

# **DELHI PHARMACEUTICAL SCIENCES & RESEARCH UNIVERSITY**

*(The First Pharmacy University in India)*

## **School of Allied Health Sciences**



### **Syllabus Book**

### **MBA- Pharmaceutical Management**

## **SCHOOL OF ALLIED HEALTH SCIENCES**

The School of Allied Health Sciences is dedicated to become a pioneer in research and education in pharmaceutical, hospital management and public health. The school was established in 2016 under Delhi Pharmaceutical Sciences and Research University, Govtof NCT of Delhi.

### **Mission**

- Capacity building of healthcare professionals through comprehensive teaching and training programs.
- To support the personal and professional development of young minds through effective management principles and preparing professionals for the healthcare sector.
- Connecting and collaborating with health care professionals, organisations and professional bodies to improve health care management and enable to get the best of collective expertise and resources for fulfilling the quality management objectives.

### **Vision**

- To transform the health care education to overcome the limitations of Indian health care systems.
- Improvement in the standards of health care systems through excellent teaching, training and research.

The School of Allied Health Sciences has three main programmes:

- **MBA in Pharmaceutical Management (MBA-PM):** Two-year full time Masters of Business Administration Programme with specialization in Pharmaceutical Management
- **Masters in Public Health (MPH):** Two-year full time Masters Programme with specialization in Public health
- **Masters in Hospital Administration (MHA):** Two-year full time Masters Programme with specialization in Hospital Management.

All the three programmes are equipped to meet the educational challenges of the rapidly growing health sector in the world. The dynamic curriculum designed in conjunction with academia and industry experts provides the Opportunities for the students to master new skills and explore varied perspectives in pharmaceutical and health care management. The emphasis is on practical knowledge and personalized learning. Opportunities are abounding for students and faculty at all levels to participate in basic, translational, interdisciplinary and community-oriented education and research. The Departments of Pharmaceutical Management, Hospital Management and Public health offer diverse cutting-edge programs for students with a managerial and technical foundation for careers in pharmaceutical companies, consulting, health care systems, hospital management, public health management and health insurance. The School have collaborations and partnerships with major hospitals like Indraprastha Apollo Hospital, Max Super Specialty Hospital, Delhi Heart and Lung Super Specialty Hospital and renowned pharmaceutical industries Cognitrex Consultants Pvt. Ltd, Alniche Life Sciences Pvt. Ltd and other non-profit organizations etc.

### **Faculty**

Faculty members generate knowledge through cutting-edge research in all functional areas of pharmaceutical, hospital and public health management that would benefit students and society in general. The faculty members collaborate with the health care and pharmaceutical industry as well as other academic institutions in India and abroad.

## **Internship/Training**

An integral part of the MBA-PM, MPH and MHA programs is the internship/training, a structured and supervised professional experience with an approved agency from which students receive academic credit. After completing first year of class room learning, students undergo a short-term internship for 4-6 weeks. And on the completion of third semester they need to undergo training for 3-4 months in pharmaceutical industry, recognized hospitals and/or other health care agencies to gain specific practical training and exposure related to core areas of pharmaceutical management, public health and hospital management. The main purpose of internship for MBA-PM is to give practical exposure to the students on business operations in pharmaceutical industry and equip them to develop requisite skills and solving management problems. Also it helps them to acquire the consultancy skills along with class room teaching to develop them as trained professionals. The goal of these internships for MPH and MHA are to impart the practical knowledge through research methods, help formulate a rigorous research problem related to public health and hospital management issues on the basis of their observation, conduct an independent study, and encourage working in a team preparing them for a professional career in public health and hospital management

## **Placements**

The School of Allied Health Sciences is in the emerging phase, identifying the career development prospects of students. All the students have undergone the vigorous placement processes and are successfully placed in various organizations of repute like BLK Memorial Hospital, DGHS, Mamta Foundation, Care Foundation, UNESCO, IQVIA, WNS Global Services, Cognitrex Consultants, ZS Associates, DRG, Eli Lilly and Course 5 Intelligence and few more.

## **Future Perspective**

- Identified deep engagements with international networks for Advanced Management, which includes eminent business schools around the world.
- Partnership and collaborations with global organizations involved in public health management.
- Management Development Programs to improve management practices in health and related systems.

## **Rules governing conduct and maintenance of discipline for students**

- Students of School of Allied Health Sciences are required to attend every lecture, field work and journal club activities during the semester. However, to be eligible to take end-semester examination, the student shall be required to attend 75% of actually held lectures and related activities of each course.
- Students availing fellowship shall not be entitled to any vacation/ leave.
- Every student shall at all times maintain absolute integrity and devotion to studies and conduct himself in a manner conducive to the best interest of the School and University and shall not commit any act which is unbecoming of him/her or is prejudicial to the interest of the School and University.
- Conform to and abide by the provisions of the rules made by the University from time to time.
- Comply and abide by all lawful orders which may be issued to him /her from time to time in the course of his/ her studies by the University or by any person or persons to whom he/ she may be reporting in his/her department.

## **MBA-Pharmaceutical Management**

MBA (Pharmaceutical Management) is one of the flagship programs of the University designed to equip students with skill-based, practical business management knowledge and analytical skills to develop their capacity to lead domestic and global pharmaceutical industry through adaptability, innovation and creativity. The department uses the case study method as one of the pedagogical tool to transform the classroom learning to real world business scenarios that provide compelling Opportunities amidst challenge settings. The curriculum consisting of core management areas like Marketing Management, Human Resource Management, Financial Management, Project Management and Supply Chain Management along with pharmaceutical industry-oriented subjects like Pharmaceutical Business Environment, Drug Regulatory Affairs and Intellectual Property Rights (IPR) etc.

# Program Structure, Course Curriculum

And

## Scheme of Examination

### Program Overview

This program aims to develop professional managers with requisite skills in planning, implementation, operational Management, problem solving, consultancy and entrepreneurship. Through this rigorous program, graduates are able to manage various operations of pharmaceutical industry nationally as well as globally thus meeting the demand for quality pharmaceutical management.

### Program Outcomes

After completion of the program, graduates should be able to:

**PO1. Critical Thinking:** Take informed actions after identifying the assumptions that frame our thinking and actions and would enhance their administrative competence and decision making, when facing the challenges in the Pharmaceutical and healthcare industry.

**PO2. Effective Communication:** Speak, read, write and listen in person and through electronic media to promote knowledge through applied and conceptual research relevant to pharmaceutical management and to disseminate this knowledge through publications for furtherance of pharmaceutical industry development.

**PO3.Social Interaction:** Elicit views of others and mediate disagreements while applying skills in planning and managing pharmaceutical and healthcare organizations to help reach conclusions in group settings.

**PO4.Effective Citizenship:** Demonstrate empathetic social concern towards national development, and the ability to act with an informed awareness of pharmaceutical industry issues and policies.

**PO5.Ethics:** Recognize ethical issues, ethical and social

responsibility towards prescribers, patients and society, to justify the moral judgement concerning pharmaceutical profession and inspire social values.

**PO6.Environment and Sustainability:** Get Responsible towards the wellbeing of environment, the patients, healthcare professionals and the community by reducing toxicity of pharmaceutical industrial waste, minimizing the use of hazardous chemicals, recycling and realising the importance of sustainable designs and building techniques to create true healing environment.

**PO7.Self-directed and Life-long Learning:** Engage in independent and life-long personal and professional learning and developing skills to cope with and socio-technological changes

### **Program specific Outcomes (PSO's):**

After completion of the Program, students should be able to:

**PSO1** Understand the latest concepts and techniques of management and their applications in making the administrative roles of the graduates effective and efficient.

**PSO2** Have the skills to analyse and solve operational problems in the delivery of managerial tasks in pharmaceutical industry.

**PSO3** Use appropriate strategies for effective planning, implementation and evaluation of various functions in pharmaceutical organizations.

**PSO4** Apply the qualitative and quantitative analytical tools as applicable to different management related problems.

**PSO5** Develop skills with the focus on strategic responsibility for training and development of human resource for pharmaceutical industry.

**PSO6** Explain the legal and regulatory environment in healthcare

with special reference to drugs and medical devices and implications for managers within the field.

**PSO7** Promote the efficient and equitable allocation of resources and development of strategies to promote cost-effective pharma products and services.

**PSO9** Use oral and written communication skills and integrate appropriate technology and software skills to develop informative, explanatory, and persuasive presentations.

## **Course Structure and Duration**

It will be an intensive full time two years course, comprising of four semesters, which will include classroom lectures, tutorials, seminars, journal clubs and practical exposure through internship/training in various departments of pharmaceutical industry.

This booklet contains the programme structure, detailed curriculum and the scheme of examination. The importance of each course is defined in terms of credits given to it. The credit Units of each course have been further defined in terms of contact hours i.e. Lecture hours (L), Tutorial Hours (T), Practical Hours (P).

It is hoped that it will help the students study in a planned and a structured manner and promote effective learning. Wishing students an intellectually stimulating stay at Delhi Pharmaceutical Sciences and Research University.

**MBA (Pharmaceutical Management)**  
**Semester-1**

Semester	Paper Code	Subject	Periods			Credit Units	Evaluation Scheme		
			L	T	P		Internal	External	Total
<b>1</b>	MB 101	Principles Of Management	3	1	-	4	20	80	100
	MB 102	Financial Accounting	3	1	-	4	20	80	100
	MB 103	Managerial Economics	3	1	-	4	20	80	100
	MB 104	Human Resource Management	3	1	-	4	20	80	100
	MB 105	Research Methodology	3	1	-	4	20	80	100
	MB 106	Marketing Management	3	1	-	4	20	80	100
	MB 107	Communication Skills	2	-	-	2	50*	-	50
	MB 108	Computer Application Lab	-	-	4	2	50*	-	50
		Introduction to Medical Pharmacology**	-	-	Refresher course on MOA of different drugs and their formulations to learn more about product detailing and positioning				
			<b>20</b>	<b>6</b>	<b>4</b>	<b>28</b>	<b>220</b>	<b>480</b>	<b>700</b>

\*Evaluation to be conducted by internal faculty/examiner.

\*\* Non- credit course

# **Principles of Management**

## **Paper Code- MB 101**

**Contacts: 3L + 1T**

**Credits: 4**

### **Course Overview:**

The course defines management principles and discusses major functions of managers working in pharmaceutical industry. Knowledge is imparted about the roles and responsibilities in order to accomplish stated objectives with efficiency.

**Course Objectives:** The objectives of this course are to:

- Provide knowledge and ability to apply managerial principles to corporate environment with special reference to pharmaceutical industry.
- Discuss organizational behaviour as well as the roles and responsibilities of management and leadership within healthcare organizations through the macro (organization-wide) and micro (individual and team performance) perspectives.
- Inculcate the practice of managing individuals and groups through motivation, communication, teamwork, leadership, organizational change, coalition building, negotiation, and conflict management and resolution.

**Course Outcomes:** After Completion of this course, students would be able to:

**CO1** Describe key concepts, theories and techniques for analyzing different organizational situations.

**CO2** Identify and demonstrate the dynamic nature of the environment in which planning, organizing, controlling, staffing, decisions making skills are demonstrated and help the organization in implementation of its vision and mission.

**CO3** Apply the introduced conceptual frameworks, theory and techniques to lead the organization in achieving its goals.

**Course Content:**

## **Unit 1: Introduction to Management**

Management- definition, scope, function and significance; approaches to management: system and contingency; Levels of management-concepts of PODSCORB, managerial grid; Evolution of management thoughts-contribution of F.W. Taylor, Henri Fayol and contingency approach, functions of managers.

## **Unit 2: Planning and Decision making**

Planning- definition, characteristics, objectives, nature, importance, steps, planning process, advantages and disadvantages; Forecasting: definition, techniques, advantages and disadvantages; Objectives and MBO-meaning of objective, MBO, process of MBO, benefits of MBO; strategies, policies and planning premises- nature & purpose, the strategic planning process, TOWS matrix, Portfolio matrix, porter's competitive strategies, implementation. Decision making-meaning, characteristics, process and systems approach

## **Unit 3: Organizing**

Organizing- concepts, structure (formal & informal, line & staff and matrix), meaning, advantages and limitations; Departmentation - formal and informal organization, Organizational division-the department, the structure and process of organizing, the span of management; departmentation by time, enterprise function, geography, product, customer, matrix organization; Strategic Business Units, line and staff concepts, Delegation- authority & responsibility relationship. Staffing- overview of the staffing function, situational factors affecting staffing

#### **Unit 4: Directing and Leading**

Directing- Meaning and Process; Motivation- Theories, Systems and Contingency Approach to Motivation. Leadership- Defining Leadership, Ingredients of Leadership, Styles and Functions of Leadership, Trait Approach to Leadership, Situational or Contingency Approaches to Leadership, Communication.

#### **Unit 5: Coordination and controlling**

Co-Ordination- Feature, Types, Problems, Steps, Co-Ordination and Co-Operation; Controlling- The Basic Control Process, Initial Control Points and Standards, Control as A Feedback System, Requirement for Effective Control; Control Techniques - The Budget, Traditional Non-Budgetary Control Devices

#### **Text & References:**

1. Essentials of Management. Author Harold Koontz, McGraw-Hill series in management
2. Management. Stephen P. Robbins, Mary Coulter. — 11th ed
3. Tripathy PC and Reddy PN, "Principles of Management", Tata McGraw-Hill, 1999.
4. Decenzo David, Robbin Stephen A, "Personnel and Human Reasons Management", Prentice Hall of India, 1996

# Financial Accounting

## Paper Code- MB 102

**Contacts: 3L + 1T**

**Credits: 4**

### **Course Overview:**

The course defines to understand and apply accounting concepts, principles and conventions for the professionals in their routine monetary transactions, recognize the circumstances providing for increased exposure to fraud and define preventive internal control measures. Knowledge is imparted to create and prepare financial statements in accordance with Generally Accepted Accounting Principles. Analyze, interpret and communicate the information contained in basic financial statements and explain the limitations of such statements.

**Course Objectives:** The objectives of this course are to:

- Introduce the basic theory, concepts and practice of financial accounting.
- Enable students to understand information contained in the published financial statements of companies and other organizations.
- Preparation of accounting statements, with an emphasis on proper understanding of their uses and limitations.
- Understand the basic concepts and importance of working capital management.

**Course Outcomes:** After Completion of this course, students would be able to:

**CO1.** Understand and apply accounting concepts, principles and conventions for their routine monetary transaction.

**CO2.** Recognize circumstances providing for increased exposure to fraud and define preventative internal control measures.

**CO3.** Create and Prepare financial statements in accordance with Generally Accepted Accounting Principles.

**CO4.** Utilize the technology (such as computers, information databases) in facilitating and enhancing accounting and financial reporting processes.

**CO5.** Analyze, interpret and communicate the information contained in basic financial statements and explain the limitations of such statements.

**CO6** Understand the basic concepts and importance of working capital management

## **Course Content:**

### **Unit 1: Meaning and Scope of Accounting**

Overview of Accounting, Users of Accounting, Accounting Concepts Conventions, Book keeping and Accounting, Principles of Accounting, Basic Accounting terminologies, Accounting Equation , Overview to Depreciation (straight line and diminishing method) .

### **Unit 2: Accounting Standards and International Financial Reporting Standards (IFRS)**

International Accounting Principles and Standards; Matching of Indian Accounting Standards with International Accounting Standards, Human Resource Accounting, Forensic Accounting.

**Cost Accounting:** Cost, meaning and types of Cost, Marginal costing and absorption costing, cost volume profit analysis, break even analysis and activity based costing, Standard costing and variance analysis.

### **Unit3: Mechanics of Accounting**

Double entry system of Accounting, Types of Accounts and its rules, Journalizing of transactions; Ledger posting and Trial Balance ,Preparation of final accounts, Profit & Loss Account, Profit & Loss Appropriation account and Balance Sheet, Excel Application to make Balance sheet, Case studies and Workshops.

### **Unit4: Analysis of financial statement**

Ratio Analysis- solvency ratios, Profitability ratios, activity ratios, liquidity ratios, Market capitalization ratios; Common Size Statement; Comparative Balance Sheet and Trend Analysis of manufacturing, Service & banking organizations, Case Study and Workshops in analyzing Balance sheet.

### **Unit5: Working Capital**

Concepts of Working Capital and its types, Determinants of Working Capital, methods of calculating Working Capital, Working Capital Financing.

**Cash and Fund Flow Statement:** Various cash and non-cash transactions, flow of cash, difference between cash flow and fund flow, preparation of Cash and Fund Flow Statement and its analysis.

### **Text & References:**

1. Narayanswami - Financial Accounting: A Managerial Perspective (PHI,5th Ed)
2. Dhanesh k Khatri- Financial Accounting (TMH,2015)
3. Ambrish Gupta - Financial Accounting: A Managerial Perspective (Prentice Hall, 4th Edition)
4. Ramchandran&Kakani - Financial Accounting for Management (TMH, 2nd Edition).
5. Mukherjee - Financial Accounting for Management (TMH, 2nd Edition).
6. Maheshwari S.N & Maheshwari S K – A text book of Accounting for Management (Vikas, 10th Edition)
7. Essentials of Financial Accounting (based on IFRS), Bhattacharya (PHI, 3rd Ed)
8. Khan and Jain - Financial Management (Tata McGraw Hill, 7th Ed.)
9. PC Tulsian- Financial Accounting (Pearson, 2016)
10. Dhamija - Financial Accounting for managers: (Prentice Hall, 2nd Edition).
11. Khan and Jain- Management Accounting (Tata McGraw Hill, 7th Ed.)

# Managerial Economics

## Paper Code- MB 103

**Contacts: 3L + 1T**

**Credits: 4**

### **Course Overview:**

The course enables the future managers to remember the concepts of micro economics, principles in order to make effective economic decisions under conditions of risk and uncertainty. Able to analyze macroeconomic concepts and their relation to micro economic concept and how they affect the business & economy. Enable to understand and evaluate the different market structure and their different equilibriums for industry as well as for consumers by the application of various pricing strategies.

**Course Objective:** The objectives of this course are to:

- Understand the relative importance of Managerial Economics
- Know how the application of the principles of managerial economics can aid in achievement of business objectives
- Understand the modern managerial decision rules and optimization techniques.
- Be equipped with the tools necessary in analysis of consumer behaviour as well as in forecasting product demand
- Understand and be able to apply latest pricing strategies
- Understand and analyze the macro environment affecting the business decision making.

**Course Outcomes:** After completing the course, students would be able to:

**CO1** Remember the concepts of micro economics and also able to understand the various micro economic principles to make effective economic decisions under conditions of risk and uncertainty

**CO2** Understand the law of demand & supply & their elasticity, evaluate & analyze these concepts and apply them in various changing situations in industry

**CO3** Apply various techniques to forecast demand for better utilization of resources.

**CO4** Understand & evaluate the different market structure and their different equilibriums for industry as well as for consumers for the survival in the industry by the application of various pricing strategies

**CO5** Analyze the macroeconomic concepts & their relation to micro economic concept & how they affect the business & economy.

### **Course Content:**

#### **Unit 1: Basic Concepts and principles:**

Definition, Nature and Scope of Economics-Micro Economics and Macro Economics, Managerial Economics and its relevance in business decisions. Fundamental Principles of Managerial Economics - Incremental Principle, Marginal Principle, Opportunity Cost Principle, Discounting Principle, Concept of Time Perspective, Equip-Marginal Principle, Utility Analysis, Cardinal Utility and Ordinal Utility.

#### **Unit 2: Demand and Supply Analysis:**

Theory of Demand, Types of Demand. Determinants of demand, Demand Function, Demand Schedule, Demand curve, Law of Demand, Exceptions to the law of Demand, Shifts in demand curve, Elasticity of Demand and its measurement. Price Elasticity, Income Elasticity, Arc Elasticity. Cross Elasticity and Advertising Elasticity. Uses of Elasticity of Demand for managerial decision making, Demand forecasting: Meaning, significance and methods. (Numerical Exercises)

Supply Analysis; Law of Supply, Supply Elasticity; Analysis and its uses for managerial decision making.

Price of a Product under demand and supply forces

### **Unit 3: Production and cost Analysis:**

Production concepts & analysis: Production function, Types of production function, Laws of production: Law of diminishing returns, Law of returns to scale.

Cost concept and analysis: Cost, Types of costs, Cost output relationship in the short-run. Cost output relationship in the Long-run.

Estimation of Revenue: Average Revenue, Marginal Revenue

### **Unit 4: Market structures:**

Perfect and Imperfect Market Structures, Perfect Competition, features, determination of price under perfect competition. Monopoly: Feature, pricing under monopoly, Price Discrimination. Monopolistic: Features, pricing under monopolistic competition, product differentiation. Oligopoly: Features, kinked demand curve, cartels, price leadership.

### **Unit 5: Macro Economics:**

National Income; Concepts and various methods of its measurement, Circular flows in 2 sector, 3 sector, 4 sector economies, Inflation, types and causes, Business Cycle & its phases.

### **Text & References:**

1. Managerial Economics, Geetika, McGraw-Hill Education 2nd Ed.
2. Managerial Economics: Concepts and Applications (SIE), Thomas & Maurice, McGraw-Hill Education, 9th Ed
3. Managerial Economics, Analysis of Managerial decision Making. H.L. Abuja, S. Chand, 8th Ed
4. Managerial Economics, D.N. Dwivedi, Vikas Publication, 7th Ed
5. Managerial Economics – Theory and Applications, Dr. D.M. Mithani, Himalaya Publications, 7th Ed.
6. Sociology & Economics for Engineers, Dr. Premvir Kapoor, Khanna Publishing House

7. Managerial Economics by Duncan, W.R. and Crook, J.N.
8. Advanced Economics Theory by Ahuja, H.L
9. Managerial Economics by Varshney, R.L. and Maheshwari, K.L.

# **Human Resource Management**

## **Paper Code- MB 104**

**Contacts: 3L + 1T**

**Credits: 4**

### **Course Overview:**

The course aims at developing the skills of managing people in the pharmaceutical industry. It introduces concepts of human resource management in the context of organization, organizational characteristics, learning organization, human resource planning, recruitment and selection, job analysis and evaluation, performance appraisal, career planning, motivation, leadership, team work, and managing employees relations.

**Course Objectives:** The objectives of this course are to:

- Provide an understanding of the dimensions of the management of human resources, with particular reference to HRM policies and practices in India.
- Explain the development, implementation, and evaluation of employee recruitment, selection, and retention plans and processes.

**Course Outcomes:** After completing the course, students would be able to:

**CO1** To describe the organizational context in which human resource management activities take place

**CO2** Describe human resource planning as a systematic approach to the acquisition, use and deployment of people in the organization

**CO3** Conduct job analysis and job responsibilities; outline the nature of the contract between the employer and an employee

**CO4** Identify key issues in performance appraisal, training and development of the employees

**CO5** Describe the main features of the collective relationships between employers and employees and describe organizational characteristics and learning organization

### **Course Content:**

#### **Unit 1: Overview of HRM**

Introduction of HRM, Overview of HRM, Scope of HR, Nature of HR, Need for HR Planning, Organization culture- Induction and Socialisation, Roles and Responsibilities of HR Manager, Challenges Issues in HRM, HR Information Systems- EHRM, International trends in HR Management

#### **Unit 2: Human Resource Planning, Training and Development**

Recruitment and Selection, placement, and planning staffing. Job Analysis & Design-job description- job specification- job enlargement- job enrichment Appraising & Managing Performance-different methods- Traditional and modern- and other methods-potential appraisal -succession planning, Promotion procedure and policies, Employee Training & Development, Career Planning & Development.

#### **Unit 3: Wages and Compensation and Employee Grievances**

Wages and compensation -Employee Remuneration, Administrative job evaluation, Designing and administering the wage and salary structure- Non financial rewards, Employee grievance Handling- Counselling and mentoring, Downsizing separation processes, Turnover retirement, Layoff discharge, VRS, Evaluation of HR effectiveness-HR audit

#### **Unit 4: Industrial Relations**

History- purpose-scope-objectives, Relationship of Industrial Relations with Employee Relations, Theories of Industrial Relations, Industrial Relations in Globalised Economy, The role of government in Industrial Relations, National Commission on Industrial Relations Recommendations, HRM & IR

#### **Unit 5: Trade Unions**

History of Trade Unions -Structure-Organizations –Problems, Trade Unions -Theories, functions, methods. Trade Unions ACT 1926, Management of Trade Unions in India, Trade Unions in a liberalized era, Collective bargaining, workers' participation movement, managing employee Safety and Health, ILO and India.

#### **Text & References:**

1. Human Resource Management, Ashwatthapa. 8<sup>th</sup> edition.
2. Human Resource Management – Gary Dessler
3. Fundamentals of Human Resource Management, 9th Edition
4. David A. DeCenzo (Coastal Carolina University ), Stephen P. Robbins
5. Human Resource Management Text and Cases (Paper Codeback)- VSP RAO
6. Hospital Administration And Human Resource Management R.C. Goyal
7. Designing and Managing Human Resource Systems- Udai Pareek & T. V. Rao (Oxford & IBH Pub. Co. Ltd., New Delhi)

# **Research Methodology**

## **Paper Code - MB 105**

**Contacts: 3L + 1T**

**Credits: 4**

### **Course Overview:**

The course introduces the concepts of research, ethical principles and challenges and the elements of the research process within quantitative, qualitative, and mixed methods approaches. The rigorous curriculum prepares students to become leading public health professionals capable of addressing current global health problems with multidisciplinary, evidence-based approaches. Students will use these theoretical learning's to review literature relevant to their field or interests.

**Course Objectives:** The objectives of this course are to:

- Develop understanding on various kinds of research, objectives of doing research, research process, research designs and sampling.
- Impart knowledge for enabling students to develop data analytics skills and meaningful interpretation to the data sets so as to solve the organizational problems.
- Describe the participants in conducting research work and formulating research synopsis and report.

**Course Outcomes:** After completing this course, students would be able to:

**CO1** Critically analyze research and evaluation studies from the literature in terms of the appropriateness of their research questions, designs, methodologies, results and conclusions

**CO2** Develop comprehensive evaluations plan for an industrial project.

**CO3** Conceptualize a research problem or an evaluation issue and design and carry out a study to address that problem/issue using appropriate research and analytic methods.

**CO4** Gain a better understanding of data analysis and statistical issues in design of experiments, as well as the techniques and terminology commonly used to elicit and communicate evidence concerning scientific hypotheses.

**CO5** Learn to properly interpret the strength of statistical arguments made by researchers, and how to weigh statistical and clinical evidence in assessing a scientific hypothesis.

### **Course Content:**

#### **Unit 1: Basics of Research**

Definitions & uses of research in healthcare, Steps Involved in Research Process, Variables in research, Formulation of research problems, writing research questions, Development of conceptual framework.

#### **Unit 2: Sampling & Research Designs**

Sampling, Sampling Procedure, types of Sampling Techniques, reliability & validity in research, Research Designs- Non-experimental; experimental research designs.

#### **Unit 3: Review of Literature & Hypothesis**

Sources of literature review, writing literature review, Hypothesis-Meaning and types of hypothesis, Type I & Type II errors in

hypothesis testing.

#### **Unit 4: Data Collection**

Different methods of data collection- Observation method, interview method, Questionnaire and schedule, Data Management: editing, entry and preparing data sets for analysis; Design and development of questionnaire.

#### **Unit 5: Research Report**

Structure and components of research report, Types of reports, Layout of research report, Method of writing a research report.

#### **Unit 6: Research Ethics & Reference Writing**

Ethics in health research, confidentiality and privacy, informed consent, vulnerable subjects and special treatments; Vancouver style of reference writing

#### **Text & References:**

1. Gummerrson, E. Qualitative methods in Management Research, Sage publications
2. Grundy F and Reinke W A, Health Practice Research and formalize ManagerialMethods, Geneva, WHO
3. Designing and conducting Health surveys, Jossey Bass Publishers.

4. Varkevisser, C. M., Pathmanathan, I., & Brownlee, A. T. (2003). Designing and conducting health systems research projects (Vol. 1) IDRC.
5. John Creswell (2013). Research Design: Qualitative, Quantitative, and mixedmethods approaches. Fourth edition, Sage Publications
6. Kothari, C.R., 1990. Research Methodology: Methods and Techniques. New AgeInternational. 418p.
7. Ulin P, Robinson E, Tolley E. (2005), Qualitative Methods in Public Health: A fieldguide for Applied Research, Jossey Bass Pub.
8. Russell Bernard H., Gery W. Ryan (2010), Analyzing Qualitative Data: Systematic Approaches, SAGE Publications

# Marketing Management

## Paper Code- MB 106

**Contacts: 3L + 1T**

**Credits: 4**

### **Course Overview:**

This subject will provide an exposure to the conceptual framework of marketing in general and specific to pharmaceutical industry. This learning will enable the students to understand the need, relevance and necessity of marketing in today's competitive market environment, facilitates them operationalizing and implementing marketing as an integral functions in a Healthcare scenario.

**Course Objectives:** The objectives of this course are:

- To provide the students exposure to modern marketing concepts, tools, and techniques, and help them develop abilities and skills required for the performance of marketing functions in industry.
- To give the insight into the application of marketing principles in various situations in pharmaceutical management.

**Course Outcomes:** After completing this course, students should be able to:

**CO1** State the role and functions of marketing in Pharmaceutical industry.

**CO2** Describe key marketing concepts, theories and techniques for analyzing a variety of marketing situations.

**CO3** Identify and demonstrate the dynamic nature of the Environment in which marketing Decisions are taken and appreciate the implications for marketing strategy determination and implementation.

**CO4** Apply the introduced conceptual frameworks, theory and techniques to various marketing contexts in reverence to Pharmaceutical industry.

## **Course Content:**

### **Unit 1: Introduction to Marketing**

Definition of marketing, process of marketing, needs, core concepts of marketing- demands, want, Maslow hierarchy of need theory, identifying customer needs and desires (concept of market research and marketing research), marketing mix, marketing plan, Marketing Strategy, Fundamentals of Pharmaceutical Marketing: the 4 'Ps' in a regulated Pharma market, the Strategic Triangle company, orientation towards marketplace

### **Unit 2: Developing Marketing Strategies and Plans**

Marketing and customer value, delivering Value, corporate and divisional strategic planning, building customer value, loyalty, Market segmentation in the pharmaceutical context, conceptual difference with consumer products market segmentation, targeting, differentiating and positioning. Product, Levels of product, product lines, product mix, brand and packing, collecting information and forecasting demand, conducting marketing research, consumer behaviour, building strong brands, competition, and Marketing Strategies.

**Pricing strategies and Promotions-** Understanding Pricing, Pricing decisions, methods of pricing of pharmaceutical products, selecting the final price, price discounts. Designing and managing integrated marketing communications, advertising and sales promotions, public relations, managing the sales force

### **Unit 3: Planning Marketing Programs**

Designing and Managing services, new product development, designing and managing integrated marketing channels, managing direct and online marketing, managing retailing wholesaling and logistics

**Managing the marketing activities-** Organizing, implementing,

evaluating and controlling marketing activities, social responsible marketing, retailing, trends in retailing, rural marketing in context of pharmaceutical product

#### **Unit 4: Introduction to Sales Management**

Fundamentals of Sales Management: personal selling, sales process, communication skills. Sales Force Decisions: Job analysis and design, Recruitment and selection, Training the sales force, compensation and motivation of sales force, monitoring and performance evaluation

#### **Unit 5: Territory Management**

Design and sales planning, sales forecast and sales quotas, sales budgeting and control. Sales presentation, negotiation process, Retail communication. Relationship marketing, challenges faced by sales managers, role of e-commerce in selling

#### **Text & References:**

1. Marketing Myopia by Theodore Levitt, HBR September-October 1975
2. Phillip Kotler, Kevin Lane Keller Marketing management, 15<sup>th</sup> edition. Pearson Education India.
3. Marketing management by Kotler, Keller, Koshy & Jha, 14<sup>th</sup> edition
4. Marketing Management by Rajan Saxena; 5<sup>th</sup> edition Publisher: Tata McGraw-Hill Marketing
5. Management by Ramaswamy V S and Namakumari; 5<sup>th</sup> edition Publisher: S Macmillan India Ltd.
6. Douglas J. Dalrymple, William L. Cron, Thomas E. DeCarlo. (2004), "Sales Management", John Wiley & Sons, New Jersey, USA.
7. Ralph W. Jackson, Robert D. Hisrich (1996), "Sales and Sales Management", Prentice Hall, New Jersey, USA.
8. Manfred Krafft, Murali K. Mantrala (2010), "Retailing in the 21<sup>st</sup> century: Current and future trends", Springer, New York, USA

9. Roman G. Hiebing Jr., Scott w. Cooper (2004), “The successful marketing plan: A discipline and comprehensive approach”, Tata McGraw-Hill, USA.

# Communication Skills-I

## Paper Code- MB 107

**Contacts: 2L**

**Credits: 2**

### **Course Overview:**

This course is designed to facilitate the students to communicate effectively by emphasizing on practical communication through refurbishing their existing language skills and also to bring one and all to a common take-off level

**Course Objective:** The objective of this course is:

- To enable students to be an integral part of corporate communication network

### **Course Outcomes:**

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

**CO1:** Understand the role of communication in personal and professional success..

**CO2:** Develop awareness of appropriate communication strategies.

**CO3:** Prepare and present messages with a specific intent

**CO4:** Ethically use, document and integrate sources.

### **Course Content:**

#### **Unit 1:**

Communication Skills-Meaning and Introduction- Process of Communication-Types of Communication-Verbal- Non-verbal - Advantages ,Disadvantages Body Language-Channels of

Communication- Formal and Informal -Directions of Communication within organisation –Barriers to communication-Listening Skills.

## **Unit 2:**

Presentation Skills and confidence building, Aids to Correct business Writing, Email writing, Resume writing, Telephone etiquettes, Group Discussion,, Mind mapping, Networking skills, Soft skills, Facing Interviews-Mock interviews-FAQ, Stress management

## **Text & References:**

1. Sharan J. Gerson and Steven M. Gerson – “Technical Writing – Process and Product” – Pearson Education – 2000.
2. Raymond V. Lesikar, John D. Pettit and Mary E. Flatley – Lesikass Basic Communication Tata McGraw Will 8<sup>th</sup> Edition – 1999.
3. Stevel. E. Pauley, Daniel G. Riordan – Technical Report Writing Today – AITBS Publishing & Distributors, India 5<sup>th</sup> edition – 2000.
4. Robert L. Shurter, Effective letters in business Third Ed. 1983.
5. Communication Skills by Vasantha Patri
6. McGraith – Basic Managerial Skills for all Prentice Hall of India – 6<sup>th</sup> Edition 2002.
7. Halliday, M.A. K R. Hasan, Cohesion in English, Longman, London 1976.

## **Computer Application Lab**

### **Paper Code- MB 108**

**Contacts: 4P**

**Credits: 2**

**Course overview:** The course will expose the students to the developments in computer technology and will help the students understand the application of information technology in the healthcare system.

**Course objectives:** The objectives of this course are to:

- To develop the end-user IT skills
- Learn various computer applications, databases and statistical tools applicable in public healthcare system.

**Course Outcomes:** On completion of this course, the students will be able to:

**CO1:** Understand the concept of Computer's Input/output devices, the concept of databases, data types, MS Word, MS Excel, MS Power Point, array, pointers, string, structures and files.

**CO2:** Design program logic on real-world industry related problems.

**CO3:** Apply programming concepts to compile programs to find solutions.

**CO4:** Apply of IT tools in various functions of pharmaceutical organizations.

**Course Content:**

**Unit1:**

Introduction to Windows: Application in Windows – word processing (MS Word) – Spreadsheet (MS Excel) – Presentation (MS Power Point) – Relational databases (MS Access).

**Unit2:**

Introduction to Databases: Application of Databases – Parts of Databases – Types of Databases – Role of Social Media in today's scenarios-presenting of data-Social Media and Data-Big Data Introduction.

**Unit3:**

Awareness on the application of IT in Various functions of Hospital. Working knowledge of commonly used hospital software, Application of statistical tools through SPSS in the areas of Health services.

## Semester-II

Paper Code	Subject	Periods			Credit Units	Evaluation scheme		
		L	T	P/S		Internal	External	Total
MB 201	Biostatistics			-	4	20	80	100
MB 202	Pharmacoepidemiology	3	1	-	4	20	80	100
MB 203	Organizational Behaviour	3	1	-	4	20	80	100
MB 204	Pharmaceutical Production, Operations and Quality Management	3	1	-	4	20	80	100
MB 205	Pharmaceutical Business Environment	3	1	-	4	20	80	100
MB 206	Pharmaceutical Product and Brand Management	3	1	-	4	20	80	100
MB 207	International Marketing in Pharma Industry	3	1	-	4	20	80	100
MB 208	Communication Skills- II	2	-	-	2	50*	-	50*
YGS 104	Yogic Science	2	-	-	2	10	40	50
YGS	Yogic Science Practical				2	10	40	50
	<b>Total</b>	<b>25</b>	<b>7</b>	<b>4</b>	<b>34</b>	<b>210</b>	<b>640</b>	<b>850</b>

**\*Evaluation to be conducted by internal faculty/examiner.**

**\* At the end of 2<sup>nd</sup> semester mandatory Summer Internship of 4-6 weeks. Internship report will be presented and evaluated during 3<sup>rd</sup> semester.**

# **Biostatistics**

## **Paper Code- MB 201**

**Contacts: 3L + 1T**

**Credits: 4**

### **Course Overview:**

This course intends to teach bio-statistical methods and concepts used in the health sciences, emphasizing interpretation and concepts. It also develops the ability to read the scientific literature to critically evaluate study designs and methods of data analysis. The course also introduces basic concepts of statistical inference, including hypothesis testing, p-values, and confidence intervals.

**Course Objectives:** The objectives of this course are to:

- Develop the understanding of various statistical tools used for decisions making and explain how each tool can be used in the healthcare environment.
- Explain the students different types of data arising in health research; interpret differences in data distributions via visual displays; calculate standard normal scores and resulting probabilities.
- Describe the use of statistical software package SPSS for different hypothesis testing procedures covered in the course.

**Course Outcomes:** After completing the course, the students would be able to:

**CO1** Learn different statistical techniques used in pharmaceutical industry.

**CO2** Learn to make practical use of statistical computer packages.

**CO3** Develop a comprehensive evaluation plan for projects with the help of statistical tools & techniques.

**CO4** Gain knowledge of basic statistical tools with emphasis on their application in industry environment.

**CO5** Learn to write research proposals/reports/projects.

**CO6** Understand the concepts of statistical inference

**Course Content:**

**Unit 1: Introduction to biostatistics**

Classification of data, Source of data, Variables, Scales of measurement- nominal, ordinal, ratio and interval scale, building composite scales, measuring reliability and validity of Scales.

**Unit 2: Measures of central tendency & dispersion**

- Measures of central tendency- Mean, Median, Mode
- Measures of dispersion – Range, Mean deviation & Standard deviation.

**Unit 3: Sampling and Probability distributions**

- Population, Sample, Sampling frame, Sampling process, Types of sampling, sample size Calculation.
- Concepts of Probability distributions– Binomial, Poisson & Normal Probability Distribution.

**Unit 4: Hypothesis testing**

- Null hypothesis, alternative hypothesis, level of significance, how to choose the statistical test
- Non parametric tests: Chi square test, Mann-Whitney U test
- Parametric tests: Student's T-test (One sample t test, Independent sample t test, Paired t-test, ANOVA

**Unit 5: Correlation and regression analysis:**

- Definition, types of correlation, degrees of correlation, Karl Pearson's coefficient of correlation, Spearman Rank correlation
- Regression Analysis: Linear regression, multiple regression

**Unit 6: Statistical methods and application:**

SPSS processing, Statistical procedures-descriptive, univariate, bivariate and multivariate statistics; parametric and non-parametric tests; correlation and regression.

**Text & References:**

1. B.K. Mahajan. Methods in Biostatistics, Jaypee Brothers
2. P.S.S. Sundar Rao. An Introduction to Biostatistics: A manual for students in Health Sciences, J.Richard Prentice Hall, 1996.
3. Daniel, Wayne.W. Bio-Statistics: A foundation for Analysis in the Health Sciences, JohnWiley and Sons Pub, 1991.
4. K. Vishwas Rao. Bio-Statistics: A Manual of statistical methods for use in the Health,Nutrition and Anthropology, Jaypee Brothers Medical Pub, 1996.
5. Verma B.L., Shukla G.D. Bio-Statistics perspective in Health care research and practice,C.B.S. Pub, 1993.
6. Krishnaiah, P.K. Rao, C.R. (ed), Handbook of Statistics, Elsevier Science Pub, 1988.
7. Beri - Business Statistics (Tata Mc Graw Hill 2nd Edition).
8. Chandan J S - Statistics for Business and Economics (Vikas 1998.Ist Edition).
9. Render and Stair Jr - Quantitative Analysis for Management (Prentice-Hall, 7th edition)
10. Sharma J K - Business Statistics (Pearson Education 2nd Edition).
11. Gupta C B, Gupta V - An Introduction to Statistical Methods (Vikas1995, 23rd Edition).
12. Levin Rubin - Statistics for Management (Pearson 2000, New Delhi, 7th Edition)

## **Pharmacoepidemiology**

### **Paper Code- MB 202**

**Contacts: 3L + 1T**

**Credits: 4**

#### **Course Overview:**

The course introduces risk measurement, age adjustment and survival analysis and use of morbidity and mortality indicators. It helps students understand the epidemiological study designs, bias, confounding and disease surveillance. The course also equips the students with knowledge and skills regarding general principles of health related research.

**Course Objectives:** The objectives of this course are to:

- Discuss models and inference underlying observational studies.
- Determine the applications of epidemiology in pharma decision making.
- Explain the uses and effects (beneficial and adverse events) of drugs and biologics in human populations and impact on pharma research.
- Evaluate the scientific merit and feasibility of epidemiological study designs and their use.

**Course Outcomes:** After completing the course, the students would be able to:

**CO1** Identify the applications of pharmacoepidemiology in clinical settings

**CO2:** Discuss the various pharmacoepidemiological outcome measures

**CO3:** Describe the concept of risk in pharmacoepidemiology and different methods of measuring risk

**CO4:** Explain the various pharmacoepidemiological methods

**CO5:** Explain the sources of data for pharmacoepidemiological studies

**CO6:** Explain the various systems for studying drug effects in populations

## **Course Content:**

### **Unit 1:Basic concepts of epidemiology**

Epidemiology: Basic concepts, methods, principles and use of epidemiology. Epidemiological tools for assessment of risks. Investigation of an epidemic and its control.

### **Unit 2:Descriptive epidemiology**

Natural History: History of a disease and its application in planning intervention. Modes of transmission and measures for prevention and control of communicable and non-communicable disease. Diseases: Definition, calculation and interpretation of the measures of frequency of diseases and mortality.

### **Unit 3:Epidemiological measurement methods**

Principal sources of epidemiological data, epidemiological research, summary measures (ratios, proportion and rates), incidence and prevalence, sociometric choice patterns. Uses and abuse of Screening Tests: Accuracy and clinical value of diagnostic and screening tests (sensitivity, specificity & predictive values). Introduction to Pharmacoepidemiology and its application in pharmaceutical industry.

### **Unit 4:Epidemiological study designs and analysis**

Various types of epidemiological study designs. Review of literature for a certain public health problem along with critical comments and formulation of solutions, Epi-info software for epidemiological analysis.

## **Text & References:**

1. Beaglehole. R. Bonita, et. al Basic Epidemiology: WHO Publication, Geneva, 1993.
2. David E., et. al. Foundations of Epidemiology : Oxford University Press, New York, 1984.
3. Epidemiology in health care planning: E.A. Knox (ed), Oxford University Press, New York, 1979.
4. Katz Mitchell: Study Design and Statistical Analysis: A Practical Guide for Clinicians
5. Last, J.M., Spasoff, R.A. Harris, S. S. and Thuriaux, M.C. (Eds): A Dictionary of Epidemiology, Oxford University Press, New York, 4th Ed., 2001.
6. Silman and McFarland: Epidemiological Studies, Practical Guide 2nd Edition
7. Aschengrau and Seage: Essentials of Epidemiology in Public Health
8. Friis Robert: Epidemiology for Public Health Practice, Third Edition
9. Timmreck Thomas C: An Introduction to Epidemiology, Third Edition 2002
10. Text Book of Preventive and Social Medicines - K. Park, M/s BanarasidasBhanot.
11. Preventive and Social Medicine – PrabhakarRao.
12. Text book of Social & Preventive Medicine – Mahajan.

# Organizational Behaviour

## Paper Code- MB 203

**Contacts: 3L + 1T**

**Credits: 4**

### **Course Overview:**

Students study the behaviour of individuals and groups as part of the social and technical system in the pharmaceutical ecosystem. They examine individual and group behaviour, communication, conflict and various management styles, motivational techniques and coordination in the work environment and apply these concepts to the development of an organization's human resources.

**Course Objectives:** The objectives of this course are to:

- Discuss organizational behaviour as well as the roles and responsibilities of management within healthcare organizations through the macro (organization-wide) and micro (individual and team performance) perspectives.
- Analyze and compare different models used to explain individual behaviour related to motivation and rewards, conflict and stress management.
- Understand the concepts like group dynamics, team building, negotiation, leadership styles and the role of leaders in a decision making process.
- Understand organizational strategy and culture, its dimensions, various organizational designs and concept of organizational change.

**Course Outcomes:** After completing the course, students should be able to:

**CO1** Identify the impact of individual behaviour on groups and on the organization as whole

**CO2** Analyze and compare various theories of personality and learning theories

**CO3** Identify the role and importance of communication and resolving conflicts

**CO4** Explain group dynamics and demonstrate skills required for working in groups (team building)

**CO5** Identify the various leadership styles and the role of leaders in a

decision making process.

**CO6**Analyze and compare different models used to explain individual behaviour related to motivation and rewards

## **Course Content:**

### **Unit 1: Introduction to Organizational Behaviour**

Nature Scope and Purpose – Definition of Organizational Behavior, Need, Importance and Emergence of Organizational Behavior — Frame Work – Organizational Behavior Models

The Individual - Foundations of Behaviour, Ability, Personality, Learning. Group and Interpersonal Behaviour, Decision Making, Values, Attitudes, Perception, Applications of Attributes. Individual Values and Ethics-Self-Concept, Self-Esteem and Self-Efficacy-Locus of Control-Abilities and Performance

The Group – Foundations of Group Behaviour, Defining and Classification of Groups, Group Decision Making, Understanding Teams – Types of Teams, Teams and Groups Concepts, Group Dynamics, Emergence of Informal Leaders and Working Norms – Interpersonal Relations – Communication – Control, Team Building

### **Unit 2: Leadership and Motivation**

Meaning – importance – leadership approaches – theories – trait theories, Behavior theories, leaders Vs managers, contemporary issues in leadership. Power and politics - power centers – Organizational politics-tactics. Motivation – concepts, significance, theories: natural, incentive, behaviourist, socio cultural theory, content and cognitive (process) theories, thematic apperception test, attribution theory, approach avoidance, employee motivation- job characteristics model

### **Unit 3: Organisation Dynamics: Culture and Design**

Definition of Organisational Culture, Characteristics of Culture, Strong and Weak types of Culture, Changing Organisational Culture, Differences in Culture and Climate, Assessing Organizational Citizenship Behaviour. Organisational Design - Definition of Organisation, Importance of Organising Process, Organisation Design Process, and Internal Contingency Factors: Technology, External Contingency Factor: Environment and Information processing.

### **Unit 4: Organisational Strategy and Technology**

Introduction, Definition of Strategy, Components of Organisational Strategy, Vision and Mission, Strategy Management Process, Organisational Strategy Implementation, Organisational Issues, Innovation Process, Project Groups, Technology Opportunity, Technological Concepts, Introduction of New Technologies in Organisations.

### **Unit 5: Conflicts, Negotiations & Stress Management**

Definition, Transitions in conflict thought, functional Vs dysfunctional conflict, the conflict process. Consequence of Conflict-Stress, Emergence of Stress, Causes-Copying mechanisms, psychosomatic disorders, consequences, managing stress. Negotiating and Resolution- Conflict Management, managing interpersonal and Inter-group conflict-negotiation tactics, change.

#### **Text & References:**

1. Organizational Behaviour Stephen P. Robbins, Timothy A. Judge, Neharika Vohra, 16<sup>th</sup> edition
2. Organizational Behaviour by Stephen P. Robbins
3. Organizational Behaviour by Fred Luthans
4. Hersey, P and Blanchard, K: Management of Organizational Behaviour
5. Behavioural Processes in Organization by D. M. Pesonjee, T. V. Rao and Udai Pareek

# **Pharmaceutical Production, Operations and Quality Management**

## **Paper Code- MB 204**

**Contacts: 3L + 1T**

**Credits: 4**

### **Course Overview:**

The paper aims to provide the students with a knowledge base to promote the use of best practices and operational excellence within pharmaceutical operations management. The course addresses all operations right from the introduction to operations management, facilities planning, production planning, and selection of raw materials through to the quality aspect of final product.

**Course Objectives:** The objectives of this course are to:

- Understand the basic framework, transformation processes and their extensions in relation to pharma operations
- understand the concept of an operations strategy planning and management
- know standard practices in pharmaceutical product production processes and their quality management
- know the importance of building and equipment layout, regulatory requirements, GMP and cGMP in pharmaceutical production

**Course Outcomes:** After completing the course, students should be able to:

**CO1** Understand various manufacturing operations within the framework of company organization like facility planning, capacity planning, product and process selection, resource allocation with special emphasis on pharmaceutical production

**CO2** Understand the importance and processes involved in location and layout planning, resources planning and production planning and control

**CO3** Understand the importance and application of quality management measures and statistical techniques effectively for the particular operations during Pharmaceutical production.

**CO4** Understand importance of GMP and regulatory issues in various pharma operations.

**CO5** Gain knowledge about effective and efficient purchase, different inventory policies and models, effective and efficient inventory management and control

**CO6** Acquire knowledge of modern concepts and techniques like JIT, Total Quality improvement and MRP.

### **Course Contents:**

#### **Unit 1: Introduction to production and operations management**

Definition, concept and Evolution of Production and operations management, Nature and Scope of production/operations management, Production function and its environment, Functions of production/operations manager, Organization of production function in Pharma industry

#### **Unit 2: Facilities planning**

Product selection and design, service design, Process and technology, selection, Location of manufacturing/service facility, Center of gravity and median models, dimensional analysis, Brown and Gibson model.

#### **Unit 3: Layout planning**

Product layout, process layout, fixed position and group layout, layout design, Relationship based and load-distance cost matrix, Materials handling concepts.

#### **Unit 4: Drug and Pharmaceutical Plants**

Building layout, equipment layout, regulatory requirements for the same, GMP and cGMP

#### **Unit 5: Resources Requirement Planning**

Capacity Planning, Labour Planning

#### **Unit 6: Production planning and control**

Aggregate production planning, Materials Requirement Planning, Operations Scheduling and Production activity control for mass manufacturing, batch processing, projects and job shop production

#### **Unit 7: Materials planning and Inventory**

Need and definition, factors affecting planning- external and internal, dependent and independent demand system, Material Budgeting and Purchasing

Inventory Control: Importance and scope, costs, economic order quantity, Inventory control techniques.

#### **Unit 8: Quality Control & Management**

Quality control functions, Acceptance sampling, Statistical Process control, Application of control charts, Operating characteristic curve and its applications, Total Quality improvement

#### **Text & References:**

1. Operations Management by Bernard Taylor
2. Production and Operations Management by Adam, Ronald and Ebert
3. Production and Operations Management by Aswathappa and Bhat

## **Pharmaceutical Business Environment**

### **Paper Code- MB 205**

**Contacts: 3L + 1T**

**Credits: 4**

#### **Course Overview:**

The course aims at understanding of several factors affecting the business and business operations. This course enables students to learn about business policies, ethical codes and different factors responsible for changing dimensions of corporate environment.

**Course Objectives:** The objectives of this course are to:

- To understand the complex dynamic environment in which organizations operate and compete with each other.
- To analyse the impact of various political, economical, legal and technical factors on pharmaceutical industry.
- To understand how a pharmaceutical organizations' efforts are aimed at using business Opportunities and averting (or neutralizing) dangers.
- To comprehend the role of various factors from environment in industry's growth and development.

**Course Outcomes:** After completing this course, students should be able to:

**CO1** Understand the scope and importance of pharmaceutical environment to prepare different business strategies.

**CO2** Learn to analyze the impact of macro and micro environmental factors on Pharmaceutical Business.

**CO3** Identify and demonstrate the business strategies according to opportunities and threats persist through external environment.

**CO4** Learn to prepare competitive strategies for the growth and development of pharmaceutical business.

## **Course Content:**

### **Unit 1: Introduction to Business Environment**

Meaning & Importance of Business Environment, Dimensions of Business Environment, Impact of Internal & External Environment of Business on Pharmaceutical Industry

### **Unit 2: Environmental Scanning or Analysis**

Various Processes for Environmental Analysis, PEST Model, Structural Industry Analysis (Porter's Five Forces), SWOT Analysis, Changing Market Access Strategies in Pharmaceutical Industry

### **Unit 3: Political, Social and Economical cultural environment of business**

Concept of Economic Environment of Business, Component (fiscal and monetary policy) and development (pre-globalisation), Political legal environment for pharmaceutical business.

### **Unit 4: Evolution of Indian Pharmaceutical Industry**

Different Evolution Phases of Indian Pharmaceutical Industry, Present status of Indian Pharma Industry (Present value, Key Players, Indian Bulk Drug Market)

### **Unit 5: Global Pharmaceutical Business Environment**

International and technological environment: Global Pharma Developments, Multinational Corporation, Mergers & Acquisitions of pharmaceutical industry at global level & India level, International Financial Environment (FDI, FDI in Drugs & Pharmaceuticals).

### **Unit 6: Strategies & Trends – Research & Development in Pharmaceutical Industries**

Various types of Research, R& D Funds, Pharmaceutical research and development support fund (PRDSF), R & D Opportunities, and Contract research Opportunities, Research in generics, Changing the conventional façade of drug discovery research, Six Sigma and its approach to drug discovery.

## **Text & References:**

1. Business and Government by Francis Cherunilam
2. Business Environment by F. Cherunilam
3. Business Environment by Raj Aggarwal and Parag Diwan
4. International Business Environment and Management by V K Bhall and S Shiva Ramu
5. Government and Business by N K Sengupta
6. World Trade Organization by Anne Krueger
7. Indian Constitution by D DBasu
8. Constitution of India by P M Bakshi
9. Technology Acquisition and Application: Interpretation of the Indian Experience by A V Desai
10. Technology and Economic Development The Indian Case by Debashish Mallick
11. Multinational Corporations in India by Shiva Ramu
12. Business Laws by N D Kapoor
13. Business Policy and Strategic Management by W F Glueck and Jauch

# Pharmaceutical Product and Brand Management

## Paper Code- MB 206

**Contacts: 3L + 1T**

**Credits: 4**

### **Course Overview:**

The course aims at an understanding of pharma product and brand management skills and techniques that are commonly applied in industry. The course has been designed to provide an effective training on concepts as well as practical knowledge related to pharma products and brands and to help learners nurture their idea by taking them through the entire product lifecycle.

**Course Objectives:** The objectives of this course are to:

- Understand concept of product and product management
- Describe different elements of a pharma product mix, product life cycle and brand
- Demonstrate understanding of the product planning and pricing strategy concepts
- Train the learners on branding and product promotion methods and techniques used in pharma industry

**Course Outcomes:** After completing this course, students should be able to:

**CO1** Understanding the technique and skills related to pharmaceutical product development and brand positioning.

**CO2** Describe different elements of a pharmaceutical product mix, product life cycle and brand.

**CO3** understanding the pharmaceutical product planning and pricing strategy concepts

**CO4** Learn the recent techniques applied for branding and product promotion methods and techniques used in pharma industry.

## **Course Content:**

### **Unit 1: Introduction to Product Management**

Definition, role of product management and scope of product management, product levels, societal classification of the product by Kotler, classification of pharma products, market research and its contribution in product development and management

### **Unit 2: New Product Development, Product Mix and Product life-cycle**

Definition of new product, type of new products, product innovation, Roger's diffusion of innovation curve, technology product life cycle management, product portfolio management strategies, product mix and product line strategies, product life cycle concept and its linkage with the pharmaceutical industry.

### **Unit 3: Product Planning and Pricing Strategies**

Introduction, objectives of product planning, components of product planning, product portfolio planning, product-line decisions, product mix decisions, pricing, importance of price, objectives of pricing, factors influencing the price determination, pricing policies, pricing methods or determination or the price of pharma product

### **Unit 4: Branding of the Pharma Products**

What is a Brand: History, branding elements- brand identity, brand personality, brand communication, Brand Name, Brand Image, Brand Value and Brand Awareness, Concept of Brand Equity, difference with brand valuation, Five dimensions of Brand Equity, key influencers of each dimension, prescription loyalty, prescriber coverage frequency, brand exposure through field-force promotion, Quality indicators, Promotional-mix, Benefits of building Brand Equity, brand positioning and difference with consumer brands, Branding process, pharma branding process and strategies, OTC generic and prescription product branding, reinforcing and revitalizing pharmaceutical brands

## **Unit 5: Pharma Product Promotion**

Defining promotion, promotional strategies, and issues in pharma product promotion, approaches for pharma product promotion Product-mix Optimization & Promotional-mix Optimization: Portfolio Analysis by factoring key determinants, BCG Matrix, brand building decisions; leveraging the Promotional-mix for Brand Building.

\* A **Brand Fair** will be organized by students as part of the course assessment. This will give students the Opportunity to showcase their creativity.

### **Text & References:**

1. Product Management in India by Majumdar, R.
2. Marketing Management: Planning by Ramaswamy, V.S. and Namakumari, S. Marketing by Zikmund, A.
3. Innovating Organization, edited by Pettigrew &Fenton
4. Marketing Research - Measurement and Method by Tull and Hawkins
5. Strategic Brand Management by Kevin Keller
6. Brand Positioning by Sen Gupta
7. Managing Indian Brands by Ramesh Kumar

# **International Marketing in Pharma Industry**

## **Paper Code- MB 207**

**Contacts: 3L + 1T**

**Credits: 4**

### **Course Outcomes:**

With successful completion of this course students will learn: To develop an understanding of major issues related to international marketing and also enabled to develop skills in researching and analyzing trends in global markets and in modern marketing practice. They will be able to assess an organization's ability to enter and compete in international markets.

**Course Objectives:** The objectives of this course are to:

- Gain knowledge and make understanding of key issues associated with international marketing and to
- Develop skills in researching and analyzing international marketing opportunities.
- Understand the motives to internationalization
- Understand the influence of macro-environment on market selection and on market entry modes
- Attain knowledge of financial, ethical, and organizational issues involved in international marketing.

**Course Outcomes:** After completing this course, students should be able to:

**CO1** Understand and learn the importance of global and international marketing in pharmaceutical sector

**CO2** Discuss and identify the different macro environment factor influence in international market selection.

**CO3** Learn the major issues affecting the marketing mix in pharmaceutical industry

**CO4** Demonstrate and learn the Financial, ethical, and organizational issues involved in international marketing

**CO5** Learn the multicultural aspects applied in international organization for international business.

## **Course Contents:**

### **Unit 1: Basics of International Pharmaceutical Marketing**

Introduction to Pharmaceutical Marketing , Scope of International Pharmaceutical Marketing, International Marketing vs. Domestic Marketing, Principles of International Marketing, Customer value and the value equation, Competitive or differential advantage, Management Orientations, MNCs and TNCs, Benefits of international marketing.

### **Unit 2: International Marketing Environment**

Introduction, Political Environment, Political systems, legal and Regulatory Environment, Socio-cultural Environment, Economic Environment, Technological Environment, Challenges in Global Marketing.

### **Unit 3: International Trade Organization (GATT, WTO)**

Introduction, classical trade theories, modern trade theories, trade barriers, quotas, Implications of Tariffs, Types of Agreements, General Agreement on Tariffs and Trade (GATT), Functions and Objectives of WTO, Implication of WTO on International Marketing, India's Role in International Trade Theories.

### **Unit 4: International Marketing Research**

Introduction, Concept of Marketing Research, Need for Marketing Research, Approach to Marketing Research, Scope of International Marketing Research, International Marketing Research Process, market surveys, marketing information system

### **Unit 5: Negotiation and Decision Making**

Negotiating with Intentional Customers, Partners, and Regulators,  
Global E-marketing

### **Unit 6: Product Policy and Planning for International Markets**

Introduction, Products: National and International, the new Product Development, International Product Planning, Product Adoption and Standardization, International Market Segmentation, Influences on Marketing Plan and Budget, International Product Marketing, Marketing of Services

### **Unit 7: International Pricing Policy**

Introduction, Price and Non-Price Factors, Methods of Pricing, International Pricing Strategies, Dumping and Price Distortion, Counter Trade

### **Unit 8: Terms of Payment and Delivery**

Advance of payment, Open Account System, Consignment Sale, Documentary Collection, types of payment, types of dumping, counter trade, transfer pricing, Grey marketing

### **Unit 9: International Logistics and Distribution Planning**

Introduction, International Distribution, Direct and Indirect Channels, Factors involved in Distribution Systems, Value Chain Concept, Modes of Transportation

### **Unit 10: Communication Decision for International Markets**

Introduction to Communication in Marketing, Global Communication Strategy, Factors influencing Communication Decisions

### **Unit 11: Export Procedures and Policies**

Procedure of Export, Example of Export Procedure, Enquiry, Quotation, Order Receipt and Acceptance, Finance, Production and Packing, Excise Clearance, Export Documents, Cargo Insurance and Shipping Space Reservation, Customs Clearance, Receipt of Shipment Documents from C&F Agent, Shipment Advice to Buyer, Presentation of Shipment Documents to the Negotiating Bank, Presentation of Documents for Payment to Foreign Bank by the Negotiating Bank, Export Incentives, Functions

### **Unit 12: Export Documentation**

Significance of Export Documentation, Declaration Forms, Major Documents, Export Documentation Requirements in India

### **Unit 13: International Financial Institutions**

Introduction, IMF, World Bank – IBRD, International Finance Corporation, Organisation for Economic Cooperation and Development (OECD)

### **Text & References:**

1. International Marketing, 6<sup>th</sup> edition, ISBN 981-240-244-6, by Subhash C. Jain.
2. Masaaki Kotabe, Kristian Helsen “Global Marketing Management”
3. Joshi, Rakesh Mohan – International Marketing
4. Simon Majaro- International Marketing
5. Export Marketing by B.S. Rathore
6. Export Procedures and Documents by S.C. Jain
7. Global Marketing by Keegan

## **Communication Skills-II**

### **Paper Code- MB 208**

**Contacts: 2L**

**Credits: 2**

#### **Course Overview:**

This course is designed to facilitate the students to communicate effectively by emphasizing on practical communication through refurbishing their existing language skills and also to bring one and all to a common take-off level

**Course Objective:** The objective of this course is to:

- To enable students to be an integral part of corporate communication network.

**Course Outcomes:** On completion of this course, the students will be able to:

**CO1:** Understand the different types of personalities.

**CO2:** Learn time management and diversity management in healthcare settings.

**CO3:** Understand human behaviour and communication, its role in public health problems and solutions.

#### **Course Content:**

##### **Unit 1**

Types of personalities- The Assertive personality-Personality Tests; Goal setting and achievement

##### **Unit 2**

EQ and IQ; Aptitude tests; Creative problem solving/Innovative thinking; Transactional analysis

**Unit 3**

Time management; Managing change; Conflict management; Managing meetings; Attitude

**Unit 4**

Diversity management; Leadership and team building; Personal impact; Corporate etiquettes

**Unit 5**

Human behaviour and communication, its role in public health problems and solutions

**Unit 6**

Evidence based advocacy; Consensus building

**Text & References:**

1. Sharan J.Gerson and Steven M.Gerson – “Technical Writing – Process and Product” – Pearson Education – 2000.
2. Raymond V.Lesikar, John D. Pettit and Mary E.Flatley – Lesikass Basic Communication Tata McGraw Will 8<sup>th</sup> Edition – 1999.
3. Stevel. E. Pauley, Daniel G.Riordan – Technical Report Writing Today – AITBS Publishing & Distributors, India 5<sup>th</sup> edition – 2000.
4. Robert L.Shurter, Effective letters in business Third Ed. 1983.
5. Communication Skills by Vasantha Patri
6. McGraith – Basic Managerial Skills for all Prentice Hall of India – 6<sup>th</sup> Edition 2002.
7. Halliday, M.A. K R Hasan, Cohesion in English, Longman, London 1976.

## **Yogic Science Practical**

### **Paper Code- YGS104P**

**Contacts: 4P**

**Credits: 2**

#### **Course Overview:**

The course imparts overview of history, tradition and branches of Yoga. Students are also oriented about different types of Yogasanas, their importance, methods, rules, regulations and limitations.

**Course Objectives:** The objectives of this course are to:

- Understand the basic concepts and types of Yoga
- Apply the principles of Yoga to live healthy and active lifestyle.
- Promote the awareness of health through yoga.
- Explain health plans and recipes in different lifestyle diseases.

**Course Outcomes:** On completion of this course, the students will be able to:

**CO1:** Learn the procedures of Pranayama and be able to execute these.

**CO2:** Introduce a regular and rigorous practice of yoga for lifestyle management.

**CO3:** Learn the procedures of different Yogasanas, Shatkarmas and be able to execute these and guide others in practice.

#### **Course Content:**

### **HATH YOGA**

#### **Unit 1:Asana**

- SukshmaVyayam (Joints Movement)

### **Backward Bending Asanas**

- Sarpasana (snake pose)
- Bhujangasana (cobra pose)
- ArdhaShalabhasana (half locust pose)
- Shalabhasana (locust pose)
- Dhanurasana (bow pose)
- Kandharasana (shoulder pose)

### **Forward Bending Asanas**

- Paschimottanasana (back stretching pose)
- JanuSirshasana (head to knee pose)
- PadaHastasana (forward bending pose)

### **Meditation Asanas**

- Sukhasana (easy pose)
- Padmasana (lotus pose)

### **Vajrasana Group of Asanas**

- Vajrasana (thunderbolt pose)
- Padadhirasana (breath balancing pose)
- ShashankBhujangasana (striking cobra pose)
- Ustrasana (camel pose)

### **Digestive/Abdominal Asanas**

- Pawanmuktasana
- Uttanpadasana (raised legs pose)
- Nukasana (boat pose)

## **Standing Asanas**

- AkarnaDhanurasana (bow and arrow pose)
- Tadasana (palm tree pose)
- TiryakaTadasana (swaying palm tree pose)
- Kati Chakrasana (waist rotating pose)
- Dwikonasana (double angle pose)
- Trikonasana (triangle pose)

## **Spinal Twisting Asanas**

- BhūNamanasana (spinal twist prostration pose)
- ShavaUdarakarshanasana (universal spinal twist)
- ArdhaMatsyendrasana (half spinal twist)

### Balancing Asanas

- EkPadaPranamasana (one-legged prayer pose)
- Natarajasana (Lord Shiva's pose)

### Relaxation Asanas

- Shavasana (corpse pose)

### Advanced Asanas

- Chakrasana (wheel pose)
- Brahmacharyasana (celibate's pose)

## **Unit 2:Pranayama**

- Narishodhan(psychic network purification)
- Ujjayi(psychic breath)
- Kapalbhatai (frontal brain cleansing breath)
- Bhastrika(bellows breath)
- Bharamri(humming bee breath)
- Surya Bhedi(vitality stimulating breath)
- Chandra Bhedi
- Sheetali (cooling breath)

### **Unit 3:Bandh**

- JalandharaBandh(throat lock)
- UddiyanBandh (abdominal contraction)
- MoolaBandh (perineum contraction)
- MahaBandh (great lock)

### **Unit 4:Mudra**

- Giyan Mudra (chin mudra)
- Hridaya Mudra (heart gesture)
- Bhoochri Mudra (gazing into nothing)
- Yoga Mudra (Attitude of psychic union)
- Shambhavi Mudra (eyebrow centre gazing)

### **Unit 5:Shat-karma**

- Kapalbhati
- Neti, Jala (nasal cleaning with water)
- Agnisara (activating the digestive fire)

# **Summer Project Report On Industry Practices/Operations (Including Industry Visit)**

**Credits: 4**

## **Summer Training Objective:**

To provide on the job experience, as an understudy in a hospital, to help the student understand systems and procedures and learn to make decisions considering the Hospital as an integral unit.

**Duration:** 4-6 Weeks

## **Format for Report Writing:**

1. Abstract
2. Introduction
3. Aims & Objectives
4. Operational definitions
5. Significance of Study
6. Review of literature
7. Research methodology
8. Data Analysis
9. Results
10. Discussion
11. Conclusion
12. Recommendations
13. Limitations of study
14. Future prospects of study
15. References

### Semester – 3

Semester	Paper Code	Subject	Periods			Credit Units	Evaluation scheme		
			L	T	P		Internal	External	Total
<b>3</b>	MB 301	Supply Chain Management	3	1	-	4	20	80	100
	MB 302	Strategic Planning & Management	3	1	-	4	20	80	100
	MB 303	Drug Regulatory Affairs & Intellectual Property Rights (DRA& IPR)	3	1	-	4	20	80	100
	MB 304	Financial Management & Budgeting	3	1	-	4	20	80	100
	MB 305	Consumer Behaviour, Advertising & OTC	3	1	-	4	20	80	100
	MB 306	Project Management	3	1	-	4	20	80	100
	MB 307	Summer Internship Report Evaluation			-	4	100	-	100
		<b>Total</b>	<b>18</b>	<b>6</b>	<b>-</b>	<b>28</b>	<b>220</b>	<b>480</b>	<b>700</b>

**\*Evaluation will be done for Summer Internship Report (done after second semester)**

# Supply Chain Management

## Paper Code- MB 301

**Contacts: 3L + 1T**

**Credits:4**

### **Course Overview:**

The objective of this course is to help the students understand the design pharmaceutical supply chain management with major stakeholders. The skill and coordination required of scientific, technical, and business experts in bringing new medicines to market is immense. There is, however, the potential to make those efforts significantly more productive by thinking in Supply Chain Management (SCM) terms from the earliest stage of drug development to large-scale phase III and postmarket (phase IV) trials and commercial sale in global territories. The world is now changing its attitude to prescription medicines, with issues of cost, integrity (adulteration and counterfeiting), quality, efficacy, and safety all moving the supply chain center stage.

Some of the areas of responsibility involved in Pharmaceuticals SCM include purchasing, procurement, Supply management, Operations, Production management, Inventory management and control, Production and material planning, Demand planning, Transportation and Warehouse management.

**Course Objectives:**The objectives of this course are to understand:

- Importance and objective of Supply Chain Management, Drivers of Supply Chain Performance – Facilities, Inventory, Transportation, Information, Sourcing and Pricing.
- Models for facility location and capacity allocation, Drug Procurement Process and Quantifying Drug Requirements.
- Demand Forecasting in Supply Chain, Aggregate Planning in Supply Chain
- Transportation Problem in Supply Chain, Warehouse Management and Medical Stores Management
- Computerized Medical Logistics System-TNMSC Model and HR Issues in Warehousing

**Course Outcomes:** After completing this course, students should be able to:

**CO1** Describe the basic concept and objective of supply chain management in pharmaceutical industry

**CO2** Learn the procurement and quantification method in pharmaceutical supply chain management.

**CO3** Understand the different forecasting method and inventory methods for better planning of supply chain management.

**CO4** Plan and implement the better transportation system and warehouse system for healthcare commodities.

**CO5** Discuss and understand the different computerized medical logistic systems run by different state government in India.

**Course Contents:**

### **Unit 1: Introduction to Pharma Supply Chain Management**

What is Supply Chain?, The Objective of a Supply Chain, The Importance of Supply Chain Decisions, Drivers of Supply Chain Performance – Facilities, Inventory, Transportation, Information, Sourcing and Pricing.

### **Unit 2: Procurement and Distribution**

Procurement policy in the pharmacy, Efficient transparent management, Selection of Pharmaceuticals, Supplier selection and Quality Assurance, Supply of Medicine, financing and competition. Distribution of pharmaceuticals to wards and health facilities, Transporting drugs safely.

### **Unit 3: Quantifying Drug Requirements**

Why quantify?, District Action Planning, Quantification Process, Quantification methods, Details of Consumption Method, Quantification of drugs calculation sheet, VEN and ABC analysis.

### **Unit 4: Drug Stores Management**

Procurement information, Stock Records, Flow of Stock and Paper Code work, Inspection for Drug receipts, Discrepancy report, Stock control using FIFO basis, Inventory Tracking, Housekeeping, Disposal of Expired or Damaged Stock.

### **Unit 5: Demand Forecasting in Supply Chain**

The Role of Forecasting in a Supply Chain, Characteristics of Forecasts, Components of a Forecast and Forecasting Methods, Time-Series Forecasting Methods, Measures of Forecast Error.

### **Unit 6: Planning and managing inventories in Supply Chain**

The Role of Inventory in a Supply Chain, Material Management, Inventory and EOQ Model Economies of Scale to Exploit Quantity Discounts, ABC and VEN analysis.

### **Unit 7: Warehouse Management**

Considerations while constructing a medical store, designing a medical store, Materials Handling equipment, Store layout planning, Cold Chain Management.

### **Unit 8: Government Medical Logistics System**

Organogram chart, Activities, services of RMSC, TNMSC model, Quality assurance, challenges, sustainability and lesson learnt from the above Model.

### **Text & References:**

1. Ree Hedley, "Supply Chain Management - Delivering Patient Value for Pharmaceuticals and Biologics, (2012), John Wiley & Sons Inc., USA.
2. Simchi-Levy, D., Kaminsky, P. & Simchi-Levy, E., Managing the Supply Chain: The Definitive Guide for the Business Professional, (2012), Tata McGraw-Hill, New Delhi.
3. Cohen, S. & Roussel, J., Strategic Supply Chain Management, McGraw-Hill, (2012), USA.
4. Chopra Sunil, Mendle Peter, "Supply Chain Management - Strategy, Planning, and Operation", Pearson Education, Inc., USA.

# **Strategic Planning and Management**

## **Paper Code- MB 302**

**Contacts: 3L + 1T**

**Credits: 4**

### **Course Overview:**

This course is designed to enable participating students to gain knowledge and understanding in theory and practice of building competitive, advantage, managing the boundaries and expanding the scope of organisations, Engage with some of the ideas and perspectives about research paradigms in relevant contemporary management literature and relate those to understand and evaluate strategic management theory and practice.

**Course Objectives:** The objectives of this course are to:

- Articulate the importance of multiple research paradigms in understanding Strategic Management issues
- Apply multiple research paradigms in gaining a deeper understanding of Strategic Management practices
- Work with classmates in ways that foster collaborative enquiry
- Develop the art of writing academic essays, reports and proposals in organisational contexts
- Encourage confidence to present a business case orally in front of classmates

**Course Outcomes:** After completing the course, students should be able to

**CO1** Understand fundamentals of strategy including its scope, intent and importance, core competencies of business

**CO2** Know about the need, scope, key features, importance and limitations of strategic management, role of strategists

**CO3** Study the types of strategies, strategy analysis and its importance, Strategic Advantage Profile, Strategic Management Models

**CO4** Understand the concepts of strategy formulation and implementation, strategy failure and strategy leadership with reference to pharmaceutical industry

**CO5** Understand the process of strategic control and evaluation, concepts like forecasting and decision strategy in pharmaceutical industry

**CO6** Know about strategic alliances and their types, their role and importance in pharmaceutical business, problems involved in strategic alliance

### **Course Contents:**

#### **Unit 1: Introduction to Strategies**

Introduction, Fundamentals of Strategy, Conceptual Evolution of Strategy, Scope and Importance of Strategies, Purpose of Business, Difference between Goals and Objectives of Business, Strategic Intent through Vision and Mission Statements, Core Competencies of Business, Core Values of a Strategic Plan: Leadership, Collaboration, Integrity, accountability, Passion, Diversity

#### **Unit 2: Strategic Management**

Introduction, Strategic Management, Need, scope, key features and importance of strategic management, Role of Strategists in Decision Making, strategists at various management levels, Types of Strategies, Limitations of Strategic Management

### **Unit 3: Strategy Analysis, Formulation and Implementation**

Introduction, Strategy Analysis and its Importance, Environmental Appraisal and Scanning Techniques, Organisational Position and Strategic Advantage Profile, Strategic Management Model, Strategy Formulation and its process, Strategy Implementation and its Stages, Strategic implications of five competitive forces, Formulating Functional level Strategies , Reasons for Strategy Failure and Methods to Overcome, Strategy Implementation, Strategic Business Units (SBUs)

### **Unit 5: Strategic Control and Evaluation**

Introduction, Strategy Evaluation, Strategic Control, Difference Between Strategic Control and Operational Control, Concept of Synergy and its Meaning, Key Stakeholder's Expectations

#### **Text & References:**

1. Strategic Management and Business Policy by Thomas L. Wheleen and J. David Hunger, Eight Edition, Prentice Hall
2. Strategic Management, Concepts and cases, 15th edition by Arthur A. Thompson, Jr. And A. J. Strickland III
3. Exploring Corporate Strategy by G. Johnson & K. Scholes: Prentice Hall

**Drug Regulatory Affairs & Intellectual Property  
Rights (DRA & IPR)  
Paper Code- MB 303**

**Contacts: 3L + 1T**

**Credits: 4**

**Course Overview:**

After the completion of course students are able to perform the patent search and having knowledge about patent drafting, the student also learn about managing the documents related to CTD, DMF and dossier as per the regulatory guidelines. The student also gain knowledge about the national and international guidelines pertaining to pharmaceutical regulatory framework. They can perform various assignment related to pharmaceutical regulatory scientist in industry.

**Course Objectives:** The objectives of the course are to:

- Managing and implementing the knowledge about the Intellectual property rights, Patent law and drug regulatory affairs pertaining to pharmaceutical industry
- Drafting of claims pertaining to patent innovation
- Understand the regulatory frame work in developed and under developing countries for drugs and formulary.

**Course Outcomes:** After completing this course, students should be able to:

**CO1** Learn and understand the planning and managing IPR and Drug Regulatory affairs in Pharmaceutical industry

**CO2** Describe the basic concepts and regulatory framework pertaining to pharmaceutical business

**CO3** Discuss and understand the patent filling procedure in national and international countries

**CO4** Demonstrate and plan better compliances of regulatory guidelines in pharmaceutical industry

## **Course Contents:**

### **Unit 1: Drug regulation**

History of drug regulation in India, Indian drug regulatory system, The Drug and Cosmetics act, Global environment regulation, Regional collaboration for drug regulation.

### **Unit 2: Drug approval process**

Filing of INDA, NDA & ANDA in USFDA, International licensing in EU countries, International licensing in African and Asian countries

### **Unit 3: Active Pharmaceutical Ingredient (API) regulatory process**

API regulatory process in pharmaceutical industry

### **Unit 4: Industrial Documentation**

Clinical data systems, Electronic submission, File Formats for electronic documents, Procedure for sending electronic submission for archive, ICH M2-eCTD/International Standardization efforts

### **Unit 5: Pre TRIPS & WTO**

Indian Patent law in Pre TRIPS, World Trade Organization (WTO)

### **Unit 6: Intellectual Property Right (IPR)**

Introduction to various IPR, Development of IP law in India, Introduction of IP law in India, World Intellectual Property Organization (WIPO), Patent Filing in India, Patent law & Indian pharmaceutical industries, Drug patent challenges in US, Regional collaboration for drug regulation, Patent Infringement.

### **Text & References:**

1. Generic Drug Product Development, Solid Oral Dosage forms, Leon Shargel and IsaderKaufer, Marcel Dekker series, Vol.143, Pharmaceutical Regulatory Process, Edited by IraR. Berry Marcel Dekker Series, Vol.144
2. New Drug Approval Process: Accelerating Global Registrations By Richard A Guarino, MD, 5th edition, Drugs and the Pharmaceutical Sciences, Vol.190.
3. Guidebook for drug regulatory submissions / Sandy Weinberg. By John Wiley & Sons. Inc.
4. Good Laboratory Practice Regulations, 2nd Edition, Sandy Weinberg Vol. 69, Marcel Dekker Series, 1995.
5. Quality Assurance of Pharmaceuticals- A compedium of guide lines and related materials Vol I & II, 2nd edition, WHO Publications, 1999.
6. What everyone should know about patents by N.R. Subbaram
7. TRIPS and pharmaceutical industry by Manish shiya
8. New patent regime by Shibashish Chakraborty

# Financial management & Budgeting

## Paper Code- MB 304

**Contacts: 3L + 1T**

**Credits: 4**

### **Course Overview:**

Enable the students to understand the basic concept of Corporate Finance, practical applications of time value of money and evaluating long term investment decisions. Develop analytical skills to select the best source of capital, its structure on the basis of cost of capital. Helps the future managers in understanding the recent trends of primary and secondary market and develop skills for application of various financial services.

**Course Objective:** The objectives of this course are:

- To provide the concepts and foundations of managing finance in business enterprises.
- To provide the concepts and foundations of managing finance in business enterprises.
- To orient the students regarding financial management practices in Indian companies and Global enterprises

**Course Outcomes:** After completion of course students will be able to:

**CO 1** Understand the meaning of Business finance, the aims of finance function, organization structure of finance, various financial decisions, financial planning and the different steps in financial planning, financial goals of the firm and agency problems

**CO2** Explain the importance of Time value of Money and different technique to compute the time value of money, calculate the future value and present value

**CO3** Describe various types of financial decisions, sources of fund: long term and short term, capital structure, types of leverages

**CO4** Understand the cost of capital, methods of computing cost of capital: like cost of equity, cost of debt and weighted average cost of capital

**CO5** Enumerate the types capital budgeting techniques: payback

period, ARR, IRR, MIRR, NPV, Profitability Index and capital rationing and select the proposal based on this

**CO6** Understand the importance of working capital, maintaining adequate working capital

**Course Contents:**

**Unit 1: Introduction to Finance & Corporate Finance**

Finance & its scope, Financial Decisions, Sources of Finance, Time Value of Money ,Profit maximization vs. Wealth maximization, Functions of Finance Manager in Modern Age, Corporate Finance Introduction:– Nature and Scope . Concept of Risk and Return.

**Unit 2: Time value of Money**

Compounding, Continuous Compounding, Effective Rate of Interest, Discounting – Single Cash Flows &Series of Cash Flows, Annuity – Future Value and Present Value, Present Value of Growing Annuity, Perpetuity – Present Value, Growing Perpetuity – Present value, Equated Annual Instalments, Valuation of bonds and shares.

**Unit 3: Investment Decision:**

**Capital Budgeting Decisions:** Discounting and Non discounting techniques, Calculation of Net present value (NPV) and IRR, Excel Application in Analyzing Projects.

**Cost of Capital:** Concept of Opportunity Cost, Cost of Debenture, Preference and Equity capital, Composite Cost of Capital, Cash Flows as Profit and components of Cash Flows, Capital asset pricing model (CAPM).

**Financing Decision:** Capital Structure: Relevance and Irrelevancy theory, Leverage analysis – Types and Measurement along with its implications, EBIT EPS Analysis, Point of Indifference.

**Unit 4: Working Capital Management:**

Concept of working capital, factors determining working capital, Sources of working capital, estimating working capital needs, Managing cash, marketable securities, debtors and inventory.

**Dividend Decision:** Factors affecting Dividend Policy, Forms of Dividends, Types of Dividend Policies, Dividend Models: Walter

and Gordon Model, Miller- Modigliani (MM) Hypothesis.

### **Unit 5: Indian Financial System**

Role of Financial Institution, Primary and Secondary Market, Lease Financing, Venture Capital, Mutual Funds. Introduction to derivatives.

#### **Text & References:**

1. Khan and Jain - Financial Management (Tata McGraw Hill, 7th Ed.)
2. Pandey I M - Financial Management (Vikas, 11th Ed.)
3. William Hakka BettnerCarcello- Financial and Management Accounting (TMH-16th Ed.)
4. Sheebakapil-Fundamental of financial management (Wiley, 2015)
5. Prasanna Chandra - Fundamentals of Financial Management (TMH, 9th Ed.)
6. V. Rajesh Kumar, "Financial Management", Mc Graw Hill Education.
7. Singh and Srivastava- Business Finance (Prayagpustakbhavan 3<sup>rd</sup> Ed.)

# Consumer Behaviour, Advertising & OTC

## Paper Code- MB 305

**Contacts: 3L + 1T**

**Credits: 4**

### **Course Overview:**

The need for marketers to understand why consumers act as they do in the marketplace is the crux of this subject. Students are equipped with theoretical and conceptual knowledge of consumer behaviour, drawing heavily on both psychological and sociological viewpoints. This includes the psychology of individual decision-making and choice, patterns of behaviour exhibited by aggregate groups of consumers, and also the sociological and cultural influences on consumer attitudes and behaviour. This prepares students for making informed decisions about how to manage and respond to the needs and wants of consumers.

**Course Objective:**The objectives of this course are to:

- Gain knowledge of consumer behaviour concepts to develop better marketing programs and strategies to influence those behaviours.
- Critically evaluate the effectiveness of various advertisement and promotions and their attempts to influence the behaviours of individuals.
- Analyze the trends in consumer behaviour, and apply them to the marketing of an actual product or service.

**Course Outcomes:** After completing the course, students should be able to

**CO1** Understand the concepts of Consumer Behaviour, Consumer Research, Consumer Behaviour and Marketing Strategy in pharma industry

**CO2** Know about internal factors like Personality, Self-Image, and Lifestyle, Consumer Perception, Consumer Learning, Consumer Attitude in relation to pharmaceutical products

**CO3** Understand role of external factors affecting consumer

behaviour and decision making including culture and subculture, social class, reference groups and family

**CO4** Understand the concept and role of pharmaceutical advertising, OTC advertising and pharmaceutical branding

### **Course Contents:**

#### **Unit 1: Introduction to Consumer Behaviour and Consumer Research**

Introduction to Consumer Behaviour, Consumer Research, Consumer Behaviour and Marketing Strategy

#### **Unit 2: Internal Influences on Consumer Behaviour**

Motivation and Involvement, Personality, Self-Image, and Lifestyle, Consumer Perception, Consumer Learning, Consumer Attitude Formation and Change, Communication and Consumer Behaviour

#### **Unit 3: External Influences on Consumer Behaviour**

The Influences of Culture on Consumer Behaviour, Subcultures and Consumer Behaviour, Social Class and Consumer Behaviour, Reference Groups and Family, Consumer Influence and the Diffusion of Innovations

#### **Unit 4: Consumer Decision Making**

Consumer Decision Making-Process, Consumer Decision Making-Outcomes

#### **Unit 5: Consumer Behaviour and Society**

Consumer rights, Deceptive advertising and Consumer education and consumerism.

#### **Unit 6: Nature and scope of advertising**

Concept of Pharmaceutical advertising, changing concepts of advertising, functions and types of advertising, economics and social effects of advertising.

#### **Unit 7: Role of Advertisement in OTC**

The Rx to OTC switches strategies, OTC branding, marketing mix

in OTC advertisement, and the role of advertising in pharmaceutical branding.

**Text & References:**

1. Leon Schiffman, Leslie Kanuk, and Mallika Das. Consumer Behaviour. Canadian (1st) edition. Pearson Education, 2006. Type: Textbook. ISBN: 0131463047
2. Consumer Behaviour by Engell and Blackwell
3. Consumer Behaviour by Walters
4. Consumer Behaviour by Holleway, Mattelshaedit and Venkatesan
5. Brand Medicine, The Role of Branding in Pharmaceutical industry by Tom Blackett & Rebecca Robins

# **Project Management**

## **Paper Code- MB 306**

**Contacts: 3L + 1T**

**Credits: 4**

### **Course Overview:**

Students will become acquainted with: the concepts of Project Management for planning to execution of projects. To understand the feasibility analysis in Project Management and network analysis tools for cost and time estimation. The subject will strengthen their ability to convert a valuable idea into a fruitful business Opportunity.

**Course Objective:** The objectives of this course are to:

- Understand project features and various stages of a project.
- To know the conceptual clarity about project organization and viability analyses like – Market, Technical, Financial and Economic.
- Analyze the learning and understand techniques for Project planning, scheduling and Execution Control.
- Apply the risk management plan and analyse the role of stakeholders.
- Know the contract management, Project Procurement, Service level Agreements and productivity.
- Understanding the How Subcontract Administration and Control are practiced in the Industry

**Course Outcomes:** After completing the course, students should be able to

**CO1** To have a holistic, integrative view of Project Management

**CO2** To understand the role of projects in modern day business organizations with reference to pharmaceutical industry

**CO3** To analyse the complexities of project management.

.Understand project characteristics and various stages of a project.

**CO4** Understand the conceptual clarity about project organization and feasibility analyses – Market, Technical, Financial and Economic

**CO5**Analyze the learning and understand techniques for Project planning, scheduling Execution and Control

**CO6** Apply the risk management plan and analyse the role of stakeholders

**Course Contents:**

**Unit 1: Understanding Project Management**

What is project management, The project management life cycle, What is project, features, terminology and definition, Attributes of a successful project, challenges, responsibility and types, project success criteria, quality of a successful project manager, Why do project go wrong? Need of Project management and challenges in pharma industry

**Unit 2: Project screening and Selection Techniques:**

Sources of idea generation, Idea generation techniques and technique of idea evaluation

**Unit 3: Project Planning and Scheduling**

Structuring concepts and Tools (WBS), Project Planning Tools (Bar charts, CPM, and PERT), Project Scheduling with Resource Constraints, Feasibility studies

**Unit 5: Project Budgeting**

Cost of project, Types of finance and Unities of project financing

**Unit 6: Risk Analysis and Management**

Stakeholder analysis, Contingency plans for risk associated with the projects

**Unit 7: Project Monitoring and Control**

**Unit 8: Human resource management in project**

Project teams and their structures

**Text & References:**

1. Projects: Preparation Appraisal and Implementation by Prasanna Chandra
2. Project Management: Strategic Financial Planning, Evaluation and Control by Bhaunesh M Patel
3. Total Project Management The Indian Context by P K Joy
4. United Nations: Industrial Development Organization's guide to Practical Project Appraisal Social Benefit Cost Analysis in Development Countries
5. Practical Project Management by R G Ghattas
6. Project Management by Harvey Maylor

### Semester 4

Semester	Paper Code:	Subject	Periods			Credit Units	Evaluation scheme		
			L	T	P/S		Internal#	External	Total
<b>*Open Elective Subjects</b>									
	MB 401	KPO Management	2			2			50
	MB402	Brand Plan	2			2			50
	MB 403	Entrepreneurship Management	2			2			50
	(A)	<b>Total</b>				<b>4</b>			<b>100</b>
<b>4</b>	<b>Project Work Evaluation</b>								
	MB 404	Dissertation Report Evaluation (External)			-	6		150	150
		*Internal Assessment				6	150		150
		Viva-Voce				4		100	100
	(B)	<b>Total</b>				<b>16</b>			<b>400</b>
	(A+B)	<b>Overall Total</b>				<b>20</b>			<b>500</b>

**\*Students can choose 2 elective subjects out of the given 3 subjects.**

**Evaluation is done for 50 marks for each elective.**

**#Evaluation Scheme for Internal Assessment is tabulated below**

**\*Internal Assessment**

<b>Semester</b>	<b>Details</b>	<b>Credits</b>	<b>Total</b>
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			<b>Marks</b>
4	Journal Club Presentation	1	25
	Synopsis Presentation	1	25
	Conference/Seminars Attended	1	25
	Publications: <ul style="list-style-type: none"> <li>• Submitted: 15/25</li> <li>• Accepted:20/25</li> <li>• Published: 25/25</li> </ul>	1	25
	Report Evaluation(Supervisor)	2	50
	<b>Total</b>	<b>6</b>	<b>150</b>

## **KPO Management**

### **Paper Code- MB 401**

**Contacts: 2L**

**Credits: 2**

#### **Course Overview:**

To acquaint the students with the outsourcing, knowledge process outsourcing, various aspects of outsourcing etc.

**Course Objectives:** The objectives of this course are:

- To understand the concepts and scope of KPO management.
- To learn about reasoning and aptitude based cases.
- To understand the scope of KPO in Pharmaceutical Management
- To understand the business analytics and competitive intelligence

**Course Outcomes:** On completion of this course, the students will be able to

**CO1** Understand the concept of high added value process chain in KPOs where the achievement of objective is highly dependent on skills and domain knowledge

**CO2** Attain in depth knowledge on aspects related to KPO in pharmaceutical sector like analytical based services, IPR, regulatory services, data mining services

**CO3** Understand role of various processes as market research and pharmaceutical R&D in KPO

**CO4** Understand the concept of transfer of knowledge intensive business processes

## **Course Content:**

### **Unit 1: Outsourcing**

Introduction to outsourcing, types of outsourcing, Outsourcing Development phases, ICT Opportunities, IT and Outsourcing, Need and benefits of Outsourcing, outsourcing risks, Outsourcing success factors, Process of Outsourcing, Outsourcing Network, Outsourcing Drivers, Trends of Outsourcing, Pricing models in outsourcing, Strategic decision to outsource, Emerging Opportunities in outsourcing industry.

### **Unit 2: Knowledge Process Outsourcing**

Introduction, Global Scenario, Knowledge Process Outsourcing in India, Key players in Indian outsourcing industry, Strategic Knowledge process outsourcing, KPO industry of India, Growth drivers of Indian KPOs.

### **Unit 3: Mental Aptitude and Reasoning**

Aptitude Test, Logical Reasoning (Logical Puzzles, Missing letters puzzles, Chain rule, Odd man out series, Time and distance, statement assumption, Letters and symbol series), Case studies, Verbal Ability (spotting errors and ordering of words), Business analytics and forecasting and Competitive Intelligence.

## **Text & References:**

1. Gopal R, Manjrekar Pradip – BPO/KPO Management: An Industry, by Excel Books
2. Amit Singh Sisodiya; Knowledge Process Outsourcing: Advantage India; ICFAI University Press.
3. Vivek Deolanker; Business Process Outsourcing and Knowledge Process Outsourcing;

# **Brand Plan**

## **Paper Code- MB 402**

**Contacts: 2L**

**Credits:2**

### **Course Overview:**

On completion of this course, the students will be able to demonstrate strong conceptual knowledge in the functional area of Pharmaceutical brand management, demonstrate effective understanding of brand planning and brand strategy in Pharmaceutical demonstrate analytical skills in identification and resolution of problems pertaining to brand management

**Course Objectives:** The objectives of this course are:

- To understand the concepts of Pharmaceutical brand management in India Market context.
- To learn about brand value proposition and positioning
- To understand the Pharmaceutical brand strategy
- To understand the communication and media strategy in Pharmaceutical Brand

**Course Outcomes:** On completion of this course, the students will be able to:

**CO1** Gain strong conceptual knowledge in the functional area of Pharmaceutical brand management

**CO2** Demonstrate effective understanding of brand planning and brand strategy in Pharmaceutical industry

**CO3** Demonstrate analytical skills in identification and resolution of problems pertaining to brand management

**CO4** Understand the challenges and opportunities of branding in today's global marketplace

**CO5** Identify and create an effective brand positioning strategies

**Course Contents:**

1. Know your Brand
2. Differentiation through market definition and specific targeting
3. Analyze competition
4. Brand Value Proposition and positioning
5. Differentiation through distinct brand
6. What to do and What not to do under Brand strategy
7. Differentiation through clutter breaking creative's
8. Media strategy

**Text & References:**

Reading material provided by the resource person during the course, Practical case studies and brand designing elaborated by resource person.

# **Entrepreneurship Management**

## **Paper Code- MB 403**

**Contacts: 2L**

**Credits: 2**

**Course Overview:** This course enables students to understand the nature and scope of entrepreneurship, Innovation and its role in the current scenario.

**Course Objectives:** The objectives of this course are to:

- To impart basic managerial knowledge and understanding the business environment.
- To develop necessary knowledge and skills to be an entrepreneur.
- To develop, strengthen the entrepreneurial quality and motivation.
- To analyze the environmental issues related to the proposed project and deliver the best in the circumstances

**Course Outcomes:** On completion of this course, the students will be able to

CO1 Understand the concept, nature and scope of entrepreneurship

CO2 Understand the function of the entrepreneur in the successful, commercial application of innovations

CO3 Identify personal attributes that enable best use of entrepreneurial opportunities

CO4 Explore entrepreneurial leadership and management style

### **Course Content**

#### **Unit 1: Entrepreneur and Entrepreneurship**

Definition of Entrepreneur, Entrepreneurial motivation and barriers; Internal and external factors; Types of entrepreneurs; Theories of entrepreneurship; Classification of entrepreneurs. Characteristics of Entrepreneur.

## **Unit 2: Idea Generation and Project Formulation**

Idea Generation, Screening and Project Identification, Feasibility Analysis; Project Planning, Evaluation, Monitoring and Control, Project Report Preparation, Launching and Organizing and organizing an Enterprise; Operation problems: Incubation and Take-off, Problems encountered, Structural, Financial and Managerial Problems, Types of Uncertainty.

## **Unit 3: Supportive Agencies for Entrepreneurship**

Institutional support for new ventures; Supporting organizations; Incentives and facilities; Financial Institutions and Small scale Industries, Govt. Policies for SMEs. Role of SIDBI & NSIC

### **Text and References:**

1. Couger C, Creativity and Innovation, IPP, 1999.
2. Jacob Nina, Creativity in Organisations, Wheeler, 1998.
3. Velasquez, Business Ethics- Concepts and Cases, Prentice-Hall, 5th edition, 2002.
4. Kittson Alan, Ethical Organisation, Palgrave, 2001

# **Project Work & Dissertation Report**

## **Paper Code-MB 404**

**Credits: 16**

### **Internship Objective:**

To impart the practical knowledge through research methods, help formulate a rigorous research problem related to hospital on the basis of their observation, help do an independent study, and encourage working in a team.

### **Pedagogy**

- Identifying several situations amenable to dissertation work, writing a proposal and making a presentation to the Departmental Research Committee.
- Reporting to the committee on the progress of research work periodically.
- Making use of a variety of research methods.
- Defending the inference before the Examining Committee.

### **Dissertation Report Contents**

Every student will do a detailed study on the topic selected for the dissertation, and is expected to prepare a two or three proposals which he intends to take up for the Dissertation. The Assigned guide will examine this and decide on the topic of dissertation. Report will comprise of following contents:

1. Abstract
2. Introduction
3. Aims & Objectives
4. Operational definitions
5. Significance of Study
6. Review of literature
7. Research methodology

8. Data Analysis
9. Results
10. Discussion
11. Conclusion
12. Recommendations
13. Limitations of study
14. Future prospects of study
15. References

## Activity Calendar

- **January:** 24<sup>th</sup> January - National Girl Child Day
- **February:** 4<sup>th</sup> February- World Cancer day,  
Sports week celebration
- **March:** 24<sup>th</sup> March - World TB day (Poster Competition)
- **April:** 7<sup>th</sup> April – World Health day (Outreach Activity)
- **May:** 5<sup>th</sup> May – World Hand Hygiene day
- **June:** 25<sup>th</sup> June – International day against drug abuse & elicit trafficking
- **August:** 13<sup>th</sup> August – Internal Organ donation day  
(Awareness programme)
- **September:** 29<sup>th</sup> September – World Heart Day (Slogan Writing Competition)
- **October:** 8<sup>th</sup> October (Friday) – World Mental Health day  
(Poster Competition and Work shop)
- **November:** 5<sup>th</sup> November-Management

**DELHI PHARMACEUTICAL SCIENCES &  
RESEARCH UNIVERSITY**

(Approved by UGC under section 2f of UGC Act)



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