

MRSPTU UNDER GRADUATE OPEN ELECTIVES-II 2016 BATCH ONWARDS
(UPDATED ON 3.3.2017)

UG OPEN ELECTIVES-II 2016 BATCH ONWARDS		
Internal	External	Total
40	60	100

NOTE: MORE COURSES MAY BE ADDED IN THIS LIST LATER ON

UG OPEN ELECTIVES-II 2016 BATCH ONWARDS		
COURSE CODE	COURSE	NOT APPLICABLE FOR PROGRAMMES
BFOT0-F92	Data Process Analysis	B.Tech. Food Technology
BBAD0-F94	Engineering Economics & Management	BBA
BBAD0-F95	Entrepreneurship	
BBAD0-F96	Finance for Engineers	

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DATA PROCESS ANALYSIS

Subject Code: BFOT0-F92

**L T P C
3 0 0 3**

Contact Hrs.

UNIT-I

Introduction: The meaning of quality and quality improvement, Statistical methods for quality control and improvement.

Food Quality System: The link between quality and productivity, Quality costs, Legal aspects of quality, implementing quality improvement.

Control Charts for Variables: Statistical basis of the charts, Development and use of x and R, Charts based on standard values, Interpretation of x and R charts, The effect of non-normality on x and R charts.

UNIT-II

Sampling: Population and sampling distributions, Sampling and non-sampling errors, Mean and standard deviation of x, Shape of the sampling distribution of x, Applications of the sampling distribution of x, Population and sample proportions, Mean, standard deviation.

Test Methods: Hypothesis tests, Estimation and hypothesis testing: two populations, Chi-square tests, Analysis of Variance, Simple linear regression, Non-parametric methods.

UNIT-III

Statistical Process Control (SPC) Techniques: SPC for short production runs, Modified and acceptance control charts, SPC with auto correlated process data, Economic design of control charts.

Multivariate Process Monitoring and Control: Description of multivariate data, The Hotelling T² control chart, The multivariate EWMA (Exponentially Weighted Moving Average) control chart, Latent structure methods.

UNIT-IV

Process Capability Analysis (PCA): PCA using probability plot, Process capability ratios, PCA using a control chart, PCA using designed experiments.

Design of Experiments and Process Optimization: Guidelines for designing experiments, Factorial experiments, the 2k factorial design, Fractional replication of the 2k design, Response surface methods and designs

Six Sigma: Introduction, Six-sigma control chart, Six-sigma quality performance.

Recommended Books:

1. Jerome D. Braverman, 'Fundamentals of Statistical Quality Control', Brady and Prentice Hall, 1981.
2. P.S. Mann, 'Introductory Statistics', John Wiley and Sons, 2010.
3. D.C. Montgomery, 'Statistical Quality Control', 7th Edn., John Wiley & Sons, 2012.
4. M. Jaya Chandra, 'Statistical Quality Control', CRC Publisher, 2001.

ENGINEERING ECONOMICS & MANAGEMENT

Subject Code: BBAD0-F94

**L T P C
3 0 0 3**

Duration: 40 Hrs.

Objectives: To run an organization, Finance and Human resources are the key factors. Their

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proper utilization decides its success. This course will give the basic understanding of both these resources.

UNIT-I (8 Hrs)

Introduction: Scope of economics for engineers; Concept of: Goods, Utility, Value, Price, Capital, Money, Income; Law of Demand & Supply, Basic Management Principles

UNIT-II (11 Hrs)

Cost Analysis: Cost classification: Prime cost, Overhead cost, Selling and Distribution Cost, Fixed cost, Variable cost, Implicit cost, Explicit cost, Replacement cost, Opportunity cost, Marginal cost and Sunk cost; Break Even Analysis; Economic order quantity.

Depreciation: Causes and Methods: Straight line method, Reducing balance method, Repair provision method, Annuity method, Sinking fund method, Revaluation method, Sum of the digit method.

UNIT-III (10 Hrs)

Replacement Analysis: Reasons and factors for replacement; Determination of economic life of an asset.

Inventory Management: Introduction, Factors & Techniques.

UNIT-IV (11 Hrs)

Human Resource Management: Definition; Functions of HRM; Process of Human Resource Planning; Methods of Recruitment; Meaning of Placement and Induction, Difference between Training and Development; Methods of Training and Development.

Recommended Books

1. T.R. Jain, 'Micro Economics', V.K. Publication.
2. P. Khanna, 'Industrial Engineering and Management', Dhanpat Rai Publication (P) Ltd.
3. M.S. Mahajan, 'Industrial Engineering and Production Management', Dhanpat Rai & Co. Pvt. Ltd.
4. T.N. Chhabra, 'Human Resource Management', Dhanpat Rai & Co.
5. P.L. Mehta, 'Managerial Economics', Sultan Chand & Sons.

ENTERPRENEURSHIP

Subject Code: BBAD0-F95

**L T P C
3 0 0 3**

Duration: 40 Hrs.

Objectives: The purpose of this paper is to prepare a ground where the students view Entrepreneurship as a desirable and feasible career option. In particular, the paper seeks to build the necessary competencies and motivation for a career in Entrepreneurship.

UNIT-I

Foundations of Entrepreneurship: Concept, Need, Definition & Role of Entrepreneurship, Definition, Characteristics & Scope of Entrepreneur, Concepts of Entrepreneur, Intrapreneur, Entrepreneurial Culture, Reasons for The Failure of Entrepreneurial Ventures, Various Case Studies, Successful, Failed and Turnaround Ventures.

UNIT-II

Women Entrepreneurs & Entrepreneurship Development: Meaning, Role, Problems & Reasons for Less Women Entrepreneurs, Role of The Following Agencies in The Entrepreneurship Development DIC, SISI, EDII & NIESBUD.

UNIT-III

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Small & Medium Enterprises - Small & Medium Industry: Meaning and Importance, Role & importance of SME in India Economy, Search for a Business Idea, Source of Ideas, Idea Processing, Selection Idea, Input Requirements, Nature and Components of SME Environment, SME Funding

UNIT-IV

Financial Schemes Offered by Various Financial Institutions like Commercial Banks, IDBI, ICICI, SIDBI, SFCs, Role of Central Government and State Government in Promoting Entrepreneurship Relevant case studies related to the topics should be discussed.

Recommended Books

1. Vasant Desai, 'Management of Small Scale Industries', Himalaya Publishing.
2. Angadi, Cheema, Das, 'Entrepreneurship, Growth, and Economic Integration', Himalaya Publication.
3. Rizwana and Janakiran, 'Entrepreneurship Development', Excel Books.
4. Murthy, 'Small Scale Industry and Entrepreneurial Development', Himalaya Publishing.

FINANCE FOR ENGINEERS

Subject Code: BBAD0-F96

**L T P C
3 0 0 3**

Duration – 40 Hrs

Course Objective: To provide an understanding of the function, the roles, the goals and the Processes of corporate financial management, covering the sourcing of finances and their issues in investment and operations. Problem-solving methodology will be used to illustrate the theories and tools in financial decision making.

Unit-I (10 Hrs.)

Nature, Scope and Objectives of Financial Management, Profit Maximization Vs Wealth Maximization, Financial Planning, Forms of Business Organization, Role of Financial Manager.

Unit-II (10 Hrs.)

Capital Structure – Introduction, Factors Affecting Capital Structure, Liquidity Ratios
Capital Structure Theories: Net Income Approach, Net Operating Income Approach, Traditional Approach, Modigliani-Miller Model (MM), Criticisms of MM Models, Financial Distress & Agency Cost, Asymmetric Information Theory.

Unit-III (10 Hrs.)

Working Capital Decision: Meaning, Nature and Scope of Working Capital - Component of Working Capital – Factors affecting Working Capital, Working Capital Strategies,
Capital Budgeting Techniques: Discounted and Non-Discounted Methods (Pay Back, ARR, NPV, IRR, Benefit Cost Ratio), Long Term and Short Term Sources of Funds

Unit-IV (10 Hrs.)

Long Term Sources of Funds: Equity share, Preference shares, Debentures, Bonds, Warrants, Venture capital and Ploughing back of profits

Short Term Sources of Funds: Commercial Paper, Certificate of Deposit, Treasury Bills

Financial Markets: Nature and Significance of Primary and Secondary Markets, Objectives and Functions

Course Outcome: After completing this course the students should be able to make optimum decisions pertaining to raising funds, making investments & managing the assets of a corporation, big or small, with an ultimate goal of creating value.

Recommended Books

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1. Brigham, 'Financial Management: Text & Cases', Cengage Learning.
2. Brealy & Myres, 'Principles of Corporate Finance', Tata McGraw Hill.
3. Ambrish Gupta. 'Financial Accounting for Management', 2nd Edn., Pearson Education.
4. I.M. Pandey, 'Financial Management', Vikas Publishers.
5. S.P. Jain and K.L. Narang, 'Principles of Accounting', Kalyani Publishers, New Delhi, 2004