinguish between a population and a sample and to determine the sample size
CO-6: To know the various types of quantitative sampling techniques and conditions to use.
CO-7: To understand the various steps involved in coding qualitative data.
CO-8: To get practical exposure on application of various statistical tools to test the hypothesis and drawing inferences
CO-9: To obtain knowledge on writing different types of reports
CO-10: To develop independent thinking for critically analysing research reports.

UNIT I INTRODUCTION

Data – Methods of data collection – Questionnaire design, interview, scheduling, and e-questionnaire design, guidelines for information collection questionnaire convention and pre-testing, panel research, major qualitative research techniques, scaling techniques – nominal, ordinal, ratio, interval scales.

UNIT III SAMPLING 12
Sampling techniques, probability and non-probability sampling – sample size determination for survey research, confidence in determining sample size – Hypothesis testing, procedures for pilot study – sampling error – sampling techniques for marketing – HR and other management areas.

UNIT IV DATA ANALYSIS 12
Data Analysis – Editing and coding of data univariate, bivariate and multivariate analysis chi square test – correlation and regression analysis – ANOVA – elementary concepts of factor and cluster analysis – use of MS excel, SPSS in data analysis

UNIT V REPORT 12

Total – 60 H

Text Book:

References:
Course Objective:
- This course is designed to develop business communication skills of students by improving their speaking, listening and writing skills.
- The course is activity oriented and provides exposure to real world communication by presenting various real world business communication challenges in class-room structure.

Course Outcome:

CO1 - To understand the basics of communication and its process, elements and importance.
CO2 – To learn the various barriers in the communication.
CO3 – To learn the listening skills and the characteristics of good and poor listeners.
CO4 – To know the various types of listening, its approaches and barriers.
CO5 - To know the effectiveness of oral communication and its application in group presentation.
CO6 – To develop the presentation skills and learning to organize and structuring a presentation using visual aids.
CO7 – To Know the importance, techniques & types of reading and its factors.
CO8 – To learn the skills of writing business correspondence, various qualities and parts.
CO9 – To learn the art of report preparation and writing various types of letters.
C10 – To know the various types of Non-Verbal skills and its application for effective communication.

UNIT I THEOR Y OF COMMUNICATION AND ORAL COMMUNICATION
Basics of communication, definitions of communication, human communication, communication situation, elements of communication, the communication process, business communication, importance of business communication, communication channels, barriers to effective communication: physical, physiological and psychological barriers, overcoming communication barriers.

UNIT II LISTENING
Hearing v/s listening, how to shift from “hearing” to “listening”?, a listener or not?, characteristics of good and poor listeners, causes of poor listening, listening as a business tool, listening for fact v/s listening for overall comprehension, kinds of listening, kinds of listening, approaches to listening, barriers to effective listening

UNIT III EFFECTIVE ORAL COMMUNICATION 12
Effective oral communication, interviewing, negotiation, communication in groups, presentations, types of presentations, audience analysis, formulating core statements, organizing and structuring a presentation, supporting the idea, visual aids, selecting the right medium, non-verbal dimensions of a presentation

UNIT IV WRITTEN COMMUNICATION AND NONVERBAL COMMUNICATION 12
Reading, reading as a process of decoding messages, importance of reading, types of reading, reading techniques - SQ3R, KWL table and SARAS. Speed reading, factors that impact reading, factual comprehension and inferential comprehension, business correspondence, types of letters, concept of business correspondence, importance of business correspondence, qualities of a business letter, parts of a business letter, 7Cs of business correspondence, business correspondence- the myth. 20

UNIT V BUSINESS CORRESPONDENCE 12

Text books:


References:


Course outcomes:

Co-1: To understand the basic concepts and applications of Database management

Co-2: To define the terminology, features, classifications, and characteristics embodied in database systems.

Co-3: To analyze an information storage problem and derive an information model expressed in the form of an entity relation diagram and other optional analysis forms, such as a data dictionary.

Co-4: To learn the basics of SQL and construct queries using SQL.

Co-5: To understand the query evaluation techniques and query optimization

Co-6: To design and develop the database application systems

Co-7: To be familiar with basic database storage structures and access techniques.

Co-8: To demonstrate an understanding of the relational data model.

Co-9: To formulate using SQL solutions to a broad range of query and data update problems.

Co-10: To use an SQL interface of a multi-user relational DBMS package to create, secure, populate, maintain, and query a database.

LIST OF EXPERIMENTS

1. DDL and DML Commands.
2. Join Queries.
3. Views and Set operations.
4. Built in functions.
5. Nested Queries.
6. Triggers.
7. Aggregate Functions.
8. Roles and Privileges.
9. Cursors.
10. PL/SQL programs.
11. PL/SQL cursor programs.
12. Front end tools – Mini Project.
Course Objective:

- The Objectives of the course is to acquaint the student with the applications of Operations Research to business and industry and help them to grasp the significance of analytical techniques in decision making.
- Students will be tested on the application of Operations Research to business related problems.

Course Outcomes:

- CO-1: Apply research techniques in quantitative and qualitative aspects.
- CO-2: Schedule the projects and find the early ways of finishing it.
- CO-3: Develop simulation models.
- CO-4: Minimize the resource allocation for project.
- CO-5: Maximize the productivity with help of least cost techniques.
- CO-6: Minimize the waiting hours of simultaneous projects undertaken.
- CO-7: Sequence and priorities the daily activities of a project.
- CO-8: Build the best fit route of transportation for carrying schedule of activities.
- CO-9: Graphically locate the optimum peak point in completing the project.
- CO-10: Apply the operations techniques in reality to market scenario

UNIT I  INTRODUCTION  12
Origin, Nature, Definition, Managerial applications & Limitations of OR. Linear programming – Formulation - Graphical & Simplex Method.

Unit II  TRANSPORTATION MODEL  12
Transportation Model - Initial Solution - NW Corner Rule, Least Cost Method, Vogel’s Approximation method - Assignment Problem - Sequencing Problem

Unit III  ANALYSIS  12
PERT & CPM – Project scheduling by PERT/CPM – Cost considerations in PERT/CPM.

Unit IV  THEORY & PRACTICE  12

Unit V QUEUING THEORY 12
Queuing Theory – Models – Simple Problem – Introduction to simulation
Case study: Unit II – Optimum Solution in Transportation and Assignment problem

Total – 60 H

Text Books:
1. Singh &Kumar,”OperationResearch”UDH Publisher,2013

References:
Course Objective: To understand the importance of econometrics with statistical concepts, regression analysis, time series and forecasting

Course Outcome:

Co-1: An integration of economics with statistics and mathematics for the purpose of framing economic policies, empirical studies and building economic models for economic development and growth as well as to provide solutions for major economic problems such as business crises, inflation, deflation etc.,

Co-2: To understand the basis of econometrics

Co-3: To know the anatomy of basic econometric models

Co-4: To understand the role of econometrics in policy framing

Co-5: To construct econometric models for estimating future sales

Co-6: To prepare case study using econometric methodology in order to evaluate Government policies

Co-7: To understand the basis of probability and statistics

Co-8: To know how to construct ANOVA table

Co-9: To conduct research surveys through multiple regression and multiple correlation

Co-10: Proving the relevance of the estimator through econometric models – OLS and BLUE

INTRODUCTION 12H

Historical perspective of Econometrics – Econometrics – Importance of Econometrics – Types of Econometrics – Methodology of Econometrics

BASIC STATISTICAL CONCEPT 12H


REGRESSION ANALYSIS 12H

Historical origin of the term regression – The modern interpretation of regression – Statistical versus deterministic relationships – Regression versus causation – Regression versus correlation – Two Variables Regression analysis

TIME SERIES 12H


ECONOMETRIC FORECASTING 12H

Forecasting with moving averages, linear trend, exponential trend – Forecasting with linear regression – Classical time series decomposition – Measures of forecast performance: Mean square error and root
mean square error

Total: 60 h

TEXT BOOKS:

REFERENCE BOOKS:
Course Objective:

- This course will cover all aspects of creating spreadsheet, performing calculations, formatting, some very widely used formulas.
- It will enable the students to create, build models and customize graphs, develop advanced solutions on the worksheet in the areas of marketing, finance, statistics, production and human resource and to assemble the proper Excel tools.

Course Outcomes:

- CO1 - Understand the basic features of Excel spreadsheet functions.
- CO2 - Analyse and provide optimal solutions for the financial problems related to firms’ cash flows, operations, and financial leverage.
- CO3 - Understand the basic features of Spread sheets.
- CO4 - Analyse and assess the fair values of various securities including stocks and bonds
- CO5 - Understand the pricing tools for European and American options, including Black-Scholes option formula and binomial trees.
- CO6 - Understand the basic features of the foreign exchange markets and develop basic knowledge in relevant analysis
- CO7 - Create MS Excel based financial models.
- CO8 - Use the advanced tools of Excel.
- CO9 - Record and build Excel Macros for implementing advanced functionalities in Excel.
- CO10 - Carry out financial analysis, forecasting, etc.

UNIT –I INTRODUCTION

Module: Introduction to Spreadsheet Modeling – Formulas/Formatting/Printing/Functions

Cell references, Lookuptables, Linking disparate workbooks, Dynamic linking, updating links, data validation, Goal seek, Pivot table, Sorting, Charting and filtering and protecting spreadsheets.

UNIT – II SPREADSHEET MODELLING IN SALES AND MARKETING

New product decision making – Sales and marketing data analysis.
UNIT – III SPREADSHEET MODELLING IN FINANCE

Forecasting financial statements—
Capital budgeting decisions, Bond valuation, Stock valuation, Breakeven analysis, Budgeting, Ratio analysis, Sensitivity analysis, Simulation analysis, Portfolio construction and Working capital.

UNIT – IV SPREADSHEET MODELLING IN STATISTICS

Measures of central tendency, t test, ANOVA, Correlation, Regression and Time series analysis.

UNIT – V SPREADSHEET MODELLING IN PRODUCTION AND HUMAN RESOURCE

ABC analysis, Economic order quantity, Production budget—Employee and payroll decision making.
TEXTBOOKS:

REFERENCES:

Course Objective:
- Business Analytics is a set of techniques and processes that can be used to analyze data to improve business performance through fact-based decision-making.
- The objective of this subject is to introduce the Business Intelligence methods that support the decision process in business operations.

UNIT I  INTRODUCTION  12
Business Intelligence: definition, concept and need for Business Intelligence, Case studies BI Basics: Data, information and knowledge, Role of Mathematical models

UNIT II ANALYTICS STRATEGY  12
Business Analytics at the strategic level: Strategy and BA, Link between strategy and Business Analytics, BA supporting strategy at functional level, dialogue between strategy and BA functions, information as strategic resource.

UNIT III  DATA MINING  12
Business Analytics at Analytical level: Statistical data mining, descriptive Statistical methods, lists, reports, automated reports, hypothesis driven methods, data mining with target variables, cluster analysis, Discriminate analysis, logistic regression, principal component analysis.

UNIT IV  DATA WAREHOUSING  12
Business Analytics at Data Warehouse Level, Designing physical database, Deploying and supporting DW/BI system

UNIT V  BUSINESS INTELLIGENCE  12
Business Intelligence Architectures: Cycle of Business Intelligence Analysis, Development of Business Intelligence System, spread sheets, concept of dashboard, CLAP, SQA, decision
engineering. BI Tools: Concept of dashboard. BI Applications in different domains- CRM, HR, Production

Total: 60 H

Text Book:

References:
1. Olivia Parr Rud, Business Intelligence Success Factors Tools for aligning your business in the global economy, John Wiley and Sons, 2009
Course Objective:
The objective of this course is to understand the concept and principles of the Project Management.
The course is to understand the tools and technique for identification, analysis and implementation of Project Management.

Course Outcomes
- To understand the business case for a project, the scope and constraints involved in a specific opportunity.
- To be able to function in a project management environment successfully.
- To be able to apply your skills immediately to the efficiency of the business operation.
- To describe a project life cycle and skillfully map each stage in the cycle
- To identify the resources needed for each stage, including involved stakeholders, tools and supplementary materials
- To describe the time needed to successfully complete a project, considering factors such as task dependencies and task lengths
- To provide internal stakeholders with information regarding project costs by considering factors such as estimated cost, variances and profits.

UNIT I PROJECT MANAGEMENT 12

UNIT II PROJECT IDENTIFICATION & FORMULATION 12

UNIT III FINANCIAL ANALYSIS & APPRAISAL 12
Financial analysis – cash flows for project appraisal- Investment evaluation using capital budgeting techniques - net present value, profitability index internal rate of return, payback period, accounting rate of return – Cost Management

UNIT IV ANALYSIS 12

UNIT V IMPLEMENTATION, MONITORING & CONTROL 12
Organization systems for project implementation – Coordination and Control – Project Management Software.

Text Books:

References:
16CMBN25  DATA CLEANING, NORMALIZATION 4 0 0 3
AND DATA MINING

Course Objective:

- This course helps to know how to derive meaning form huge volume of data and information. Understand and interpret a business objective, and translate the business objective to business intelligence and data mining objectives.
- Identify possible risks and limitations of a data set in achieving business objectives.
- Apply the appropriate business intelligence and data mining techniques to match a business objective. Present results to stakeholders in terms of the business objectives set, and how the information learned can be used to add value to the business.
- Work through all stages of a data mining methodology.

Course Outcome:

Co 1: Design and implement OLTP, OLAP and Warehouse concepts.
Co 2: Design and develop Data Warehouse using Various Schemas & Dimensional modelling.
Co 3: Use the ETL concepts, tools and techniques to perform
Co 4: Extraction, Transformation, and Loading of data.
Co 5: Report the usable data by using various reporting concepts, techniques/tools, and use charts, tables for reporting in BI.
Co 6: Use Analytics concepts like data mining, Exploratory and statistical techniques for predictive analysis in Business Intelligence.
Co 7: To present survey on different learning, classification and data mining foundations.
Co 8: To solve problems for multi-core or distributed, concurrent/Parallel environments.

Unit – I  INTRODUCTION

Data mining, Text mining, Web mining, Spatial mining, Process mining, BI process- Private and Public intelligence, Strategic assessment of implementing

Unit - II  DATA WAREHOUSING

Data ware house – characteristics and view - OLTP and OLAP - Design and development of data warehouse, Meta data models, Extract/ Transform / Load (ETL) design
Unit –III DATA MINING TOOLS, METHODS AND TECHNIQUES  
12H
Regression and correlation; Classification- Decision trees; clustering –Neural networks; Market basket analysis- Association rules-Genetic algorithms and link analysis, Support Vector Machine, Ant Colony Optimization

Unit - IV MODERN INFORMATION TECHNOLOGY & ITS BUSINESS OPPORTUNITIES  
12H
Business intelligence software, BI on web, Ethical and legal limits, Industrial espionage, modern techniques of crypto analysis, managing and organizing for an effective BI Team

Unit – V BI AND DATA MINING APPLICATIONS  
12H
Applications in various sectors – Retailing, CRM, Banking, Stock Pricing, Production, Crime, Genetics, Medical, Pharmaceutical

TOTAL – 60 H

TEXT BOOKS:
1. Jaiwei Ham and Micheline Kamber, Data Mining concepts and techniques, Kauffmann Publishers 2006
2. Efraim Turban, Ramesh Sharda, Jay E. Aronson and David King, Business Intelligence, Prentice Hall, 2008.
**Course Outcome:**

CO – 1: To contribute to organizations of all types and sizes by managing critical short-term projects.

CO – 2: To provide creative solutions to key challenges.

CO – 3: To design marketing strategies.

CO – 4: To leverage business analytics with key strategic decision makers.

CO – 5: To lay the foundation for strong relationships and subsequent job offers.

CO – 6: To provide a variety of ways to engage in experiential learning.

CO – 7: To apply the knowledge and skills acquired in the classroom to a professional context.

CO – 8: To understand what skills are transferable to new contexts.

CO – 9: To successfully reflect on the quality of the contribution interns have made to the organization.

CO – 10: To refine and reassess interns’ own career goals as a result of the experience.
Course Objective: The course is to understand the management and administration, functions of management, formal and informal organization, staffing, creativity and innovation, process of communication.

Course Outcomes

CO -1: Design, device, and query relational databases for operative data.
CO - 2: Design, implement, populate and query data warehouses for informational data.
CO - 3: To integrate very large data sets to make business decisions.
CO - 4: Evaluate the use of data from acquisition through cleansing, warehousing, analytics, and visualization to the ultimate business decision.
CO - 5: Evaluate the key concepts of business analytics.
CO - 6: Determine when to implement relational versus document oriented database structures.
CO - 7: Outline the relationship of the business analytics process within the organisation’s decision-making process.
CO - 8: Examine and apply appropriate business analytic techniques and methods.
CO - 9: Execute real-time analytical methods on streaming datasets to react quickly to customer needs.
CO - 10: To critically analyse the predictive analysis methods.

Unit I
Introduction to Descriptive analytics, Descriptive Statistics, Probability Distributions, Statistics through hypothesis tests, Permutation & Randomization Test

Unit II
Regression, ANOVA (Analysis of Variance), Machine Learning Introduction and Concepts-Differentiating algorithmic and model based frameworks, Regression: Ordinary Least Squares, Ridge Regression, Lasso Regression, K Nearest Neighbours, Regression & Classification
Unit III
Supervised Learning with Regression and Classification techniques- Bias-Variance Dichotomy, Model Validation Approaches, Logistic Regression, Linear Discriminant Analysis, Quadratic Discriminant Analysis, Regression and Classification Trees, Support Vector Machines, Ensemble Methods: Random Forest, Neural Networks, Deep learning

Unit IV
Unsupervised Learning and Challenges for Big Data Analytics- Clustering, Associative Rule Mining, Challenges for big data analytics,

Unit V
Prescriptive analytics Creating data for analytics through designed experiments, creating data for analytics through Active learning, creating data for analytics through Reinforcement learning, Graph Visualization, Data Summaries, Model Checking & Comparison

References:
3. Bekkerman et al. Scaling up Machine Learning
COURSE OBJECTIVES:

- Latest software tools for managing financial activities in the organizations.
- To improve the financial processes in your company thereby increasing value-addition.
- About methods and techniques for smooth financial accounting and controlling functions.
- To track and monitor data of different cost and profit centers situated across the globe from one single platform.
- (FI) module provides integrated, on-line, real-time functionality for processing, recording and maintaining the financial accounting transactions of the business for external reporting purposes.
- CO Application Module provides integrated functionality for the management and reporting of cost and revenue information used for internal business decision making.

COURSE OUTCOMES:

- CO1 To learn about SAP – FI CO enterprise structure
- CO2 To understand Financial Accounting and Global settings
- CO3 To understand General ledger accounting
- CO4 Understand asset accounting, cash journal, and closing of operations
- CO5 Financial Accounting and Controlling is inter-related and helps one to manage a better business process towards better finance accounting and data management.
- CO6 SAP FICO module towards better management of finance accounting and reporting in enterprises.
- CO7 to integrate different modules of ERP for bringing financial automation by getting complete information on Accounts Receivable, Accounts Payable, General Ledger, Tax, etc.
- CO8 to integrate FICO module with other ERP modules including, FI-MM, FI-SD, FI-HR
- CO9 SAP FICO is the important module of ERP and both FI & CO modules stores the financial transactions data.
To gain knowledge on aspects such as Financial Statements for external reporting

Unit I
General Ledger Accounting, General Ledger Master, General Ledger Postings, General Ledger Parking and postings, Reversals, Automatic Clearing, Recurring Entries, Taxes, General Ledger Reports Cash and Bank Accounting, Cash Journals, Cheque Management, House bank Masters, Bank Reconciliations

Unit II
Accounts Payable, Vendor Master, Vendor Invoice Posting, Vendor Credit Memo, Vendor Down Payment, Vendor Down Payment Clearing, Vendor Outgoing payment, Partial payment against an invoice, Residual Payment, Automatic Payment Run, Withholding Tax (TDS), Vendor Reports Accounts Receivable, Customer Master, Customer Invoice Posting, Customer Credit Memo, Customer Down Payment, Customer Down Payment Clearing, Customer Incoming Payment, Partial payment against an invoice, Residual Payment, Customer Reports

Unit III
Asset Accounting, Asset Master, Asset Procurement (Direct), Asset Procurement (through MM), Asset Retirements, Asset Scrapping, Depreciation Run SAP FI Consultant Level: Define a Company, Define a Company Code, Assign Company Code to Company, Define Chart of Accounts, Assign Company Code to Chart of Accounts, Setup Account Groups and their Number Ranges, Assign Fiscal Year Variant to Company Code, Assign Posting Period Variant to Company Code, Document Number Ranges for the Company Code, Assign Field Status Variant to Company Code, Define Employee Tolerance, Define Retained Earnings Account, Document types, Posting Keys, Validation and substitution, General Ledger Account Introduction, Reconciliation Accounts, Expense and Revenue GL Accounts, Account Assignment Model, Setup tolerance for customers and vendors, Customer Account Groups, Create number ranges for customer accounts, Assign number ranges to customer groups, Customer Master Record, Create Vendor Groups, Create number ranges for vendor accounts, Assign number ranges to vendor groups, Create Vendor Master, Create underpayment account and Over payment accounts, Create cash discount account, Payment within tolerance (incoming), Payment within tolerance (outgoing)

Unit IV

**Unit V**
Controlling Area, Maintain Controlling Area, Assignment of Controlling Area, Activate Components/Control Indicators, Number Range, Maintain Versions Master Records, Cost Element, Cost Center, Profit Center Cost Element, Primary Cost Elements (Manual), Secondary Cost Elements (Manual), Automatic Creation of Primary and Secondary Elements Cost Center Accounting, Define Standard Hierarchy, Create Cost Center, Create Cost Center Group Transaction – Based posting, Number assignment for CO documents, Account assignment logic, Automatic and default account assignment, Transaction-based posting in CO Profit Center Accounting, Define Standard Hierarchy, Create Profit Center, Create Profit Center Group, Define Dummy Profit Center Repost CO Line Items (Using FI Document)

**References:**

2. Narayanan, SAP FI Financial Accounting, 2009
COURSE OBJECTIVES:

- Maintain the key master data in Sales and Distribution, and name and define the required business structures.
- Work with the various documents in Sales and Distribution. Describe the points of contact from Sales and Distribution to the materials management, production (for example, make-to-order) and financial accounting areas.
- Perform analyses for Sales and Distribution processes.
- Integrate sales in the Sales and Distribution process chain. Configure Customizing so that it represents your specific sales requirements.
- Describe the position of distribution within the supply chain.
- Execute the different functions within distribution processing.
- Adapt the system to suit your distribution processing requirements.

COURSE OUTCOMES:

CO1 Learn about the main business processes in sales processing.

CO2 Execute the most important functions in the process chain from the pre sales phase to the incoming payment in the system.

CO3 Creation of org structures in Sales area and its corresponding units.
CO4 Gain an extensive overview of the sales and distribution areas as part of the SD component in the SAP system.

CO5 Obtain a more detailed insight into sales and distribution functions using selected examples.

CO6 Build up the knowledge needed to implement these functions and be able to use them.

CO7 Acquire knowledge of how to adapt the system using Customizing settings to meet your own specific requirements in sales and distribution.

CO8 Hands on material determination and product selection and material Listing and material Exclusion.

CO9 Hands on free goods process. Condition technique, free goods master data, free goods calculation rule.

CO10 Creation and exploring them to complete the process in agreements.

**Unit I**
OVERVIEW OF SD MODULE, Organizational Structure, Reaching IMG, SALES ORGANIZATION SETUP, Creating Sales Organization, Creating Distribution Channel, Creating Division.

**Unit II**
ASSIGNING OF ORGANIZATIONAL UNITS, Assigning Sales Organization with Company code, Assigning Distribution Channel to Sales Organization, Assigning Division to Sales Organization.

**Unit III**
CREATING MASTER DATA, Introduction to Master data, Preparing the system for Master Data Creation - Creating Common Distribution Channel - Creating Common Division, Customer Master Data – Introduction, Creating Customer Master

**Unit IV**

SALES ORDER CREATION, Definition and Prerequisites, Preparing the system Combining Organization Units, Assigning Sales Document to Sales Area, Sales Order Creation

**Unit V**

Viewing Header Details, Viewing Item Details, Viewing Schedule Lines

**References:**

3. K. A. Samad, *SAP SD for Beginners Vol.1*, Shroff; First edition, 2005
COURSE OBJECTIVES:

- To learn everything working with SAP Purchasing and Material Master, which is an integral part of Warehouse Management.
- To gain a complete understanding of SAP MM and also has acquired the ability to apply these skills and knowledge in a practical manner.
- To gain knowledge on wide range of topics such as consumption-based planning, purchasing, vendor evaluation and invoice verification.
- This course also focuses on inventory, production planning, and warehouse management.

COURSE OUTCOMES:

CO1 To learn about ERP Packages, Functions and Objectives of materials management
CO2 To learn how to create, release and send the request for quotation (RFQ) to selected vendors.
CO3 Company, Company code, Controlling Area, Plant, Storage Location, Purchase Organization,
    Purchasing group
CO4 Creation of Master Data and Source determination and list.
CO5 To know about document types for purchasing documents.
CO6 To know the release procedure for purchasing documents.
CO7 Pricing Procedure, External Service Management, Inventory Management
CO8 Physical Inventory, Special Stocks and Special Procurement Types, Valuation and Account Determination.
CO9 Offers complete knowledge of Warehouse and Stock Management & Procurement Supply Chain Method implementation using SAP ERP.
CO10 Integration Concepts- integration of MM with SD, Stock Transport Order (STO), Intra Company
    Stock Transfer, Inter Company or Cross Company Stock Transfer, Integration of MM with PP
Unit I

Unit II
Purchasing Details & Optimization, Introduction to Purchasing Details, Outline Agreements, Source Determination, Optimized Purchasing Inventory Management/ Physical Management, Inventory Management: Overview, Goods Receipts, Reservations and Goods Issues, Stock Transfers and Transfer Postings, Consignment, Subcontracting, Physical Inventory Management, Cycle Counting, Inventory Sampling

Unit III
Valuation and Account Determination, Introduction to Material Valuation, Valuation and Account Assignment, Material Price Changes, Special Inventory Management Features Invoice verification, Introduction to Invoice Verification, Basic Invoice Verification Procedure, Taxes, Cash Discounts, and Foreign Currency

Unit IV
Variances and Blocking Reasons, Invoice Reduction, Variances without Reference to an Item, Invoices for POs with Account Assignment, Delivery Costs, Subsequent Debits/Credits, Credit Memos and Reversals, Invoice Verification in the Background, ERS and Invoicing Plans, Releasing Blocked Invoices, GR/IR Account Maintenance, Conventional Invoice Verification, Customizing for Invoice Verification, Conclusion

Unit V

References:
2. Rajesh Vyas, Sap Mm: Complete Reference to Implementation / Customization, Createspace, 2010

COURSE OBJECTIVES

- Understand the business processes of SAP HCM
- Understand and maintain employee data for an enterprise
- Implement infotypes for supporting transaction processing in SAP
- Define time recording processes
- Outline payroll processes
- Execute configurations and processes for organization management
- Implement authorizations and key elements of configuring authentications in HCM module
- Support and manage SAP HCM implementation procedure

COURSE OUTCOMES

CO1 To learn SAP HR sub-modules and its benefits and three tier
CO2 To understand system navigation and implementation road map.
CO3 To understand Organizational management and structure, relationships and infotypes
CO4 To create HR master date, Personnel structure assignment and HR infotypes.
CO5 To understand the different types of HR info type groups
CO6 To learn about customizing user procedures
CO7 To learn about employee sub group, Pay scale type
CO8 To learn about recruitment infotypes, Training and Event Management Posting to Financial Accounting
CO9 To learn about maintaining employee data for business event
C10 To learn about transferring of applicant data to Personnel Administration

Unit I
Introduction ERP & SAP, Overview on SAP HR sub modules, System Landscape – Three tier Architecture, ASAP Methodology, System navigation, Implementation road map

Unit II
Organization Management, Introduction about Organizational Management, Structures in SAPHCM, Objects, Relationships, Creation of Organizational structure Methods, Expert mode, Simple maintenance, Organizational and Staffing, Info types in OM, Plan version, Evaluation
path, Reports Personnel Administration:Enterprise structure Assignment, Company, Company code, Personnel area, Personnel sub area, Personnel structure Assignment, Employee group, Employee sub group, Payroll accounting area, Integration settings with OM & PA, HR Master Data, Accounting global settings, Period Parameters, Fiscal year setting, Posting periods, Employee Attributes, Info types in PA, Features, Info type Ranges in HR, Number Ranges for Employee personnel numbers, Reports

Unit III
Customizing user Procedures, Configuration of Personnel Actions – Info group – Action menu, Dynamic Actions, Administration Group, Payroll Area, Control record, Period Parameters, Date Modifiers, Payroll Period, Pay scale structure, Pay scale area, Pay scale type, Pay scale groups & Levels, Employee sub group, Grouping for CAP Time Management: Time Management Info types

Unit IV
Pay scale type, Pay scale groups & Levels, Employee sub group grouping for CAP, Creation of Wage types, Primary wage types, Technical / Secondary wage types, Customer wage types, Indirect evaluation mode, Wage type characteristics, Wage type models, Payments & Deductions, Garnishments, Factoring, Off – Cycle payroll, Posting to Financial Accounting (Symbolic Accounts)

Unit V
Recruitment, Info types, Work force requirement & Advertisement, Applicant Administration, Applicant selection, Applicant data, Transferring of applicant data to Personnel Administration Training & Event Management, Info types, Training & event interdiction, Training requirement, Defining cost of Training, Location for the Training or business event, Business event group, Business event type, Maintaining employee data for business event type Personnel Development, Planning, Setting up of Qualifications catalog, Setting up of rating scales, Appraisals, Old Appraisals, Appraisal catalog, Appraisal system, Employee Appraisal

References:


Course Objective:

1. To learn the basic concepts for modeling the stochastic process. To study the various aspects of stochastic systems modeling and conducting experiments with those models.

2. To understand the appropriate and relevant, fundamental and applied mathematical knowledge, methodologies and modern computational tools.

3. To understand the study of systems evolve randomly over time and to understand the behavior of these systems, especially in long run.

Course Outcomes:

Students will be able

1. To understand the basic probability axioms and rules and the moments of continuous random variables and discrete variables.

2. To derive the probability density function of transformation of random variables and use these techniques to generate data from various distribution.

3. To understand the secrete time Markov chains and methods of finding the equilibrium probability distributions

4. To understand how to calculate probabilities of absorption and expected hitting times for discrete time Markov chains with absorbing states.

5. To demonstrate the specific applications to Poisson processes

6. To understand the concept of random processes and determine covariance and spectral density of stationary random processes.

7. To devise solutions with probability models for continuous time Markov chains

8. To define probability models, concept and properties of Markov processes and Markov chains.
9. To understand the processes involves renewable theory
10. To understand the limit theorem and processes involve in renewal reward.

UNIT I PROBABILITY THEORY

Introduction – Probabilitiespace – Independence and dependence – Conditional Probability and
Bayes formula – Random variables – Expectation, variance and covariance.

UNIT II DISCRETE-TIME MARKOV CHAIN

Classification of states: transient and recurrent – Chapman-Kolmogorov equations – Transient and
Steady-state distributions – Time reversibility.

UNIT III POISSON PROCESS

Poisson process: definition and properties – TheM/G/1 busy period – Nonhomogeneous Poisson
process – TheMt/G/∞ queue – Compound Poisson process.

UNIT IV CONTINUOUS-TIME MARKOV CHAIN

Computation of transient distributions.

UNIT V RENEWAL THEORY

Renewal functions and renewal equations – Limittheorems – Renewal reward processes –
Regenerative process.

Total: 60 h

TEXT BOOKS:

1. Mark A. Pinsky and Samuel Karlin An Introduction to Stochastic Modeling, Fourth Edition

REFERENCE BOOKS:

Course Objective:

1. To study and develop the concepts, techniques, tools for modeling and simulation models.

2. To study the various aspects of discrete and stochastic systems modeling and conducting the experiments with the simulation models.

3. To understand the concept in modeling and simulation

Course outcomes:

Students will be able

1. To define basic concepts in modeling and simulation

2. To understand the basic probability axioms and rules and the moments of continuous random variables and discrete variables.

3. To generate and test random number variates and apply them to develop simulation models.

4. To classify models and understand the methodology of model building.

5. To understand the different methods of random number generation.

6. To have a clear understanding of principle and techniques for generating random numbers.

7. To construct a model for a given set of data and motivate its validity

8. To analyze output data produced by a model and test validity of the model.

9. To classify various simulation models and give practical examples for each category

10. To verify and validate the simulation models

UNIT 1 INTRODUCTION

Introduction to simulation – Discrete and Continuous simulation – Simulation models – Types
of Models – Steps in Simulation study.

UNIT II RANDOM NUMBERS


UNIT III ANALYSIS: INPUT AND OUTPUT MODELING


UNIT IV ANALYSIS: VERIFICATION AND VALIDATION

Model Building – Verification of Simulation Models – Validation of Simulation Models.

UNIT V LANGUAGES AND APPLICATIONS

Simulation Languages and Simulators – Simulation of Queuing system – Simulation of Inventory system – Simulation of Manufacturing.

Total: 60 h

TEXT BOOKS:


REFERENCE BOOKS:


Course Objective:

- To understand how big data principles implemented in healthcare
- To understand the data processing for healthcare analytics
- To describe the management principles for implementation of analytics in the healthcare industry
- To understand the statistical principles for healthcare industry

Course outcome:

CO – 1: To gain knowledge on the concepts of health care management.
CO – 2: To understand the implementation of analytics for health care.
CO – 3: To understand the types of data analytics.
CO – 4: To understand the data structures for healthcare.
CO – 5: To gain knowledge on the concepts of Health Care Management.
CO – 6: To understand the Training & Education in health care industry.
CO – 7: To understand the Attitude among Hospital Service Providers.
CO – 8: To understand the Motivation among Hospital Service Providers.
CO – 9: To gain knowledge on the statistical concepts for healthcare data scientists.
CO – 10: To estimate the data using the various statistical tools.

UNIT 1: Introduction and Strategic Importance of fostering a data-driven culture in healthcare organizations

Introduction – Health Care Management – Evolution of Health Care Systems in India & Abroad
- - Evolution of Present Health Care Services in India - Business value of data to a healthcare organization- -Data governance and what it means to a healthcare organization-Importance of fostering a data-driven culture in a healthcare organization - skill sets should a data analytics team must have.

UNIT 2: Health data processing and reporting techniques

The Data Life Cycle- Healthcare data sources and data structures- Types of data analytics techniques and their strengths and weaknesses - Measuring quality and safety of caring and Developing Key Performance Indicators.

UNIT 3: Health care management
Introduction to Health Care Management- Importance-Features-Success in Team Work in Health care management– In-service Training & Education in health care industry- recent trends in health care industry.

UNIT 4: Attitude and Motivation among Hospital service providers

Development of Attitude & Motivation among Hospital Service Providers – Awareness of Health Insurance – Role of Hospital Administrator.

UNIT 5 Health data summary and visualization techniques

Statistics – the basics all healthcare data scientists should know—Data summary techniques (for measurement and categorical data)—Visualization techniques (for measurement and categorical data)—Interactive visualization techniques—Common misuses of data visualization—Techniques for Statistical Inference – the 95% Confidence Interval—General principles involving test of statistical significance – Null Hypothesis, p-value and interpreting test outcomes.

Text Books:


Reference Books:

Course Objective:

- To understand how big data principles implemented in Social media & Web
- To understand the data processing for Social media & Web analytics
- To describe the different metrics for Social media & Web analytics
- To understand the application for Social media & Web analytics

Course outcome:

CO – 1: To recognize on the fundamental concepts of Social media.
CO – 2: To recognize on the fundamental concepts of Web.
CO – 3: To understand the implementation framework of web analytics.
CO – 4: To explain the experimental methods in web data analytics.
CO – 5: To recognize the types of data for Social media & Web analytics.
CO – 6: To design the experiments for Social media & Web analytics.
CO – 7: To identify the different metrics for Social media & Web analytics.
CO – 8: To select the appropriate metrics for Social media & Web analytics.
CO – 9: To investigate the various tools for Social media analytics.
CO – 10: To estimate the data using the Web analytical tools.

UNIT I: 12h

UNIT II: 12h
Web analytics- Web analytics 2.0 framework (clickstream, multiple outcomes analysis, experimentation and testing, voice of customer, competitive intelligence, Insights)- Experimental methods in web data analytics - Air France Internet Marketing Case Study - Econometric modeling of search engine ads

UNIT III: 12h
Data (Structured data, unstructured data, metadata, Big Data and Linked Data) - Lab testing and experiment design (selecting participants, within-subjects or between subjects study,
counterbalancing, independent and dependent variable; A/B testing, multivariate testing, controlled experiments)

UNIT IV: 12h
Web metrics and web analytics - PULSE metrics (Page views, Uptime, Latency, Seven-day active users) on business and technical issues; -HEART metrics (Happiness, Engagement, Adoption, Retention, and Task success) on user behaviour issues; -On-site web analytics, off-site web analytics, the goal-signal-metric process

UNIT V: 12h
Social media analytics - Social media analytics (what and why) - Social media KPIs (reach and engagement) - Performing social media analytics (business goal, KPIs, data gathering, analysis, measure and feedback) 6. Data analysis language and tools
Cases and examples - User experience measurement cases - Web analytics cases 8. Group work and hands on practice - Usability study planning and testing; and data analysis using software tools (Google Analytics, Google Sites, R and Deducer)

Total – 60 h

TEXT BOOKS:

REFERENCE:
Course Objective:

- The objective of the course is partly to give an introduction to the software R and how to write elementary programs and partly to demonstrate how statistical models are implemented and applied.
- At the end of the course the student will be able to import, manage and structure data files.
- Write simple program scripts for data analysis produce illustrative data plots and carry out statistical tests.

Course Outcomes:

- CO1 - Recognise and make appropriate use of different types of data structures;
- CO2 - Use R to create sophisticated figures and graphs;
- CO3 - Identify and implement appropriate control structures to solve a particular programming problem; and
- CO4 - Design and write functions in R and implement simple iterative algorithms.
- CO5 - Participants will learn to apply structured thinking to unstructured problems
- CO6 - Participants will be able to categorize and understand various data types.
- CO7 - Participants will be able to convert imprecise business relevant problem statements to precise data analytic problems.
- CO8 - Participants will learn the importance of visualization in the data analytics solution process
- CO9 – Outlines the application of R in real world situations.
- CO10 – Distinguishes between SAS and R programming.

Unit 1 Introduction to the R language

- SAS versus R - R, S, and S-plus - Obtaining and managing R - Objects - types of objects, classes, creating and accessing objects - Arithmetic and matrix operations - Introduction to functions

Unit 2 Working with R
Reading and writing data - R libraries - Functions and R programming - the if statement - looping: for, repeat, while - writing functions - function arguments and options

**Unit 3 Graphics**

Basic plotting - Manipulating the plotting window - Advanced plotting using lattice library - Saving plots

**Unit 4 Standard statistical models in R**

Model formulae and model options - Output and extraction from fitted models - Models considered: Linear regression: `lm()` , Logistic regression: `glm()` , Linear mixed models: `lme()`

**Unit 5 Advanced R**


**Text Books:**


**References:**

3. An Introduction to R. Online manual at the R website at [http://cran.r-project.org/manuals.html](http://cran.r-project.org/manuals.html)
Course Objective:

- To understand the concepts, tools and techniques of HR Analytics that could be applied as resource management evidence based.
- To understand HR reports & to understand the decisions technologies.
- Recognize the fundamental strategic priorities of the business and learn how to provide enhanced decision support leveraging analytics.
- Develop a structured approach to apply judgment, and generate insight from data for enhanced decision making.

Course Outcomes:

- CO1 - It helps to analyse appropriate internal and external human resource metrics benchmarks and indicators.
- CO2 - Operate relational databases and make recommendations regarding the appropriate HRIS to meet organization’s human resource needs.
- CO3 - Employ appropriate software to record, maintain, retrieve and analyse human resources information (e.g., staffing, skills, performance ratings and compensation information).
- CO4 - Apply quantitative and qualitative analysis to understand trends and indicators in human resource data; understand and apply various statistical analysis methods.
- CO5 - Manage information technology to enhance the efficiency and effectiveness of human resource functions within the organization.
- CO6 - In employee engagement, to measure the outcomes driven by data profiling.
- CO7 - In identifying metrics that influence attrition, and modelling the data for lowering attrition.
- CO8 - In identifying the impact of L&D, through Evidence-based management, in enhancing employee performance.
- CO9 - In ranking employees for their career progression roadmap.
- CO10 – Identifies the data requirement and analysis.
UNIT I 12H

Introduction to HR Analytics:

UNIT II 12H

Creating business understanding for HR initiatives: Workforce segmentation and search for critical job roles; Statistical driver analysis – association and causation; Linking HR measures to business results; choosing the right measures for scorecards; Identifying and using key HR Metrics.

UNIT III 12H

Forecasting budget numbers for HR costs: Workforce planning including internal mobility and career pathing; training and development requirement forecasting and measuring the value and results of improvement initiatives; optimizing selection and promotion decisions.

UNIT IV 12H

Predictive modelling in HR: Employee retention and turnover; workforce productivity and performance; scenario planning.

UNIT V: 12h

Communicating with data and visuals: Data requirements; identifying data needs and gathering data; HR data quality, validity and consistency; Using historical data; Data exploration; Data visualization; Association between variables; Insights from reports; Root cause analysis of HR issues.

TOTAL – 60H

TEXT BOOK:


**REFERENCE:**

Course Objective:

• To provide foundational knowledge associated with the operations analytics
• To provide foundational knowledge associated with the supply chain analytics
• To describe the various tools and techniques for implementation of analytics based on the supply chain drivers such as location, logistics and inventory
• To describe the various techniques for analytics based on the Multi Attribute Decision Making (MADM) and risk
• To provide the applications of analytics in operations and supply chain

Course outcome:

CO – 1: To recognize on the fundamental concepts of location and layout.
CO – 2: To understand on the implementation of analytics in location and layout.
CO – 3: To understand the inventory techniques for analytics.
CO – 4: To analyze the inventory using aggregate production model
CO – 5: To identify the different network models.
CO – 6: To illustrate the transportation problems for analytics in network design.
CO – 7: To analyze the different dimensions using Analytic Hierarchy Process.
CO – 8: To analyze the different dimensions using Data Envelopment Analysis.
CO – 9: To identify the different types of analytics for operations and supply chain.
CO – 10: To explain the applications of analytics in operations and supply chain.

Unit I

Warehousing Decisions, Mathematical Programming Models, P-Median Methods, Guided LP Approach, Balmer – Wolfe Method, Greedy Drop Heuristics, Dynamic Location Models, Space Determination and Layout Methods

Unit II
Inventory Management, Inventory aggregation Models, Dynamic Lot sizing Methods, Multi-Echelon Inventory models, Aggregate Inventory system and LIMIT, Transportation Network Models, Notion of Graphs, Minimal Spanning Tree,

Unit III

Unit IV
Analytic Hierarchy Process, Data Envelopment Analysis, Risk Analysis in Supply Chain, Measuring transit risks, supply risks, delivering risks

Unit V
Risk pooling strategies, Fuzzy Logic and Techniques-Application in SCM

References

Course Objective:
- This course provides an introduction to both the theory and the practice of revenue management and pricing.
- Fundamentally, revenue management is an applied discipline; its value derives from the business results it achieves. At the same time, it has strong elements of an applied science and the technical elements of the subject deserve rigorous treatment.
- The plan of this course is to discuss both these practice and theory elements.

Course outcomes:

- CO1 - Understand strategic and tactic roles of pricing in relevant business contexts
- CO2 - Know how to model real-world pricing decision making processes
- CO3 - Provide business insights using data and analytics
- CO4 - Know how to implement pricing solutions
- CO5 - Know how to measure financial performance of pricing
- CO6 - Understand that a successful business requires adequate revenues and a positive operational cash flow to generate profits
- CO7 - Pinpoint potential customer segments, anticipate needs and wants of customers, understand consumer behavior and their how these affect the business potential
- CO8 - Identify capacity bottlenecks and make adjustments to the business accordingly
- CO9 - Be able to utilize Ecommerce to support sales and marketing
- CO10 - Recognize the strategic impact of revenues to the business, organize resources

UNIT I  Introduction:  12h

Introduction: Examples and simulations - The Revenue Management Process - Classification and introduction to the models, course plan The Theories of Pricing: Brief review of
microeconomic and marketing theories on consumer behavior and pricing - Product design, bundling and demand segmentation - Dynamic pricing policies

UNIT II Pricing policies and Revenue management model: 12
Pricing Policies in Action: Markdown policies and liquidations - Pricing with supply constraints - Customized pricing and e-commerce An Operational Model of Revenue Management: Stochastic Inventory Management and the Newsvendor Model - Single resource Revenue Management, expected marginal value to control sales – Overbooking

UNIT III Network Revenue Management: 12

UNIT IV Demand Forecasting and Data Analysis: 12
Demand Forecasting and Data Analysis: Data, sources, systems, automation - Time-series forecasting and perfect demand segmentation models - Estimation techniques - Unconstraining for unobservable no-purchases--concept and the EM technique Competitive Factors: Imperfect segmentation model: Discrete choice models - Customer management and strategic purchasing behavior - RM Process management (organizational issues)

UNIT V Industry Applications: 12
Industry Applications: Various case studies related to capacity management in airlines, hotels, car rentals, cruises. Industry implementations and practices New Directions in Revenue Management: Business Analytics - Applications in new industries: Event sales, casinos, Display advertising - Bundling and Revenue Management

Total – 60 H

Text Books:

References:
Course Objectives:
1. To understand business requirements and technical requirements, regarding software systems that implement many functions required by modern organizations.
2. Controlling process executions, business processes can be performed faster, more reliably and more economically.
3. Process technology can also be used to model processes that are executed within software systems.

Course Outcomes:
CO1: To understand and develop business models that support a company's strategic objectives
CO2: To understand the interdependence between financial and operational metrics used in value chain analysis to key decision makers.
CO3: To understand a decision tree can also be used to help build automated predictive models, which have applications in machine learning, data mining, and statistics.
CO4: To analyse the decision tree can also be created by building association rules, placing the target variable on the right.
CO5: To acquire an idea about the computational procedure of Dynamic Programming
CO6: To understand the basic concepts on which a problem is solved using dynamic programming.
CO7: To understand Information Technology (IT) operations to analyze, design, integrate, and manage information systems using information technology.
CO8: To understand the methods and tools to design, implement, test, document, and maintain a software system
CO9: To understand the Methods and tools for analyzing complex real world problems and devise software-based solutions
CO10: To analyse complex real world problems and devise efficient software based solutions.

UNIT 1. INTRODUCTION TO BUSINESS MODELING: 12h
Modeling – meaning and process, Certainty and uncertainty in models, importance of understanding data
before modeling, modeling with spreadsheet in simple decision situations. LINEAR
PROGRAMMING: Application of LPP in operations management, Formulation of LPP, simplex
method, duality, Sensitivity Analysis. Trans-shipment problems. Concept of Goal programming,
Goal programming model formulation. (Numericals Expected)

UNIT 2. DECISION TREES: 12h
Concept, Application of Decision Trees in operations management. (Numericals
Expected) SEQUENCING PROBLEMS: Concept, Application, n jobs – 2 machines, jobs - 3
machines, n jobs – m machines. Comparison of priority sequencing rules. (Numericals Expected)

UNIT 3. DYNAMIC PROGRAMMING: 12h
Conceptual Introduction to Dynamic programming. SIMULATION: Concept, Applications in
Operations management

UNIT 4. DESIGN OF EXPERIMENTS: 12h
Concept and Introduction, IT IN OPERATIONS: Importance of IT in operations, IT as a
competitive edge, Role of IT in – Design, Production Planning, Layout and Logistical
operations.

UNIT 5 SOFTWARES IN OPERATIONS: 12h
Introduction, characteristics and key (5) features of software’s for Project Scheduling, Logistics /
Supply chain management and Quality management. INTRODUCTION TO ERP SYSTEMS: Review of
DBMS and Transaction processing concepts - Business Processes and integration across
functions. Salient features of ERP systems offered by leading vendors, prerequisites and process
of implementation.

Books Recommended:-
3. Managerial Decisions Modeling with Spreadsheets – Bal Krishnan, Render, Stair, Jr. - Pearson
   Education.
8. Quantitative Analysis for Management – Render, Stair, Jr. – Pearson Education.
10. ERP Demystified- Eilon.
Course Objective:

- To create the knowledge of Legal perspective and its practices to improvise the business.
- To describe the nature and classes of contracts.
- To identify the elements needed to create a contract.
- To read, interpret contracts, and cases.
- To identify personal property and bailment.

Course Outcome:

- CO – 1: To create the knowledge of ethics legal perspective and its practices to improvise the business.
- CO – 2: To clearly understand basics elements of contracts, classifications of contract and how to breach and get remedies of the contract
- CO – 3: To figure out the differentiate Sale and agreement to sell -conditions and warranties
- CO – 4: To have a better comprehend of companies act which will helpful for the budding managers
- CO – 5: To know about the different type of negotiable instrument in practice
- CO – 6: To be well versed with the ethical procedure to be followed in decision making and project.
- CO – 7: To analyses the magnitude of morale and ethics towards business.
- CO – 8: To familiar conflict management in legal perspective and judicial system pertaining to labour management relations.
- CO – 9: To realize the current legislative framework covering employment relations in present scenario.
- CO – 10: To understand a perspective of labour problems and remedial measures in the country.
Unit -I: Law of Contracts: 12h

Unit -II: Sale of Goods Act: 12h

Unit -III: Companies Act : 12h

Unit -IV: Introduction: 12h
Why human beings are ethical, why they are not ? Moral development in humans, theories, concepts . Definitions, theories of ethics and ethics projects . A Decision Making Model: Ethics as Making decisions and choices. Decision – making frameworks

Unit-V: Conflicts and Ethical Dilemmas : 12h

References:
COURSE OUTCOME

CO -1: Understand appropriate and relevant fundamental and applied evidence based knowledge and undertake lifelong learning to improve personal and professional practice.

CO – 2: Demonstrate a capacity to employ a variety of approaches and procedures to research to permit judgements and decisions to be supported by appropriate evidence that places practice within a global and local context.

CO -3: Applies knowledge to diagnose and solve problems in a wide range of diverse situations, with an ability to work independently or with others and incorporate the analysis of evidence based scientific literature to solve psychological problems.

CO -4: Engage in dialogue with a diverse range of people and communicate in a broad range of forms (written, electronic, graphic, oral) to meet the circumstances of the situation and the capabilities of the audience.

CO -5: Maintains tolerance and respect for individuals and groups from diverse backgrounds, holding diverse values, adhering to professional expectations and demonstrating ethical behavior.

CO -6: Describe the important methodological and design issues underlying applied human research.

CO -7: Carry out independent research using a range of research designs and methods.

CO -8: Analyze, and interpret the data using specific statistical tools.

CO -9: Describe the essential features of a range of advanced statistical techniques.
CO -10: Students will engage in a range of learning activities, with an emphasis on problem-based learning focusing on the application of data analysis techniques for addressing the research questions at the heart of their own research projects.

**Unit I - Conceptual foundations of research**  

**Specific Research Methodology**

**Unit 2: Sampling Design and Tools**  
Sampling: Process and Types sampling; probability and non probability sampling, Validity: Internal and external validity, Threats to Validity: Threats to internal validity and external validity, balancing internal and external validity. Reliability: Factors influencing reliability.

**Unit 3: Multivariate Designs and Analysis**  
Introduction to Multivariate methods and analysis, Discriminant Analysis Multiple, logistic and hierarchical regression Factor analysis, structural equation modeling (SEM), Meta analysis, Mediational Analysis, Canonical Analysis. Advantages of multivariate strategies.

**Unit 4: Predictive analysis**  
Simple linear regression: Coefficient of determination, Significance tests, Residual analysis, Confidence intervals  
Multiple linear regression: Coefficient of multiple coefficient of determination, Interpretation of regression coefficients, Categorical variables, heteroscedasticity, Multi-collinearity, outliers, Autoregression and Transformation of variables.

**Unit 5:**  
Logistic and Multinomial Regression: Logistic function, Estimation of probability using logistic regression, Deviance, Wald Test, Hosmer-Lemshow Test  
Forecasting: Moving average, Exponential smoothing, Trend, Cyclical and seasonality components, ARIMA (autoregressive integrated moving average).
Application of predictive analytics in retail, direct marketing, health care, financial services, insurance, supply chain, etc.

**Total: 60 hrs**

**Text Books:**

**References:**
Course Objective:

- To provide foundational knowledge associated with the domain of business optimization and analytics
- To familiarise the students with all concepts of optimisation techniques
- To understand the simulation for analytics
- To describe the big data analytics

Course outcome:

CO – 1: To recognize on the fundamental concepts of Optimization.
CO – 2: To understand on the Business applications of Optimization.
CO – 3: To understand the operations research techniques for analytics.
CO – 4: To illustrate the transportation problems for analytics.
CO – 5: To recognize the types of simulation for analytics.
CO – 6: To design the Simulation models for analytics.
CO – 7: To identify the different dimensions data for big data analytics.
CO – 8: To explain the applications of big data analytics.
CO – 9: To identify the different types of analytics.
CO – 10: To explain the application software of analytics.

Unit I: Modeling


Unit II: Linear Programming


Unit III, Visualization

Visualization, Organization/sources of data, Importance of data quality. Dealing with missing or incomplete data, Data Classification.
Unit IV
Decision modeling, Optimization Use of Excel to solve business problems: e.g. marketing mix, capital budgeting, portfolio optimization, Goal programming; pareto optimality and trade-off curves; the Analytic Hierarchy Process (AHP)

Unit V
Process Mining, Concept and content of workflow logs; discovering the underlying process; discovering exceptions. Process Mining (Course Notes). ProM - process mining toolkit

References:

List of Generic Electives (GE)

16GMBN34          E - BUSINESS MANAGEMENT          4 0 0 3

Course Objective: To understand the practices and technology to start an online business. To know how to build and manage an e-business. Businesses are recognizing the Internet's role in the decision process that organizations go through in analyzing and purchasing goods and services. E-Business Management involves all aspects of an organization's electronic interactions with its stakeholders, the people who determine the future of the organization.

Course Outcome:

CO – 1: To recognize the impact of Information and Communication technologies, especially of the Internet in business operations.

CO – 2: To recognize the fundamental principles of e-Business and e-Commerce.

CO – 3: To distinguish the role of Management in the context of e-Business and e-Commerce.

CO – 4: To explain the added value, risks and barriers in the adoption of e-Business and e-Commerce.

CO – 5: To examine applications of e-Commerce in relation to the applied strategic

CO – 6: To use tools and services of the internet in the development of a virtual e-commerce site.

CO – 7: To understand the various characteristics of electronic payment systems.

CO – 8: To explain the security protocols and the issues in internet security.

CO – 9: To discuss various legal and ethical issues specific to E-Business.

CO – 10: To explain the privacy issues specific to e-business.

UNIT 1 INTRODUCTION TO E-BUSINESS

Overview of E-Business; Fundamentals, E-Business framework; E-Business application;
Major requirements in E-Business; Emerging trends and technologies in E-Business; From E-Commerce to E-Business.

UNIT II TECHNOLOGY INFRASTRUCTURE 12
Internet and World Wide Web, internet protocols - FTP, intranet and extranet, information publishing technology- basics of web server hardware and software.

UNIT III BUSINESS APPLICATIONS 12
Consumer oriented e-business – e-tailing and models - Marketing on web – advertising, e-mail marketing, affiliated programs - e-CRM; online services, Business oriented e-business, e-governance, EDI on the internet.

UNIT IV E-BUSINESS PAYMENTS AND SECURITY 12

UNIT V LEGAL AND PRIVACY ISSUES 12
Legal, Ethics and privacy issues – Protection needs and methodology – consumer protection, cyber laws, contracts and warranties, Taxation and encryption policies.

Total: 60 h

TEXT BOOKS:

REFERENCE BOOKS:
3. Gary P. Schneider, Electronic commerce, Thomson course technology, Fourth annual
edition, 2007


7. Micheal Papaloelon and Peter Robert, e-business, Wiley India, 2006
**Course Objective:** To expose the students to the basic principles of the information technologies for e-business management. Upon completion of this course, the students should have a good working knowledge of information technologies, management information systems, legal issues, and marketing issues of e-business.

**Course outcomes:**

1. To understand the basic requirement of e-business and major requirements for doing e-business
2. To understand the fundamentals and technologies associated with e-business
3. To explain the importance of e-marketing.
4. To explain and illustrate the use of online advertising and online marketing strategies.
5. To understand the different forms of electronic payments.
6. To understand about the access and security over electronic payment systems.
7. To explain the value of CRM. Able to help teams articulate their CRM goals and identify key milestones in the relationship management process.
8. To measure the success of their relationship management efforts.
9. To appraise various social issues associated with the conduct of e-business
10. To understand the legal and ethical issues involved in e-business.

**UNIT I INTRODUCTION TO E- BUSINESS**

Overview of E-Business; Fundamentals, E-Business framework; E-Business application; Major
requirements in E-Business; Emerging trends and technologies in E-Business; From E-Commerce to E-Business.

UNIT II  E-MARKETING AND ADVERTISING  12
Web marketing strategies – communicating with different market segments – E-mail marketing –
steps involved in E-marketing plan – E-marketing technologies – building a website – Advertising
on the web – banner ads – other web ad formats.

UNIT III  ELECTRONIC PAYMENT SYSTEMS  12
Online payment basics – E-payments and protocols – E-cash – Online and offline cash —
electronic wallets – Yahoo wallet – EGML standard – stored value cards – magnetic strip cards –
smart cards.

UNIT IV  CRM  12
– CRM metrics – Building a CRM infrastructure

UNIT V  LEGAL ETHICAL & SECURITY ISSUES IN E-BUSINESS  12
Legal environment of e-commerce – ethical issues – Taxation and e-commerce – Security threats
– Intellectual property threat – Cyber squatting – name changing – name stealing – potential
exposures – virus, hacking, line tapping, spoofing and sniffing

Total: 60 h

TEXT BOOKS:

REFERENCE BOOKS:
2. Thomas H. Davenport Process Innovation - Reengineering Work through Information
Course Objective: The overall objectives are to understand internet users and to identify profitable E-Marketing strategies. Understand the E-Marketing context: e-business models, performance metrics, and role of strategic planning. Describe marketing strategies of segmenting, targeting, positioning, and differentiation. Know how to use marketing functions of product, pricing, distribution, and marketing communication for a firm's E-Marketing strategy. Evaluate several customer relationship management (CRM) strategies using internet technology.

Course Outcomes

CO – 1: To explain the importance of e-marketing;

CO – 2: To understand the applications of various e-business models.

CO – 3: To explain and illustrate the use of search engine marketing, online advertising and online marketing strategies;

CO – 4: To explain the role of e-marketing plans as a component of corporate-level plans;

CO – 5: To conduct secondary research using various sources to identify and synthesise data into useful management information;

CO – 6: To recognise and write appropriate e-marketing objectives;

CO – 7: To critically analyse planning options and offer constructive and practical alternative solutions

CO – 8: To formulate an integrated and comprehensive e-marketing plan

CO – 9: To describe in detail the implementation of an e-marketing plan, including the management of necessary internal organisational change;
CO – 10: To communicate effectively about e-marketing in written and oral reports.

UNIT I  INTRODUCTION TO E-MARKETING  12

UNIT II  THE E-MARKETING ENVIRONMENT  12

UNIT III  E-MARKETING RESEARCH  12

UNIT IV  E-MARKETING MANAGEMENT  12

UNIT V  CUSTOMER ACQUISITION AND RETENTION  12

Total: 60 h

TEXT BOOKS:
4. Rob Stokes, E Marketing – the essential guide to online marketing, flat world
Knowledge, 2nd edition, 2010

REFERENCE BOOKS:
COURSE OBJECTIVE:
To understand e-commerce, types of e-commerce, retail e-commerce-commerce industry framework, electronic payment systems, electronic fund transfer, web branding strategies, mobile commerce strategies for business over web, web hosting. Train in regulatory aspects and implications of e-commerce in the region, as well as its technological, political, security and economic components.

COURSE OUTCOME
CO – 1: Demonstrate an understanding of the foundations and importance of E-commerce
CO – 2: Demonstrate an understanding of retailing in E-commerce by analyzing branding and pricing strategies.
CO – 3: By sing and determining the effectiveness of market research & Assessing the effects of disintermediation.
CO – 4: Analyze the impact of E-commerce on business models and strategy
CO – 6: Describe the infrastructure for E-commerce
CO – 7: Describe the key features of Internet, Intranets and Extranets and explain how they relate to each other.
CO – 8: Discuss legal issues and privacy in E-Commerce
CO – 9: Assess electronic payment systems
CO – 10: Recognize and discuss global E-commerce issues

UNIT I Introduction 12
Traditional commerce and E commerce – Internet and WWW – role of WWW – value chains – strategic business and Industry value chains – role of E commerce.

UNIT II Infrastructure for E COMMERCE 12
UNIT III Web Based Tools for E COMMERCE


UNIT IV Security


UNIT V Intelligent Agents


Total – 60 H

Text Books:


Reference Books:

Course Objective: The objective of this course is to provide students with an overview and in depth knowledge of quantitative techniques used for forecasting and their application. This includes techniques that range from simple ones like moving averages and smoothing techniques to more sophisticated ones like regression models, ARIMA (and related) models, VAR and VECM models, Causality testing and ARCH and GARCH models to test volatility.

Course Outcomes:
CO-1: To utilize the time series method to predict the future of sales in a concern.
CO-2: To record the cyclical variations of the market and its trend.
CO-3: To assess the degree of regression among the variables.
CO-4: To record and predict the seasonal variations of a product and its derivatives.
CO-5: To estimate the variance and regression in complex web of factors.
CO-6: To suppress the large variations in predicting the trend.
CO-7: To undermine the smoothing of rough variations along a seasonal curve.
CO-8: To characterize the factors of causality in time series analysis.
CO-9: To construct a chain of time factors during which operations of management excels.
CO-10: To record the random variations associated in constructive model of business over the years.

Unit I
12H
INTRODUCTION TO TIME SERIES ANALYSIS

UNIT –II
12H
MODELS AND FORECAST FOR TIME SERIES DATA
Additive model - multiplicative model, Editing of Time Series, Measurement of Seasonal Variation - Seasonal average method - Seasonal variation through moving averages - Chain or link relative method - Ratio to trend method, Forecasting Methods Using Time Series - Mean forecast - Naive forecast -
Linear trend forecast - Non-linear trend forecast - Forecasting with exponential smoothing.

UNIT III
VECTOR AUTO REGRESSION MODEL(VAR) 12
Estimation and Identification, - Variance decomposition and Impulse response functions, - Causality applying Granger Causality Tests and VAR model, -Forecasting using a VAR model.

UNIT IV STOCHASTIC PROCESS 12

UNIT V LINEAR TIME SERIES 12

TEXT BOOKS:

REFERENCE BOOKS:
2. Sally Lesik,Applied Statistical Inference with MINITAB®, December 21, 2009
Course Objective:

- To introduce the basic concepts, functions and processes of human resource management.
- To create an awareness of the role, functions of human resource department of the organizations

Course Outcome:

Co 1: Discuss the History and evolution of HRM.
Co 2: Explain the importance of HRM in the organizations through their Roles and responsibilities, challenges etc.
Co 3: To assess the major HRM functions and processes of HRM planning, job analysis and design, recruitment, selection, training and development, compensation and benefits, and performance appraisal
Co 4: Identify strategic HR planning and the HRM process to the organization’s strategic management and decisionmaking process.
Co 5: Explain how training helps to improve the employee performance.
Co 6: Discuss and understand the concept of career development and various career stages
Co 7: Compare the difference between coaching and Mentoring
Co 8: Analyze the emerging trends, opportunities and challenges in performance appraisal.
Co 9: To apply the Concept of job application and how it is practically applied in the org.
Co 10: Discuss various recent techniques related to HRM.

UNIT I - HUMAN RESOURCE MANAGEMENT

Meaning, Scope & Objectives of HRM, Evolution of HRM, Difference between PM & HRM, HRM function’s, HR as a Strategic Business Partner, HR Policy & procedures. Competitive challenges influencing HRM Qualities & qualification of HR Manager, Roles and Responsibilities of HR Manager/Departments,

UNIT II - HUMAN RESOURCE PROCESS

UNIT III MANAGING CAREERS 12
Career Development vs Employee development, Career stages – Career Choices and Preferences, Mentoring and Coaching, Time Management.

UNIT IV PERFORMANCE MANAGEMENT 12

UNIT V CONTEMPORARY ISSUES IN HRM 12
Talent Management, Competency Mapping, Industrial Relations – Health & Safety issues, grievance handling, D Work Life Balance, Quality of Work Life, HRD in India, International HRM

Text Books
Course Objective:

- To provide foundational knowledge associated with the Information Security.
- To provide the knowledge based on the security investigation.
- To describe the risk analysis for security.
- To describe the logical design for security.
- To provide the applications of physical design for security.

Course outcome:

CO – 1: To recognize on the fundamental concepts of information security.
CO – 2: To understand the different security models.
CO – 3: To understand the business needs for security investigation.
CO – 4: To identify the Issues such as Legal, Ethical and Professional.
CO – 5: To identify the risk for security.
CO – 6: To assess the risk for security.
CO – 7: To understand the different standards and practices for logical design.
CO – 8: To understand the design of security architecture.
CO – 9: To identify the security technology for physical design.
CO – 10: To access the control devices for physical design.

UNIT I
INTRODUCTION 12H

UNIT II
SECURITY INVESTIGATION 12H
Need for Security, Business Needs, Threats, Attacks, Legal, Ethical and Professional Issues

UNIT III
SECURITY ANALYSIS 12H
Risk Management: Identifying and Assessing Risk, Assessing and Controlling Risk
UNIT IV
LOGICAL DESIGN 12H
Blueprint for Security, Information Security Policy, Standards and Practices, ISO17799/BS 7799,
NIST Models, VISA International Security Model, Design of Security Architecture, Planning for
Continuity
UNIT V
PHYSICAL DESIGN 12H
Security Technology, IDS, Scanning and Analysis Tools, Cryptography, Access Control
Devices, Physical Security, Security and Personnel
TEXT BOOK:
Publishing House, New Delhi, 2003
REFERENCES:
2003
Course Objectives:

1. To create an understanding of the use of analytics in Marketing and Retail Management.

2. To use the predictive analysis in decision making.

Course Outcome:

1. To understand the marketplace and the changing consumer needs.

2. To identify various methods followed build CRM practices.

3. To recognize the various segments for a product.

4. To identify the various positioning strategies followed by the companies.

5. To compare and contrast products and services.

6. To contrast the characteristics of industrial and consumer goods.

7. To apply the predictive analysis in the marketplace.

8. To identify the various techniques for predictive analysis

9. To apply predictive modelling in retailing sector.

10. To understand the need for digital evolution in marketing and retail sector specifically.

UNIT I INTRODUCTION TO MARKETING

Understanding the marketplace and consumer needs, Designing a Customer Driven Marketing Strategy, Building Customer Relationships, Consumer Behaviour and Business Buyer Behaviour

UNIT II MARKETING STRATEGY


UNIT III PRODUCT AND SERVICE
Products and services, product and service classifications, consumer products, industrial products, product and service decisions, product and service attributes, product support services, services marketing – the nature and characteristics of a service

UNIT IV  RETAIL ANALYTICS – I  12

UNIT V  RETAIL ANALYTICS – II  12
The digital evolution of retail marketing, Digital natives, Constant connectivity Social interaction, Predictive modelling, Keeping track, Data availability, Efficiency optimization.

Total: 60 h

TEXT BOOKS:


REFERENCE BOOKS:

Course Objective:

- To provide foundational knowledge associated with the Cloud Computing.
- To provide the knowledge based on the development of Cloud Service.
- To describe the applications of Cloud Computing.
- To describe the applications of Collaborating using Cloud Service.
- To describe the applications of Collaborating using online.

Course outcome:

CO – 1: To recognize on the fundamental concepts of Cloud Computing.
CO – 2: To understand the Cloud Architecture and Storage.
CO – 3: To recognize on the fundamental concepts of Cloud Services.
CO – 4: To identify the development of Cloud Service.
CO – 5: To identify the applications of Cloud Computing.
CO – 6: To compare the applications of Cloud Computing.
CO – 7: To identify the applications of Collaborating using Cloud Service.
CO – 8: To compare the applications of Collaborating using Cloud Service.
CO – 9: To identify the tools of the applications of Collaborating using online.
CO – 10: To understand the applications of Collaborating using online.

UNIT I  UNDERSTANDING CLOUD COMPUTING  12h

UNIT II  DEVELOPING CLOUD SERVICES  12

UNIT III
CLOUD COMPUTING FOR EVERYONE  12h
Centralizing Email Communications – Collaborating on Schedules – Collaborating on To-Do Lists – Collaborating Contact Lists – Cloud Computing for the Community – Collaborating on Group Projects and Events – Cloud Computing for the Corporation

UNIT IV USING CLOUD SERVICES 12h

UNIT V OTHER WAYS TO COLLABORATE ONLINE 12h

REFERENCES
Course Objective:

- The objective of the course is to bring about personality development with regard to the different behavioural dimensions that have far reaching significance in the direction of organizational effectiveness.
- To enhance the overall development of the students.
- To understand the concept of success and failures and its implications on organizational function.
- To improve interpersonal skills and be an effective team player.

Course Outcome:

Co1: To discuss the concept SWOT and its outcome.
Co2: To explain the communication skills and the self confidence.
Co3: To revise the concept of self esteem with examples
Co4: To compare the concept of success and failure and its causes
Co5: To discuss the concept of motivation and also various factors leading to motivation and demotivation,
Co6: To discuss leadership skills and also to know various types of leadership.
Co7: To explain the concept of Team building and the problem solving techniques
Co8: To analyze the time management skills and various techniques to handle

UNIT I INTRODUCTION


UNIT II TEAMS

Overcoming hurdles - Factors responsible for success – What is failure - Causes of failure - Do's and Don’ts regarding success and failure.

UNIT III ATTITUDE 12
Attitude - Concept - Significance - Factors affecting attitudes - Positive attitude - Advantages - Negative attitude - Disadvantages - Ways to develop positive attitude - Difference between personalities having positive and negative attitude. Concept of motivation - Significance - Internal and external motives - Importance of self-motivation- Factors leading to demotivation

UNIT IV LEADERSHIP 12
Introduction to Leadership, Leadership Power, Leadership Styles, Leadership in Administration. Group Dynamics Importance of groups in organization, and Team Interactions in group, Group Building Decision Taking, Team Building, Interaction with the Team, How to build a good team?

UNIT V TECHNIQUES 12
Group Discussion - Resume Writing- Telephone, E-mail and Public Relations Office’s Etiquettes - Telephone conversation - Time Management Styles- Techniques for better Time Management. Total – 60

Text Books:

References:
Course Objective:

To understand the strategic role of operations management in creating and enhancing a firm’s competitive advantages.

To understand the concepts of layout, planning, maintenance, quality and inventory control, material and store management.

Course Outcomes

- To gain an understanding and appreciation of the principles and applications relevant to the planning, design, and operations of manufacturing/service firms.
- To understand the managerial responsibility for Operations, even when production is outsourced, or performed in regions far from corporate headquarters.
- To describe the boundaries of an operations system, and recognize its interfaces with other functional areas within the organization and with its external environment.
- Demonstrate a basic understanding of the problems of waiting lines.
- Demonstrate an understanding of the principles of just-in-time systems.
- Demonstrate the ability to apply some mathematical forecasting techniques.
- Develop basic materials requirement schedules.
- Demonstrate an understanding of the concepts of operations scheduling.

UNIT I INTRODUCTION 12


UNIT II PLANNING AND CONTROL OF PRODUCTION OPERATIONS 12

Production Planning and Control: Basic functions of Production Planning and Control, Maintenance Management: Objectives: – Failure Concept, Reliability, Preventive and Breakdown maintenance, Replacement policies.
UNIT III QUALITY CONTROL 12
Quality Control and Quality Circles – Statistical Quality Control – Method Study and Work measurement – Its uses and different methods, computation of allowance and allowed time.

UNIT IV MATERIALS MANAGEMENT 12
Need use and importance of Material management - Materials Requirement Planning- Materials Budgeting- Sources of Supply of Materials -election, evaluation and Performance of suppliers - make or buy decisions - Vendor rating - determinants of vendor rating

UNIT V: STORES MANAGEMENT: 12

Total – 60 H

Textbooks:

References:
Course Objective:

- To introduce the cyber world and cyber law in general
- To explain about the various facets of cyber crimes
- To enhance the understanding of problems arising out of online transactions and provoke them to find solutions
- To clarify the Intellectual Property issues in the cyber space and the growth and development of the law in this regard, To educate about the regulation of cyber space at national and international level.

Course Outcome:

CO – 1: To facilitate understand & critical understanding about Cybercrimes, Ethical Hacking, cyber security, forensics and cyber laws

CO – 2: To Exploration of the legal and policy developments in various countries for cyber space

CO – 3: To provide in-depth knowledge of Information Technology Act, 2000 including Information Technology Amendment Act, 2008

CO – 4: To understand e-Governance, Electronic Contracts, e-Banking & Secure electronic records

CO – 5: To share knowledge of the regulation of cyber space at national and international level

CO – 6: To know about the different type of cyber-crimes avail in the present scenario

CO – 7: To be acquainted with the e governance framework in our country.

CO – 8: To get aware of cyber law and use of computer, web technologies in the secured way

CO – 9: To acquaint the students with various dispute resolution available.

CO – 10: To know where to begin if you are presented with an employment law grievance

Unit I
Unit II
Introduction to e-governance, techniques, e-governance in India, Challenges faced, Indian theory of Public administration

Unit III
Cyber Law - International Perspectives, UN & International Telecommunication Union (ITU) Initiatives, Council of Europe - Budapest Convention on Cybercrime, Asia-Pacific Economic Cooperation (APEC), Organization for Economic Co-operation and Development (OECD), World Bank, Commonwealth of Nations

Unit IV
Cyber Crimes & Legal Framework, Cyber Crimes against Individuals, Institution and State, Hacking, Digital Forgery, Cyber Stalking/Harassment, Cyber Pornography, Identity Theft & Fraud, Cyber terrorism, Cyber Defamation, Different offences under IT Act, 2000

Unit V

References:

Outcomes:

- To understand the basic elements of managerial economics aspects of firm and SSI
- To understand the role of manager, so as to manage or organize FOP
- To forecast demand for a product
- To know what to produce, where to, when to, how to, for whom to
- To frame policy for production to minimize the cost and maximum the profit
- To construct the cost function
- To understand the basics of market structures and their environment
- To prepare capital budget
- To know the basic theories related to business practices
- To enable them to take a decision with given business situation in order to make effective management
- To prepare a case study report on demand prediction for a product and capital budget and cost analysis.

Unit I
Introduction to Managerial Economics; The roles of the firm and the House hold, Decision Making in the Household, Consumer Choice, Theory of Demand; its Determination, Estimation and Forecasting

Unit II
Decision Making in the Firm, Production, Cost, Supply : its Determination and Derivation, Equilibrium in Different Market Structures

Unit III
Competitive markets- Equilibrium in the short run and long-run, Monopoly equilibrium and pricing practices of firms with market power, Oligopoly: Strategic interactions and its game theoretic analysis

Unit IV

Unit V
References

1. Yogesh Maheswari, Managerial Economics, Phi Learning, New Delhi, 2005 Gupta G.S.,
2. Managerial Economics, Tata Mcgraw-Hill, New Delhi Moyer & Harris,
3. Managerial Economics, Cengage Learning, New Delhi, 2005 Geetika, Ghosh & Choudhury,
4. Managerial Economics, Tata Mcgrawhill, New Delhi, 2011
OBJECTIVES

1. To study the various perspectives and concepts in the field of Strategic Management.
2. To achieve conceptual clarity.
3. To develop skills for applying these concepts to the solution of business problems.

Course outcome:

CO -1: To analyze the main structural features of an industry and develop strategies that position the firm most favorably in relation to competition.
CO -2: To recognize the different stages of industry evolution and recommend strategies appropriate to each stage.
CO -3: To appraise the resources and capabilities of the firm in terms of their ability to confer sustainable competitive advantage.
CO -4: To demonstrate understanding of the concept of competitive advantage and its sources and the ability to recognize it in real-world scenarios.
CO -5: To distinguish the two primary types of competitive advantage: cost and differentiation and formulate strategies to create a cost and/or a differentiation advantage.
CO -6: To analyze dynamics in competitive rivalry including competitive action and response, and first-mover advantage.
CO -7: To formulate strategies for exploiting international business opportunities including foreign entry strategies and international location of production.
CO -8: To explain how to formulate strategies that leverage a firm’s core competencies.
CO -9: To demonstrate the ability to think critically in relation to a particular problem, situation or strategic decision through real-world scenarios.
CO -10: To recognize strategic decisions that present ethical challenges and make appropriate recommendations for ethical decision-making.

UNIT - I. Introduction to Strategic Management
The Importance of Strategic Management - Schools of thought in Strategic Management - Strategy Content, Process and Roles - The Fit Concept and the Configurational Perspective in Strategic Management - Dimensions and Levels of Strategy

UNIT – II Competitive Strategy
Five Forces that Shape Strategy - Generic Strategies - Generic Strategies and the Value Chain-
Mission and business definition - Environmental Scanning- Analyzing industry and competition-
- internal appraisal - concepts, techniques and cases.

UNIT –III Corporate Strategy
The Motive for Diversification - Related and Unrelated Diversification - Business Portfolio
Analysis Strategy formulation- Types of strategies - Integration, intensive, diversification, and
defensive strategies - strategic analysis -comparative cost analysis, operating and financial
analysis.

UNIT- IV Strategy Implementation
Structure, Systems and People - The 7S Framework Strategy Choice-criteria and process-
Routes for executing strategy. Strategy implementation - Role of organizational structure,
Culture and Leadership, Strategy and Social Responsibility.

UNIT -V Recent Advances
Core Competence as the Root of Competitive Advantage - Business Processes and Capabilities-
based Approach to Strategy .Strategy review, evaluation and control- Auditing - Using
computers to evaluate strategies; strategy for entrepreneurial ventures and small business.
Strategy for non-profit organizations.

Reference Books:-
2. Ghemawat, Pankaj (Spring 2002). "Competition and Business Strategy in Historical
Perspective".
3. Hill, Charles W.L., Gareth R. Jones, Strategic Management Theory: An Integrated Approach,
Cengage Learning, 10th edition 2012
4. Lamb, Robert, Boyden Competitive strategic management, Englewood Cliffs, NJ: Prentice-
Hall, 1984
spring 1999,
1999.
COURSE OBJECTIVES:

- To teach students the techniques and tools useful for financial planning and analysis in today’s financial and economic scenario.
- To improve students’ technical and interpersonal skills through the use of case studies.
- To engender the required analytical knowledge and skills in order to develop proficient financial planners.
- To nurture and groom the aspirants in order to match the requirement of the financial industry.
- To know how to derive meaning from huge volume of data and information.
- To understand how knowledge discovering process is used in business decision making.

Course Outcomes:

- CO1 - Provide solutions assessments and validation to a broad range of financial securities concepts including t-bills, bonds, debentures, common and preferred shares, equities and financial derivatives.
- CO2 - Document, manage, understand and communicate all aspects of the personal financial process and its components and steps.
- CO3 - Use a financial calculator in determining the time value of money.
- CO4 - Understand fundamental and technical analysis and discuss investment theory and financial economics and strategic decision making through planning.
- CO5 - Understand data mining principles and techniques: Introduce DM as a cutting edge business.
- CO6 - Intelligence method and acquaint the students with the DM techniques for building competitive advantage through proactive analysis, predictive modelling, and identifying new trends and behaviours.
- CO7 - Learning how to gather and analyze large sets of data to gain useful business understanding.
- CO8 - Learning how to produce a quantitative analysis report/memo with the necessary information to make decisions.
- CO9 - Describing and demonstrating basic data mining algorithms, methods, and tools.
- CO10 - Identifying business applications of data mining.
UNIT 1: Introduction to financial planning

UNIT 2: Financial planning system and model
Steps in financial planning - Principles of financial plan – Risk return trade off – Financial planning system in a firm – Strategic decision making and planning – Strategic financial planning – Constructing a financial model.

UNIT 3: Data mining
Data mining – Evolution – Steps in data mining – Data warehouse – Techniques in data mining – Applications targeted in data mining – Major issues - Data pre-processing – Data warehousing – Difference between traditional database and data warehouse – Multi dimensional data model – Market based analysis – Classification and prediction of data

UNIT 4: Decision tree and Cluster analysis

UNIT 5:

REFERENCES: