



Centurion
UNIVERSITY

Shaping Lives...
Empowering Communities...

**Centurion University of Technology & Management,
Odisha**

MBA (Pharmaceutical Management)

(Two Years Programme)

School of Management

2019

Programme Objective

The objective of the program is to build knowledge and skills to perform as effective professionals in pharmaceutical sector. The syllabus and course contents are designed to meet the needs of fresh graduates and mid-career professionals.

The major objectives of the program are to understand the concepts and techniques of modern management and their application in making the managerial roles of the students efficient and effective, to develop skills of analyzing, diagnosing and solving operational problems in the delivery of pharmaceutical services, to learn the application of qualitative and quantitative analytical tools as applicable to pharmaceutical industry, to understand and appreciate methodologies of pharmaceutical management training and develop skills with focus on strategic responsibility for training and human resources development for pharmaceutical industry, to enlarge the outlook and vision of students about the larger background and context of pharmaceutical management.

Eligibility Criteria

B.Pharm/ BSc. (+3 Sc) with 50% (45% for SC/ST candidates) from a recognized university.

Selection Process

The selection processes is through central counseling on the basis of merit in qualifying CUEE.

Award of degree

After successful completion of degree, student will be awarded with MBA in Pharmaceutical Management.

Course Structure

This is a 2-year full-time Master's program which involves first year (Semester- I & II), and second year (Semester- III and Semester- IV).

SEMESTER-I

Course Code	Course	30 Credit
MGGM1101	Evolution of Management Thought	2
MGGM1102	Basic Communication Skills	4
MBDM1104	Quantitative Techniques	4
MGGM1104	Managerial Economics	4
MGFM1101	Accounting for Managers	4
MGMK1101	Marketing Management	4
MGGM1105	Organizational Behaviour	4
MGGM1106	Anatomy Physiology & Health Education (APHE)	4

SEMESTER-II

Course Code	Course	26 Credit
MGIT1202	Management Information Systems	2
MGGM1206	Communication Perspective of Management	2
MGHR1201	Human Resource Management	4
MGGM1207	Management & Market Research	4
MGOM1201	Production & Operations Management	4
MGPH1201	Pharmacology	4
MGPH1202	Basic Epidemiology	2
MGPH1203	Selling And Reporting Skills Of Pharmaceutical Product	4
MGGM1211	Summer Internship Programme	4

SEMESTER- III

Sl. No.	Course Code	Course	28 Credit
1	MGGM2318	Strategic Management and Ethics	4
2	MGOM2302	Logistics and Supply Chain Management	2
3	MGPH2101	Pharmaceutical Brand Management	4
4	MGPH2102	Pharmaceutical Sales and Distribution Management	4
5	MGPH2103	Business Analytics	4
6	MGPH2104	Drug Regulatory Affairs & Intellectual Property Rights	4
7	MGPH2105	Manufacturing Management	2
8	MGPH2106	Financial Reporting & Analysis	2
9	MGPH2107	Pharmaceutical Advertising & Services Management	2

SEMESTER-IV

Sl. No.	Course Code	Course	20 Credit
1	MGPH0301	Project	20

Evolution of Management Thought

Course Title	Code	Type of course	T-P-PJ	Prerequisite
Evolution of Management Thought	MGGM1101	Theory	2-0-0	Nil

Learning Objectives

- The broad objective of the course is to understand how the solutions to the age old problems of allocating scarce resources to meet the needs and wants of organizations and people have evolved over time.

Learning Outcome

- The course will provide a brief overview of the contributions of pioneers in management discipline. It will help students to understand the concepts and linkages better when they are covered in different courses in subsequent terms. It is also expected that the students will develop an interest to read the original works for in-depth understanding of the management concepts.

Module: I

Pre-scientific Management Era

Introduction, Overview of Management Thought, management in Ancient and Medieval Period
 Read Work of Sun Tzu and Kautilya
 Managerial Awakening
 Read Learnings from Shrimad Bhagabat Gita
 Economic School
 Read Works of Adam Smith and Machiavelli

Module: II

Scientific Management Era

The Principles of Scientific Management
 Read Work of Taylor, Gantt and Gilbreths,
 Legitimate Authority and Bureaucracy
 Read Work of Weber
 Managerial Awakening
 Read Work of Fayol

Module: III

Social Person Era

Hawthorne and the Western Electric Company
 Read Work of Elton Mayo, Follett and Barnard
 The Essentials of Leadership
 Read Work of Mary Parker Follett
 The Theory of Authority
 Read Work of Chester I. Barnard
 Theory of Human Motivation
 Read Work of A H Maslow
 The Human Side of Enterprise
 Read Work of Douglas M. McGregor
 The Individual and Organisation: Some Problems of Mutual Adjustment
 Read Work of Chris Argyris
 Administrative Decision Making
 Read Works of James G March and Herbert A Simon

Module: IV

(5 hours)

Modern Management Era

A New Look at Managerial Decision Making
 Read Work of Victor H Vroom
 Managerial Work: Analysis from Observation
 Read Work of Henry Mintzberg
 Business Objectives and Survival Needs
 Read Work of Peter F Drucker
 Business and Trusteeship
 Read Work of Mahatma Gandhi
 Future of Management, Course Review and Feedback
 Read Future of Management.

Text Books:

1. Claude S. George, Jr. The History of Management Thought, PHI, N.J., 1972 and Teaching Aid Unit (TAU) material.

Basic Communication Skill

Course Title	Code	Type of course	T-P-PJ	Prerequisite
Basic communication skill (BCS)	MGGM1102	Theory	4-0-0	Nil

Learning Objectives

Focus on the basic communication skills required to manage the human resources of the organization, emphasis on the core areas of functional language and provide a useful strategy for self-improvement.

Essentials of Communication

Importance of communication in management, Functional grammar review, Useful language & expressions, Requisite skills for Managers, 7 C's of effective communication, Body language, Listening to be heard.

LAB: Sounds of English, listening activity, online learning - grammar and vocabulary, professional expressions, role-play on body language.

Module: II

Writing & Reading in Communication

Business writing: structure and layout, types of business letters, in-house communication, correspondence feedback, Email writing, Reading management case study & comprehension, note making and verbal ability.

LAB: Writing workshop, idea generation and presentation, writing assignments, reading comprehension & note making, analysis of word power & language.

Module: III

Business Performance Skills

Presentation, Conversation to communication in business, Group discussions, Team presentation, Meetings and conferences, Personal grooming and etiquette.

LAB: Book review presentation, role play on business conversation, team presentation, mock business meetings.

Text Books:

1. K r i z e n .Merrier.Logan. Williams, Business Communication, Thomson
2. B o v e e , Thill and Schatzman, Business Communication Today
3. R a i & Rai, Managerial Communication
4. Sylee Gore, English for Marketing and Advertising, Oxford Business English, Oxford University Press(EMA, Gore)
5. Liz Hamp-Lyons Ben Heasley, Writing, A Course in Writing Skills for Academic Purposes, Second Edition, Cambridge.
6. Shirley Taylor, Model Business Letters (MBL) and Other Business Documents, 5th Edition.

Reference

1. How to Write and Speak Better, Reader's Digest
2. A r t h u r H. Bell & Dayle M. Smith, Management Communication
3. L e e n a Sen, Communication Skills

Quantitative Techniques

Course Title	Code	Type of course	T-P-PJ	Prerequisite
Quantitative Techniques	MBDM1104	Theory	4-0-0	Nil

Learning Objectives

- To acquaint the students with different application of quantitative techniques in business decision making.

Learning Outcome

- Develop skills in structuring and analyzing business problems statistically.
- Create in depth insight into the applications of quantitative management technique.
- Use of quantitative methods in effective management decision making process.
- Utilize computer based statistical software to perform statistical calculations.

Module: I

Nature, Scope and limitations of statistics; uses of statistics to business and industrial activities, Statistical Data –primary and secondary data, Collection of data, Classification and tabulation of data, Diagrammatic and graphic representation of data. Questionnaire –its characteristics and drafting

Module -II

Data Measure of Central Tendency: Introduction, Meaning of quantitative technique, statistical research , Measures of central tendency (Averages), Arithmetic mean, Weighted Mean, Median, Mode Measures of Dispersion: Range, Quartile Deviation, Mean Deviation, Standard Deviation, Coefficient of Variation

Module: III

Probability: Basic concepts, Bayesian, Probability Distribution- Binomial, Poisson, Normal Distribution

Module -IV

Sampling: Introduction, why sampling, sampling methods, Sampling distribution, standard error, type I and II error, Estimation, properties of good estimator, Type of estimation, Confidence limit. Hypothesis: Hypothesis testing, Z-test, t-test, Chi square test, F-test, ANOVA

Text Book:

1. Business Statistics - J K Sharma (Text)
2. Statistics for Management - Levin / Rubin
3. Fundamentals of statistics - Elhance
4. Statistical Methods - S.P. Gupta

Managerial economics

Course Title	Code	Type of course	T-P-PJ	Prerequisite
Managerial economics	MGGM1104	Theory	4-0-0	Nil

Learning Objectives:

- To provide students with a basic understanding of the micro economic principles, methodologies and analytical tools that can be used in business decision making problems.
- To provide an understanding of the economic environment and its impact on strategy formulation.

Learning Outcome

- Understand the roles of managers in firms
- Understand the internal and external decisions to be made by managers
- Analyze the demand and supply conditions and assess the position of a company
- Design competition strategies, including costing, pricing, product differentiation, and market environment according to the natures of products and the structures of the markets.
- Analyze real-world business problems with a systematic theoretical framework.

Module: I

Introduction to Managerial Economics, Nature and Scope, Relationship with other areas in Economics, role of managerial economist, Scarcity, Choice and Efficiency, Circular Flow of Economic Activity, Fundamental concepts of micro economics, Economic Role of Government.

Module: II

Theory of demand, Elasticity of Demand: Price, Income and Cross elasticity of demand, uses of elasticity of demand in business decisions. Analysis of Supply, Equilibrium of demand and supply, Demand Estimation, Demand Forecasting

Module: III

Production Function: Production function with one variable input, Production function with two variable inputs, optimal combination of inputs, Returns to scale. Cost Theory: Types of costs, Production and cost, Short-run cost functions, Long-run cost functions, Economies of scale and scope, Break-even and Cost-Volume-profit Analysis.

Module: IV

Market and firms, equilibrium price and output determination in Perfect Competition, Monopoly, Monopolistic Competition and Oligopoly, Consumer and Producer Theory in Action, Markets and Market Failure

Text Books:

1. Mankiw, N.G (2006), -Principles of Microeconomics|| Cengage Learning
2. Dwivedi D.N (2007), -Microeconomics Theory and Policy||, 2nd Edition, Tata McGraw Hill

References:

1. H.L Ahuja, Managerial Economics, S. Chand Publication
2. Dholokia and Oza(1999),Microeconomics for Management Students,2nd Editon. Oxford.
3. Koutsoyiannis, A (1975), Modern Microeconomics Macmillian Press.
4. Meheta, P.L (1999),| Managerial Economics| Sultan Chand & Sons
5. Pinyck&Rubinfeld, Mehta, P.L. (2009), -Microeconomics|, 7th edition, Prentice hall.
6. Salvatore (S). (2009), -Principles of Microeconomics|, 5th edition, Oxford University Press
7. Gupta, G.S (2007), -Microeconomics|3rd edition, Tata McGraw Hill, New Delhi.
8. Modern Micro Economics, , Koutsoyiannis, (1975) , A, Macmillan Press

Accounting for Managers

Course Title	Code	Type of course	T-P-PJ	Prerequisite
Accounting for Managers	MGFM1101	Theory	4-0-0	Nil

Learning Objectives:

- This course Accounting for Managers‘ has been designed to enable the students to acquire the skills necessary to prepare, use, interpret and analyze financial information.

Learning Outcome

- Develop an awareness and understanding of the accounting process and fundamental accounting principles that underpin the development of financial statements.

Module: I

Accounting Environment of Business, Corporate Entities: Salient Features, GAAP: Concepts, Conventions, Assumptions, Accounting Standards. Accounting Equation: Tool to understand business decisions, Basic Accounting Equation, Financial Statements: Balance Sheet and Income Statement, Cash Flow Statement

Module: II

Equity Instruments: Equity and Preference Capital, Debt Instruments: Debentures/ Bonds/ Loans, Dividend and Interest payment, Fixed Assets and Depreciation, Inventory Valuation, Revenue Recognition, Expenses, Profit: Gross Profit/PBDITA/PBIT/PBT/PAT

Unit: III

Interrelationship between Financial statements, Financial Statement Analysis: Common Size Statements, Ratio Analysis, Du Pont Analysis, Inter-firm and intra-firm comparison

Unit-IV

Cost, Cost Concept, Elements of Cost, Cost Centres, Preparation of Cost Sheet, CVP Analysis, Budgeting and Budgetary Control, Standard Costing

Books Recommended:

1. Accounting for Management—Ashok Sehgal, Taxxman
2. Financial Accounting -- A Managerial Perspective, R. Narayanswamy, PHI
3. Khan & Jain – Management Accounting, TMH
4. Horngreen, Datar, Foster- Cost Accounting, Pearson
5. Financial Accounting, Jain/Narang/Agrawal, Kalyani
6. Basic Financial Accounting for Management, Shah, Oxford

Marketing Management

Course Title	Code	Type of course	T-P-PJ	Prerequisite
Marketing Management	MGMK1101	Theory	4-0-0	Nil

Learning Objectives:

- To familiarize the students with the concepts and theories and strategies of marketing. To focus on the application of these concepts to various marketing contexts. To understand the dynamic nature of environment where marketing decisions are made. To effectively manage the marketing mix. To focus on the emerging areas of marketing

Learning Outcome

- Determine strategies for developing new products and services that are consistent with evolving market needs.
- Evaluate the viability of marketing a product or service in an international market or markets.
- Evaluate results of marketing activities using criteria related to budgeted sales, costs and profits.

Module: I

Introduction to marketing; What is marketing?, Importance of marketing function, Process of marketing, Concepts like need, want, value, satisfaction etc, Elementary idea of marketing mix. **Understanding Marketing Environment;** Factors affecting marketing environment (PESTEL), Competition, Porter's five force model, Market intelligence system, Introduction to market research, Market research and forecasting

Module: II

Segmentation, Targeting & positioning (STP);What is market segmentation?, Criteria for effective segmentation, Evaluating & selecting market segmentation, Targeting selected markets, Targeting strategies, Positioning theory, Effective positioning strategies, Positioning of brands and repositioning

Module: III

Product Management; Product concept, Classification of products, Product life cycle (PLC), Brand & brand management, what is brand equity. **Pricing;** Meaning & objective, steps in setting the price, price responses to competition, pricing policies. **Promotion;** What is promotion, types of promotion, advertising, sales promotion, integrated marketing communication **Place;** Marketing channels, Channel conflict management, Distribution system and logistic management **Sales management;** Basics of sales management, managing sales force, Principle of personal selling **Consumer Behavior;** Role of consumers, Consumer decision making process, Post purchase behavior.

Module: IV

Services Marketing; Characteristics of services, service quality, service quality dimensions, 7Ps of services, service failure and service recovery **Retail Management;** what is retailing, Issues associated with retail management. **Social marketing;** Importance of social marketing, Key success factors in social marketing. **Marketing and Organizational Strategy;** Managing the product portfolio, SBU, The Boston Consulting Group Matrix, The GE Matrix, Ansoff's matrix **Special topics;** Green marketing, e-marketing.

Books Recommended:

1. Marketing Management: A South Asian Perspective- Phillip Kotler, Kevin Lane Keller, AbrahamKoshy and MithileshwarJha, 13th Edition Pearson, Education Publication
2. Marketing Mangement: Fourth edition- RajanSaxena
3. Positioning: The Battle for Your Mind- Al Ries& Jack Trout, Warner Books USA.

Organizational Behavior

Course Title	Code	Type of course	T-P-PJ	Prerequisite
Organizational Behavior	MGGM1105	Theory	4-0-0	Nil

Learning Objectives:

Organizational Behavior (OB) is a field of study that investigates the impact that individuals, groups, and structure have on behavior within an organization. Then it applies that knowledge to make organizations work more effectively.

Learning Outcome:

This course will expose students to gain knowledge on the diversified behavioral science theories and its applications in organizations.

Module: I

Introduction: Concept and models of OB, OB Systems Formal Organization System (FOS), (Individual System) & Social System (SS)

Module: II

Individual System: Perception, Learning, motivation, attitude and Values, personality, emotion and stress.

Module: III

Social System: Communication, Group Dynamics, Conflict, Leadership.

Module: IV

Organizational systems: Organizational power and politics, Organizational culture and climate, Organizational Change and development, International Dimensions of OB, Managing Diversity. Synergy: Behavior Reinforcement, Behavior Modification

Books Recommended:

1. Robins & Sanghii; Organizational Behavior, Pearson
2. Luthans ,F; Organizational Behavior-TMH
3. UdaiPareek ; Understanding Organizational Behavior, Oxford
4. Prasad,L.M; Organization behavior, S.Chand.
5. K.Aswathappa; Organization behaviour

Anatomy, Physiology & Health Education

Course Title	Code	Type of course	T-P-P	Prerequisite
Anatomy, Physiology & Health Education	MGGM1106	Theory	4-0-0	Nil

Learning Objectives:

- This subject is designed to impart fundamental knowledge on the structure and functions of the various systems of the human body. It also helps in understanding both homeostatic mechanisms.

Learning Outcome:

- The subject provides the basic knowledge required to understand the various disciplines of pharmacy.

Module I: Organisational level of human body structure and function:

- Levels of human structure
- Basic chemistry of life
- Cell structure and function
- Tissue, membrane and body cavities
- Human body position, section and planes

Module II: Human body protection, support and movement

- Human Anatomy and Physiology of the Integumentary systems
- Human Anatomy and Physiology of the skeletal systems
- Human Anatomy and Physiology of the Muscular systems

Module III: Human body control and regulation:

- Human Anatomy and Physiology of the Nervous system
- Human Anatomy and Physiology of the Sensory system
- Human Anatomy and Physiology of the Endocrine system

Module IV: Circulatory system

- Human Anatomy and Physiology of the cardiovascular system
- Human Anatomy and Physiology of the Lymphatic system

Module V: Input and out-put of body required components:

- Human Anatomy and Physiology of the Respiratory system
- Human Anatomy and Physiology of the Digestive system
- Human Anatomy and Physiology of the Urinary system

Recommended Books (Latest Editions)

1. Essentials of Medical Physiology by K. Sembulingam and P. Sembulingam. Jaypeebrothers medical publishers, New Delhi.
2. Anatomy and Physiology in Health and Illness by Kathleen J.W. Wilson, ChurchillLivingstone, New York
3. Physiological basis of Medical Practice-Best and Tailor. Williams & Wilkins Co,Riverview,MI USA
4. Text book of Medical Physiology- Arthur C,Guyton andJohn.E. Hall. Miamisburg, OH, U.S.A.
5. Principles of Anatomy and Physiology by Tortora Grabowski. Palmetto, GA, U.S.A.
6. Textbook of Human Histology by Inderbir Singh, Jaypee brother's medical publishers, New Delhi.
7. Textbook of Practical Physiology by C.L. Ghai, Jaypee brother's medical publishers, New Delhi.
8. Practical workbook of Human Physiology by K. Srinageswari and Rajeev Sharma, Jaypee brother's medical publishers, New Delhi.

SEMESTER-II

Management Information System

Course Name	Code	Type of course	T-P-PJ	Prerequisite
Management Information System	MGIT1202	Theory	4-0-0	Nil

Learning Objectives:

- Management Information systems (MIS) are like the nervous systems of the organizations, which provide the organization with ability to respond to changing business environment in a strategic way.

Learning Outcome:

- MIS provides the crucial information needed to take informed decisions.

Module 1:

Introduction to MIS: Information; information for decisions; Management information; strategic importance of MIS; System Concepts: System; Types of System; System Control and Maintenance; Organization as a System; System thinking, Concepts and Principles of MIS: Characteristics, functions, structure & Classification of MIS; Assumptions for MIS; principles of MIS

Module: II

Planning information System: Planning for competitive advantage; strategically positioning information systems; Business application Planning, Software aspects of MIS: Program, software & hardware; Typical software applications; MIS in Production, marketing, Maintenance, Materials & Project Management; Enterprise Business System: CRM; The Business focus: ERP;

Module: III

Knowledge Management: Understanding Knowledge; information management Vs Knowledge management Implementation Challenges, Developing information system,: System Development Life Cycle(SDLC); System analysis and Design; End user development; Roles of a Manager. Beyond MIS: Decision Support System; Business Expert System; Artificial Intelligence;

Module: IV

Managing global Information Systems: Global IT management; Cultural, Political and geo economic challenges; Management challenges: Security, Cryptography, ethics and societal challenges, security management; Crucial IT Decisions for Management. PRACTICE: Project on MS, exploring reports, creating a new project plan, SAD, Setting networking days, entering project properties.

Books Recommended:

1. Management Information systems, O'Brien & Marakas, TMH Publication
2. Management Information Systems, Effy OZ, Thomson Publications
3. Management Information Systems, Davis & Olson, TMH Publications
4. Management Information Systems, Jaiswal & Mittal, Oxford University Press

Communication Perspective of Management

Course Name	Code	Type of course	T-P-PJ	Prerequisite
Communication perspective of management	MGGM1206	Theory	4-0-0	Nil

Learning Objectives:

- Provide a working knowledge of communication issues and skills required for managers, boost personal, oral, written and visual communication skills through

Module: I

Innards of Communication

Roots of misunderstanding in management communication, overcoming barriers, empowering employees- self esteem and assertive skills, communicating in diversity of culture. **Lab:** Case Studies, role plays on communication situation & style

Module: II

Written Analysis And Communication

Business proposals and reports, Paragraph writing, expository writing with special emphasis on data comment, creative writing: AIDA model

Lab: workshops on writing, writing in groups & individual assignments

Module: III

Business Performance Skills

Making Oral presentation, persuasion & negotiation in communication, etiquette in business, Internet and telephone etiquette.

LAB: Movie review presentations, Writing & presenting persuasive messages, telephone etiquette & grooming for meeting & presentation

Books Recommended:

1. Krizen. Merrier. Logan. Williams, Business Communication, Thomson(BC: Krizen).
2. Bovee, Thill and Schatzman, Business Communication Today (BS: Bovee).
3. M. M. Monippally, Business Communication Strategies (BCS: MMM), TMH, New Delhi, 2001.
4. Arthur H. Bell & Dayle M. Smith, Management Communication (MC: AHB & DMS), Wiley Student Edition, 2005
5. Allan Pease, Body Language

Human Resource Management

Course Name	Code	Type of course	T-P-PJ	Prerequisite
Human Resource Management	MGHR1201	Theory	4-0-0	Nil

Learning Objectives:

- To expose the students to the intricacies of Human Resource Management practices and Human behaviour at work.

Learning Outcome:

- It provides theoretical knowledge and practical skills in the area of HRM.
- It exposes the students to the legal framework of HRM and its application.
- It stimulates analytical thinking, Problem solving, Communication skills and team orientation among students for meeting the HR requirements.

Module: I

The Genesis

The Evolution of the Discipline, Concepts and Contours of HRM, Linking Organization strategic planning with Human Resource Planning Job Design and Job Analysis

Module: II

Employee Sourcing –I Recruitment, Employee Sourcing – II Selection, Employee Engagement

Module: III

Employee Development, Employee Retention

Module: IV

Industrial Relation and Legal Perspective of HRM, HR Audit and Information System

Books Recommended:

1. SubbaRao. Essentials of Human resource Management and Industrial relations; Himalaya Publishing.
2. Rao,T.V.Human resource development. Response books. Decenzo,D. Robbins S.P. Fundamentals of Human resource management. John Wiley and sons.
4. Mello,A.Jeffery.Strategic human resource management, Cengage learning.
5. Gomez-mejia,Balkin,Cardy.Managing Human resource,(4th edition) PHI.
6. Ivancevich,J.M. Human resource Management. TMH
7. D. Bhattacharya, Human Resource Management, Excel Books.
8. Venkatratnam,C.S,Understanding Industrial relations,Oxford.
9. Dessler,G. A framework of Human resource Management.(10th Edition)Pearson.
10. Aswathapa, Human Resource & Personnel management, TMH

Management and Marketing Research

Course Name	Code	Type of course	T-P-PJ	Prerequisite
Management and marketing Research	MGGM1207	Theory	4-0-0	Nil

Learning Objectives:

- To sensitize students with a appropriate research design and research technique.

Learning Outcome:

- To enable them to conduct investigation within and outside their organization by applying the concepts of Marketing research

Module: I

Introduction to Research: Nature and Scope of Business Research, Identification of Research problem, Research objective, **Marketing Research and application:** Importance, Interpretation & role in strategy ;**Research Problem:** Identification of research problem, research objective, types of business research, research process.

Module: II

Research designs: Exploratory, descriptive, experimental and observational, planning and Formulation of research projects. **Research Brief:** Statement of Research Problem, Review of Literature, Hypotheses Formulation; **Tools of research:** Preparation of questionnaire and schedules, Sample questionnaire development; **Measurement:** Nature of measurement, Measurement problem & scaling techniques, Nominal, ordinal, interval , ratio Thurston Scale, Questionnaires using Item Analysis e.g. Likert Scale

Module: III

Sampling: Probabilistic & Non Probabilistic sampling, methods of drawing samples, concepts of different sampling methods, Qualitative Vs Quantitative research methods, Qualitative techniques used in gathering raw primary data, Focus Group discussion; **Collection of data:** Primary and secondary data, Survey Design (including online survey) ,Social Science Research, Participatory Rural Appraisal.

Unit: IV

Data Analysis: Data entry, editing, coding, Data Tabulation, (USE OF SPSS); **Data analysis Techniques:** Crosstabs, Correlation, Goodness of fit, ANOVA, one way , two way, Demand Estimation, **Qualitative forecasting techniques:** Basic Concept of Delphi Technique, Opinion Based method; **Non-parametric tests:** chi-square, Tukey Kramer, Kruskal Wallis, Wilcoxon signed rank test, Man-Whitney U test. Factor Analysis, Cluster Analysis; **Research Results:** Report preparation and presentation process, report format, report writing, guidelines for table and graph.

Books Recommended:

1. Debashis Pati, Marketing Research, University Press
2. Marketing research by N. Malhotra, Pearson Education
3. Cooper, Donald R and Pamela S schindler, Business Research Methods, Tata McGraw – Hill
4. C.R. Kothari, Marketing Research, New Age International
5. Zikmund, William G. , Business research methods by Cengage Learning

Production and Operations Management

Course Name	Code	Type of course	T-P-PJ	Prerequisite
Production and Operations Management	MGOM1201	Theory	4-0-0	Nil

Learning Objectives

- The course is designed to acquaint the students with decision making in production and operations function of an organization.

Learning Outcome

- Understand the core features of the operations and production management function at the operational and strategic levels, specifically the relationships between people, process, technology, productivity and quality and how it contributes to the competitiveness of firms.
- Explain the various parts of the operations and production management processes and— their interaction with other business functions (strategy, engineering, finance, marketing, HRM, project management and innovation)

Module: I

Operations Management- An Introduction :Primary topics in Operations Management, Operations Function, and Transformation process and Competitiveness.

Operations Strategy :Strategic Decisions in Operations, Strategy Deployment, and Vertical Integration, Service Operation, Service strategy, Manufacturing Strategy and Mass customization; Product Development and Service Design , New Product design, Product life cycle, Process design, Process life cycle, Form design, Functional design, Production design, Concurrent design, Technological design and Service design process.

Module: II

Facilities Location & Layout Planning :Location - Principles and Factors; Location Analysis techniques- Factor Rating, Centre of Gravity Technique, Layout – Concept & Basic Principles, Process Layout , Product Layout; Fixed Position Layout. Hybrid Layouts – Cellular, Project Management, Scheduling and Sequencing: Project planning, project control, project scheduling Models Project Network, Critical path Method (CPM), Programme Evaluation Review Technique (PERT) , Project crashing and Time cost Trade-Off. Objective of Scheduling, Sequencing, Gantt charts,. Gantt chart, Sequencing model. "n" jobs 1 machine, "n" jobs 2 machines, "n" jobs -m|| machines.

Module: III

Inventory Management:

Concept of inventory with independent demand: Inventory cost structure Deterministic inventory model - EOQ models, instantaneous receipt, Inventory model with discounts, delivery over a period of time, Periodic review and continuous review inventory model; Selective Inventory Control - ABC and VED.

Module: IV

Quality Management: Concept of quality; Quality of design, Conformance & performance; Cost of poor process performance and quality. Statistical Quality Control

- Process Control (X, R & P chart), Product control-acceptance sampling and OC curve. Concept of TQM. Just in Time and Lean Production Basic element in JIT, Pull system, Push system, Kanban production control system , Benefits of JIT, Jit implementation in Learning Organization, JIT in Services. topics. Supply chain management concept.

Books Recommended:

1. Chase, Jacobs, Aquilano, Agarwal, - -Operations Management||, TMH
2. Krajewski ,Ritzman, Kansal, - -Operations Management||, Pearson
3. Everette. Adam Jr., Ronald J. Ebert, - -Production and Operations Management||, PHI
4. Roberta S. Russell & Bernard W. Taylor III, - -Operations Management||, Pearson/ PHI
5. Aswathappa& Sridhar Bhat, - -Production and Operations Management||, HPH
6. Gaither, Frazier- Operations Management

Pharmacology

Course Name	Code	Type of course	T-P-PJ	Prerequisite
Pharmacology	MGPH1201	Theory	4-0-0	Nil

Learning Objectives:

- This subject is intended to impart the fundamental knowledge on various aspects (classification, mechanism of action, therapeutic effects, clinical uses, side effects and contraindications) of drugs acting on different systems of body and in addition,

Learning Outcome:

- It is helpful for pharmaco-managers to understand the basics of drugs.

Module: I

1. Introduction to pharmacology, scope of pharmacology, Routes of administration of drugs, their advantages and disadvantage, Various processes of absorption of drugs and the factors affecting them. Metabolism, distribution and excretion of drugs. General mechanism of drugs action and the factors which modify drugs action.
2. Pharmacological classification of drugs. The discussion of drugs should emphasise the following aspects:

Drugs acting on the central nervous system:

General anaesthetics, adjunction to anaesthesia, intravenous anesthetics.

NSAIDS drugs, narcotic analgesics, antirheumatic and antigout remedies, sedatives and hypnotics, anti-convulsants, antiparkinsonism agents

Module -II

3. Drugs acting on autonomic nervous system.
 - (a) Cholinergic drugs, anticholinergic drugs, anticholinesterase drugs.
 - (b) Adrenergic drugs and adrenergic receptor blockers.
 - (c) Neurone blockers and ganglion blockers.
 - (d) Neuromuscular blockers, drugs used in myasthenia gravis.
4. Drugs acting one eye, mydriatics, drugs used in glaucoma.

Module -III

5. Pharmacology of drugs acting on cardio vascular system
 - a. Introduction to hemodynamic and electrophysiology of heart.
 - b. Drugs used in congestive heart failure
 - c. Anti-hypertensive drugs.
 - d. Anti-anginal drugs.
 - e. Anti-arrhythmic drugs.
 - f. Anti-hyperlipidemic drugs
 - g. Antacids, anti ulcer agents

Module -IV

6. Chemotherapy of microbial disease: urinary antiseptics, sulfonamides, penicillins, streptomycin, tetracyclines and other antibiotics, antitubercular agents, antifungal agents, antiviral drugs, antileprotic drugs.
7. Chemotherapy of protozoal diseases, anthelminic drugs.
8. Chemotherapy of cancer.

Recommended Books:

1. Essentials of Medical Pharmacology by K.D.Tripathy
2. Pharmacology and pharmacotherapeutics by Satoshkar and Bhandarkar Pharmacology by Prasun K Das, S.K.Bhattacharya and P.Sen.
3. Text book of Pharmacology by S.D. Sethi
4. The Pharmacological basis of Therapeutics by Goodman and Gilman Pharmacology by Rang, Dale and Ritter.
5. Basic and Clinical Pharmacology by B.G.Katzung

Basic Epidemiology

Course Name	Code	Type of course	T-P-PJ	Prerequisite
Basic Epidemiology	MGPH1202	Theory	2-0-0	Nil

Learning Objectives:

- Measurement of health related data, their analysis and re-presentation is major contents of this course. Course is useful to understand basic tools used for estimation health related data.

Module: I

Epidemiology: Definition, Components, Aims of Epidemiology, Terminology used, tool for Measurement. Rate, Ratio and Proportion, Numerators and Denominators used in Epidemiology

Module: II Basic Measurement in Epidemiology, Morbidity and Mortality measurements, Mortality rates, Morbidity rates, Relation between Incidents and Prevalence

Module: III Epidemiological study designs, types of studies:

- Descriptive study
- Ecological Study
- Cross Sectional Study
- Case Control
- Cohort

Module: IV Experimental Study- Drug Trials and Community Trails

Books Recommended:

1. Basic Epidemiology. by-R. Bonita, R.Beaglehole, Tord Kjellström, World Health Organization.

Selling and Reporting Skills of Pharmaceutical Product

Course Name	Code	Type of course	T-P-PJ	Prerequisite
Selling And Reporting Skills of Pharmaceutical Product	MGPH1203	Theory	4-0-0	Nil

Learning Objectives:

- This subject is intended to impart the fundamental knowledge on pharmaceutical marketing.

Module: I

- Definition, general concepts, and scope of pharmaceutical marketing; Distinction between marketing & selling;
- Marketing environment; Pharmaceutical Industry and competitive analysis; Analyzing consumer buying behavior; industrial buying behavior.
- Pharmaceutical market: Quantitative and qualitative aspects; size and composition of the market; demographic descriptions and socio-psychological characteristics of the consumer; market segmentation & targeting Consumer profile;
- Motivation and prescribing habits of the physician; patients' choice of physician and retail pharmacist. Analyzing the Market; Role of market research.

Module: II

- Promotion: Meaning and methods, determinants of promotional mix, promotional budget
- An overview of personal selling, advertising, direct mail, journals, sampling, retailing, medical exhibition, public relations, online promotional techniques for OTC Products.

Module: III

- Pharmaceutical marketing channels: Designing channel, channel members, selecting the appropriate channel, conflict in channels, physical distribution management: Strategic importance, tasks in physical distribution management.
- Professional sales representative (PSR): Duties of PSR, purpose of detailing, selection and training, supervising, norms for customer calls, motivating, evaluating, compensation and future prospects of the PSR.

Module: IV

- Pricing: Meaning, importance, objectives, and determinants of price; pricing methods and strategies, issues in price management in pharmaceutical industry. An overview of DPCO (Drug Price Control Order) and NPPA (National Pharmaceutical Pricing Authority).

- Emerging concepts in marketing: Vertical & Horizontal Marketing; Rural Marketing; Consumerism; Industrial Marketing; Global Marketing.

Reference:

1. Market Structure and Regulation in Pharmaceutical Markets by Francisco Javier Coronado Saleh.
2. Pharmaceutical Marketing by Brent L Rollins and Matthew Perri, Georgia.

SEMESTER-III

Strategic Management and Ethics

Course Title	Code	Type of course	T-P-PJ	Prerequisite
Strategic Management and ethics	MGGM2318	Theory	4-0-0	Nil

Learning Objectives:

- To familiarize the students about the basic concept of strategic management and the required tools and techniques for strategy analysis and implementation.
- To develop the skill of strategy analysis, choice and implementation for an organization
- To understand and apply the concept of ethics in a business

Module: I

Concept of Strategy: Mission, Vision, Objective and Strategy, Evolution of Strategic Management, Strategic Management Process

Module: II

Strategy formulation: Environmental Analysis, Resource Analysis, Stakeholders' Analysis

Module: III

Strategy Choice and Implementation: Corporate Level Strategy, Business Unit Level Strategy, Directions and Methods of Strategy Development, Criteria for Strategy Selection, Strategy Implementation

Module: IV

Ethics and Corporate Governance: Understanding Ethics, Corporate Governance, Managing Business Ethics, Corporate Social Responsibility

Books Recommended

1. Gerry Johnson and Kevan Scholes, Exploring Corporate Strategy: Text and Cases, Pearson Publications, Delhi
2. Francis, Ronal D and Mishra Mukti, Business Ethics, Tata Mc Graw Hill, Delhi

Logistics and Supply Chain Management

Course Title	Code	Type of course	T-P-PJ	Prerequisite
Logistics and Supply Chain Management	MGOM2302	Theory	4-0-0	Nil

Learning Objectives:

- This course is aimed at creating awareness on the desirability of supply chain management (SCM) concepts for the Indian Industry. The focus will be on integrated supply chain management systems. The integration of the physical (material flow) and virtual (information flow) value chain across multiple organizations will be highlighted. The emphasis will be on cross-functional approaches to supply chain management, including marketing, sales, research & development, finance and accounting, manufacturing/operations, and information technology.

Learning Outcome:

- The participants will get a chance to rethink the way the organization integrates suppliers, production and distribution in the globally competitive economy.

Module: I

Overview of supply chain management, objectives of a supply chain and the decision phases in a supply chain, the process views of a supply chain, nature and scope of supply chain management, model of supply chain management, Logistics, warehousing and Expediting, Logistics and SCM Relationship, Importance of Logistics/supply chain management.

Drivers of supply chain performance, A framework for structuring drivers, Facilities, Inventory, Transportation, Information, Sourcing, Pricing, Obstacles to achieving fit.

Module: II

Logistics/supply chain network design and its importance, steps involved in logistics/supply chain network design process, factors influencing network design decisions, -design of channel of distribution and the considerations of channel design. **Strategic Decisions in Supply Chain**, Linking to corporate strategies, Role of Third party and integrated- logistics service providers.

Role of sourcing in supply chain

Importance of sourcing in a supply chain, sourcing grid matrix and guidelines, purchasing procedures and commonly deployed practices, strategic sourcing.

Module: III

Demand management and customer service, performance measures for customer service, demand management process and the problems in demand management, basic approach to demand forecasting and the forecasting methods or techniques, how to establish a customer service strategy. -Bull-whip effect in a supply chain, managerial levers to achieve coordination within a supply chain.

Role of transportation in a supply chain, characteristics of transportation modes and carrier selection, transportation infrastructure available in the country, concepts of transportation economy and pricing, various transportation strategies employed by transportation managers.

Role of Information Technology in a supply chain, customer relationship management (CRM) approach and the supplier relationship management (SRM) approach, various logistics/supply chain information technologies used.

Module: IV

Organisation and control in supply chain Need for logistics/supply chain organisational structure and its importance, various types of organisational structures in integrated logistics which have been evolved over time, organisational design.

Dimensions of performance measures, measurement criteria used in supply chain management, major categories of performance metrics, performance measures for supply chain management, various types of performance measures, SCOR model and balanced score card method, Confidence limit.

Global SCM and future of SCM Cost drivers and impact on global supply chain configuration, challenges in establishing a global supply chain, changing perspectives of logistics infrastructure.

Books Recommended:

1. Supply Chain Management – N Chandrasekharan(Text)
2. Supply Chain Management - Chopra • Meindl (Text)
3. Supply Chain Management - K Shridhar Bhatt
4. Supply Chain Management for competitive Advantages –Rajaram

Pharmaceutical Brand Management

Course Name	Code	Type of course	T-P-PJ	Prerequisite
Pharmaceutical Brand Management	MGPH2101	Theory	4-0-0	Nil

Learning Objectives:

- This course enables students to learn about the basics of brand and development of brand of a product. There is a difference between the general marketing and pharmaceutical marketing. This course enables students to learn about the channel of pharmaceutical marketing, effects of promotional strategies, and physician's prescriptions.

Module: I

Fundamentals of Brand Management

Product: Concept, classification, levels, Product Mix.

Concept of Brand: Introduction, Role of brand, Advantages of Branding, Core Values of Brand.

Brand Equity: Concept, Brand elements. Principles of Branding, Communication Mix Strategy.

Brand Media: Communication Channels and techniques, Advertising, Brand Perception, and Packaging.

Brand Extension: Nature, advantages and disadvantages, factors of brand extension. Brand personality: Nature, advantages, brand personality and user imagery. Concept of Brand positioning.

Brand Strategy: Introduction and type of strategies.

Brand valuation: Meaning, techniques, methods of valuing a brand. Introduction to service brands.

Module: II Consumer Behaviour in Pharmaceutical Marketing

Introduction to Pharmaceutical Marketing: Identification of pharmaceutical market; market behaviour; physician prescribing habits; patient motivation; market analysis.

Scope and importance of CB in pharmaceutical marketing: key influencers of consumer behaviour in pharmaceuticals; motive and its categories; perception and process of selectivity; impact on advertising decisions; Five steps of buyer's decision making process, cognitive dissonance.

Concept of consumer and customer in the pharmaceutical industry: delineating consumers and customers in different segments of the pharmaceutical branded formulations market and API market (B2B)

Importance of Physician's Prescription Behaviour: Key influencers of doctors' prescription behaviour; new product adoption process; impact of sales calls; Analysis of prescription behaviour of doctors using Prescription Audit Data (C-MARC); patient factors for prescription decisions, the AIDA principle.

Module III: - Pharmaceutical Product Management

The Pharmaceutical Products: Drug Development and the Marketing Research Interface; Diversification and Specialisation; Marketing Generic Drugs; and prescription drugs.

History of Product Management: from CAMAY to COREX

What is a Brand: 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 Management as a strategic marketing function: role of a Pharmaceutical Brand Manager, the 'Little CEO' concept, 'Science meets Commerce' concept; Essential differences between managing Pharmaceutical Brands and Consumer Brands, types of Pharmaceutical Brand Management organization structures, challenges of a Brand Manager; relation of Product Management Teams vis-à-vis Sales Force in Pharmaceutical companies;

Fundamentals of Pharmaceutical Marketing: the 4 'Ps' in a regulated Pharma market, the Strategic Triangle; Market Segmentation in the pharmaceutical context, conceptual difference with consumer products market segmentation, Brand Positioning in the pharmaceutical context, conceptual difference with consumer brand positioning, PLC Management, reinforcing and revitalizing pharmaceutical brands, line-extensions.

Product-mix Optimization & Promotional-mix Optimization: Portfolio Analysis by factoring key determinants, BCG Matrix, brand building decisions; leveraging the Promotional-mix for Brand Building.

Designing Marketing Programs for New Product launch and Existing Brands: essential constituents, Brand Plans, purpose and benefits.

Module IV: -Competitive Practices: Economic and Competitive Aspects of the Pharmaceutical Industry; Advertising; Detailing and other forms of Promotion; Retail Competition – The Community Level; International Marketing. analysis; Using Medical Databases, PubMed and Standard Treatment Algorithms to build brand communication strategies; IFPMA Code of Ethics – Guidelines for Pharmaceutical Promotion; Developing content and designing of Scientific Promotional Literatures, Visual Aids and Journal Advertisements; Preparing the Promotional Budget as a part of the Marketing Budget; Monitoring & Controlling long-term projects, field-force activities and promotional-expense budget; Training Skills

Module V: International Marketing

The Pharmaceutical Industry: India and Global Scenario: Essential differences between domestic Marketing in India and International Marketing; generic products dominated market vis-à-vis patented products dominated markets, role of pharmacies in dispensing products, role of mass media in product advertisements and social campaigns for market expansion; Structure and role of field management and product management, India Vs. Global Factors governing International business environment. Demand estimation of pharmaceuticals in International markets Market-entry strategies, Market characteristics and regulatory environment of major International Markets

3 Tiers of 15 Pharming Markets – Characteristics, Political, Economic & Regulatory Environment.

Module VI: M&A in Pharmaceutical Industry

Objectives and Types of M&A

Frameworks for Strategic Choice Analysis; Value Chain Analysis, Patent Cliff

Financing of M&A transactions: evaluation of companies' capacity to fund transactions, Fire-power Index.

The Golden Period of Pharma M&A's: some case studies to identify synergies

Text Books Recommended:

- Product Management by Lehman & Winer

- Principles of Pharmaceutical Marketing – Mickey C. Smith
- Pharmaceutical Product Development by N. K. Jain
- Kotler, Philip, Marketing Management: Analysis, Planning, Implementation, and Control Latest Edition, Prentice Hall
- Best, Roger J., Market-Based Management – Strategies for Growing Customer Value and Profitability (3rd Edition), Prentice Hall
- Lehmann, Donald R. and Russell S. Winer, Product Management (2005 4th Edition). McGraw-Hill/Irwin.
- Philip Kotler(2003). Marketing Management: Eleventh Edition, New Delhi: Pearson Education.
- Harsh Verma . Brand Mnanagement, Second Edition, Excel Publication.
- Aaker,D.; Managing Brand Equity. Ramanuj Majumdar (1999) Product Management in India. New Delhi: Prentice Hall.
- Pran K.Chaudhary (2001), Successful Branding, Hyderabad: University Press Hill.

Pharmaceutical Sales and Distribution Management

Course Name	Code	Type of course	T-P-PJ	Prerequisite
Pharmaceutical sales and distribution Management	MGPH2102	Theory	4-0-0	Nil

Learning Objectives:

- Study of pharmaceutical sales is different from study of general sales, various factors like physicians behaviour, promotional strategy, marketing reputations of organizations

Learning Outcome:

This course enables students to understand about selling of medicines and pharmaceutical market dynamic.

Module: I

Fundamentals of Sales Management

Difference between Sales and Marketing; relationship between Sales and Marketing departments

Roles and responsibilities of Medical Representatives (MR) and Managers

Doctor – MR relationship; Principles of Salesmanship, PCP & PCA, Prospecting, In-chamber process; Objection Handling; RCPA

Module: II

Sales Force Decisions

Organization Structure - Field-strength, Managerial hierarchy, Field-force deployment

Recruitment & selection of MRs and Managers, Field-force training, Induction Programme

Performance Appraisal of Field-force

Module: III

Territory Management

Role of Planning, Analysis and Control

Doctors' Master List, Doctor's Profile Cards, Major Retailers' List, Daily/Monthly Call Planner, RCPA, Online & Offline reporting, Stock & Sales Statement, Tour Programme, Daily/Monthly Reports, Expense Statement, Other Performance Metrics & Data Analytics

Field-force compensation & motivation – fixed pay and variable pay, working allowances, incentives and rewards, competition and awards, sales conferences

Managing Unionized Field-staff – Sales Promotion Employees (Conditions of Service) Act, Handling grievances, Charter of Demands, Collective Bargaining, Tripartite Negotiation

Module IV:

Distribution Management

Types of distribution systems – Central Warehousing, State Depots/C&F/CAs Appointment and function of Distributors / Transporters / Logistic Companies Wholesale & Retail Margins in Price-structure, Trade-schemes and Net-rates Credit Policy, Management of Returned Goods, Expiry & Breakages

Sales Inventory Management, Lead-time Analysis, ABC Analysis, AIOCD & State Associations, Cold-chain Logistics

Sales Tax, Form 'C', Form 'F', Road Permit/Way Bill, Online facilities
Recent Developments in the Pharmaceuticals Business World (Project-based Learning)

Text Books Recommended

- Purchasing & Supply Management – Pearson Publications
- Sales Management – Decisions, Strategies and Cases- Cundiff, Still and Govoni (PHI)
- Sales Management-Concepts, Practices and Cases-WJ Stanton and RH Buskiak
- The Strategy of Distribution Management by Mr. Martin Christopher
- Modern Logistics Management : By Mr. John F. Magee, Mr. William C. Capacino, Mr. Donald B. Rosenfield
- Physical Distribution – Log Approach By Dr. K. K. Khanna
- Competition and Evolution in the Distribution trade by Mr. Bucklin L.P.
- Trade Marketing Strategies – By Mr. Randell G.
- Market Driven Management By Mr. Wester F. E. (Jr.), Mr. Webster F. W.
- Market Smarter not Harder – By Mr. Truax P. L. and Mr. Myron M.
- Stores and Distribution Management: Carter, Ray; Price, Philip M.; Emmett, Stuart
- Managing Channels of Distribution: The Marketing Executive's Complete Guide
Kenneth Rolnicki.

Business Analytics

Course Title	Code	Type of course	T-P-PJ	Prerequisite
Business Analytics	MGPH2103	Theory	4-0-0	Nil

Learning Objectives:

- This course is designed to impart basic knowledge on regulatory authorities and agencies governing the manufacture and sale of pharmaceuticals.

Learning Outcome

- This course enables students to recognise, understand and apply the language, theory and models of the field of business analytics.

Module :I

Overview of Business Analytics:

- Definition, Evolution, Architecture, Benefits, Future.
- Business, Analytics as Solution for Business Challenges.
- Effective Predictive Analytics, Integrating Analytics in Business Processes, Unstructured Data Analytics, Balanced Scorecard, Dashboards, KPI based on Dashboard and Scorecard,
- LOFT effect, Data Quality, Master Data Management, Data Profiling.
- Why are Business Analytics important

Module 2: Descriptive Analytics, Predictive Analytics and Prescriptive Analytics:

- Introduction to Descriptive Analytics, Visualizing and Exploring Data, Descriptive Statistics, Sampling and Estimation, Introduction to Probability Distributions
- Introduction to Predictive Analytics, Predictive Modeling (Logic-driven models and data driven models)
- Introduction to Prescriptive Analytics, Prescriptive Modeling, Non-linear Optimization

Module 3: Data Issues:

- Organization/sources of data, Importance of data quality, Dealing with missing or incomplete data, Data Classification
- Data Warehouse: Definition, Features, Applications, Types of data warehouse,
- Architecture: Business Analysis framework, 3-tier data warehouse framework.
- Data Warehouse Models: Virtual Warehouse, Data Mart and Enterprise warehouse.
- Metadata: Meaning and Categories, Role of metadata, Metadata respiratory, Challenges for metadata management, Data Cube
- Online Analytical Processing Server (OLAP): Types, OLAP operations, OLAP Vs Operational Database (OLTP).
- SCHEMA: Star Schema, Snowflake schema, Fact Constellation schema

Module 4: Data Mining and Testing: Definition, Concepts, Applications and Methods.

Module 5: Security: Security requirements, User Access, Data classification, User Classification, Data Movement, And Impact of security on design.

Module 6: Decision Modelling and Forecasting:

- Optimization: Using excel to solve business problems Eg: Marketing Mix, Portfolio optimization etc.

- Linear Programming: Introduction, Types of Linear programming problems/Models, Linear programming Model elements, Model formulation procedure, Computer based solutions for linear programming using Simplex method
- Duality and Sensitivity Analysis: What is Duality?, Duality and Sensitivity analysis problems
- Integer Programming: Introduction, Solving IP problems/Models
- Forecasting: Introduction, Types of Variation in Time series data, Simple Regression Model, Multiple Regression Models
- Simulation: Introduction, Types of Simulation
- Decision Theory: Introduction, Decision theory model elements, types of decision environments, decision theory formulation, decision making under uncertainty and risk, Decision trees.

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Module 7: Fundamentals of R Language:

- Introduction, Basic Statistical Analysis using R, Process of Business Analytics,
- BA Process-Walk through with R,
- Multiple regression- Theory and Walk through with R,
- Clustering and Segmentation- Theory and Walk through with R

Text Books Recommended

- Fundamentals of Business Analytics by RN Prasad and Seema Acharya, Wiley India Publication
- Win With Advanced Business Analytics by Jean Paul Isson and Jesse S. Harroitt, Wiley Publication, 2013
- Successful Business Intelligence: Secrets to Making BI a Killer App by Cindi Howson, Tata McGraw Hill Edition 2012
- Analytics at Work by Thomas H. Davenport, Jeanne G. Harris and Robert Morison, Harvard Business Press.

Drug Regulatory Affairs & Intellectual Property Rights

Course Name	Code	Type of course	T-P-PJ	Prerequisite
Drug Regulatory Affairs & Intellectual Property Rights	MGPH2104	Theory	4-0-0	Nil

Learning Objectives:

This course is designed to impart basic knowledge on regulatory authorities and agencies governing the manufacture and sale of pharmaceuticals.

Learning Outcome

- Critically examine and evaluate scientific data and conclusions intended for regulatory review.
- Enable improvement of the regulatory environment by implementing and upholding good regulatory practices.
- Take independent responsibility for own professional development.

Module: I

Manufacturing: Introduction, regulatory requirements as per Indian and other regulatory authorities for manufacturing information formula, process, validation of manufacturing process, equipment, documentation, inspection requirement, regulatory guidelines for active ingredients and formulations. Regulatory guidelines for packaging materials, test and evaluation of packaging materials, biological test, microbiological test and evaluation of closures.

Module: II

National & International Drug Regulations:

CDSO and State licensing authority, their functions and responsibilities. Overview of the drug regulatory aspects in countries- e.g. India, US and Europe. IND (Investigational New Drug), NDA (New Drug Application), Generic Drug ANDA Applications – an overview in India and other countries. Brief overview of CTD formats of dossiers, E-submission, US DMF (various types), orange book, purple book and Hatch Waxman Act and amendments. Federal Laws – FD & C Act - Definitions, History of FDA; Evolution of Drug Regulations – 1906 Act, 1938 Act, 1962 Amendments; Laws governing evaluation of New Drug products like IND, NDA, ANDA etc.; FDA Product recalls; DESI and OTC Review; Other regulations of 1962 Amendments like labelling requirements of prescription and OTC drugs.

Module: III FDA Enforcement powers, other federal laws affecting pharmaceutical industry (includes latest amendments in the Indian and international systems), Intellectual property rights: Introduction, purpose, guidelines as per Indian and other regulatory authorities.

Module IV: Product Life cycle, Clinical trials: Definition, Phase I, Phase II, Phase III and Phase IV studies, design documentation, presentation and interpretation, statistical analysis of clinical data, factorial design, guidelines as per Indian and other regulatory authorities.

Pharmacovigilance: aims and need for pharmacovigilance, types, predisposing factors and mechanism of adverse drug reactions (ADRs). Detection, reporting, management and monitoring of ADRs, role of pharmacists in pharmacovigilance.

Module V: Intellectual Property Rights & Regulations:

Overview of Intellectual Properties, their types and importance of intellectual property protection. Patents: Requirement of patenting, patent specifications and claims, Indian Patent act 1970 and amendments. Patent search, analysis, drafting and stages of filing patent at national level. Patent licensing, abuse of patents, infringements analysis, Compulsory licensing.

Paris Conventions, Patent Cooperation Treaty (PCT) – introduction, application and general rules. Patent search, analysis, drafting and stages of filing patent at international level. Introduction to concept behind WIPO / WTO / TRIPS / GATT / GATS system & Uruguay Round.

Text Books Recommended

- Generic Drug Product Development, Solid Oral Dosage forms, Leon Shargel and Isader Kaufer, Marcel Dekker series, Vol.143, Pharmaceutical Regulatory Process, Edited by Ira
- R. Berry Marcel Dekker Series, Vol.144
- New Drug Approval Process: Accelerating Global Registrations By Richard A Guarino, MD, 5th edition, Drugs and the Pharmaceutical Sciences, Vol.190.
- Guidebook for drug regulatory submissions / Sandy Weinberg. By John Wiley & Sons. Inc.
- Good Laboratory Practice Regulations, 2nd Edition, Sandy Weinberg Vol. 69, Marcel Dekker Series, 1995.
- Country specific Regulatory Guidelines (available from internet): CDSO publications and updates of drug and Cosmetics act and rules (Govt. of India); CDER Publications and Guidance; EMEA Publications and Guidance; ICH guidelines.

Manufacturing Management

Course Name	Code	Type of course	T-P-PJ	Prerequisite
Manufacturing Management	MGPH2105	Theory	2-0-0	Nil

Learning Objectives:

- This course is designed to impart basic knowledge on planning, designing, and production systems and subsystems.

Learning Outcome

- Differentiate among general management decisions that are beyond strictly manufacturing, and includes skills to manage projects, energy, costs and budgets.
- Generate written, oral, and graphic communications, including the use of current technology, persuasively and accurately in a professional manner.
- Formulate the principles and practice of team-building in an interdisciplinary setting, and integrate negotiation and problem-solving skills.

Module :I

Elements of operations management; introduction to various production and operational functions such as planning, design, production, maintenance, purchase and inventory, logistics, operations strategy – Importance of P&OM in the value chain.

Module:II

Various types of production systems; location of the plant – influencing factors; plant layout – influencing factors and types; process layouts, product layouts, assembly line; lean manufacturing techniques – principles, characteristics and benefits

Module: III

Production planning and control; sequencing and scheduling principles; inventory control; materials management; purchase and inventory control– influencing factors, inventory carrying costs

Module IV

Productivity – work measurement, time study, method study and ergonomics; outsourcing; supply chain management; just-in-time – concepts, advantages and implementation; logistics. Total quality management – quality in various aspects of business; various tools and analysis used in current business environments; maintenance management – breakdown, preventive, total productive maintenance (TPM), planning, maintenance engineering and reporting; Future directions of production and operations management;

Text Books Recommended

- B Mahadevan. Operations Management – Theory and Practice, Pearson Education, 2010.
- J P Saxena. Production and Operations Management; 2nd Edition, Tata Mcgraw Hill, 2009.
- S N Chary. Production and Operations Management; 4th Edition, Tata Mcgraw Hill, 2010.

Financial Reporting & Analysis

Course Name	Code	Type of course	T-P-PJ	Prerequisite
Financial Reporting & Analysis	MGPH2106	Theory	2-0-0	Nil

Learning Objectives:

This course is designed to impart basic knowledge on reviewing and analyzing financial statements.

Learning Outcome

- Read, understand, interpret and analyse general purpose financial reports;
- Understand differing accounting policies and their impact on financial statements;
- Evaluate different types of performance measurement systems in accounting and commonly used financial control systems;
- Demonstrate knowledge of management accounting concepts and techniques

Module :I

Basic Accounting Concepts – Trial balance – reconciliation – Income and expenditure statements – Depreciation -Cash flow statement - purpose - uses - structure - format of cash flow statement - preparing cash flow statement -reporting cash flows - interpreting the cash flow statement

Module : II

Objective and users of financial statements – the reporting entity – elements of financial statements – financial analysis – articulation of financial statements – elements from which financial statements are constructed

Module III

Standards of comparison - earnings quality -techniques of financial statement analysis - using financial ratios - corporate disclosure policy - efficient market hypothesis and financial statement analysis - earnings management -interpreting financial reports - scanning the annual report

Module IV

Effect of changes in accounting principles – sustainable earnings – recurring vs nonrecurring – operating vs non operating
 – continuing vs discontinued Effect of discontinuing operations – comprehensive income – revenue recognition – various forms of sales growth – internally-generated growth, growth from acquisitions. Ratio Analysis
 – Financial statements forecasting – accounting policies, changes in accounting estimates and errors – events after the balance sheet date

Text Books Recommended

- R Narayanaswamy - "Financial Accounting" - A managerial Perspective", Prentice Hall of India 2011
- SN Maheshwari - Principles of Management Accounting, sultan chand and sons 2006
- Gerald I White, Ashipaul C. Sondhi, Dov Fried - "The analysis and use of financial statements, wiley student edition, third edition, 2004.

Pharmaceutical Advertising & Service Management

Course Name	Code	Type of course	T-P-PJ	Prerequisite
Pharmaceutical Advertising & Service Management	MGPH2107	Theory	2-0-0	Nil

Learning Objectives:

This course is designed to impart basic knowledge on managerial process designed to oversee and control the various advertising activities involved in a program to communicate with a firm's target market and which is ultimately designed to influence the consumer's purchase decisions.

Module :I

Services Marketing - meaning - nature of services - Types and importance - Relationship marketing -Mission, strategy, elements of design, marketing plan market segmentation.

Module: II

Marketing mix decisions:- unique features of developing, pricing, promoting and distributing services-Positioning and differentiations strategies, quality of service industries - Achievement and maintenance, customer support service-

Module III

Nature and scope of advertising, Copy design and development, Advertising control and Public Relationship..

Module IV

Marketing of Pharmaceutical and Hospital services :-Understanding the services provided in hospitals and clinics. Understanding the after sale services for any medical and pharmaceutical instruments. Marketing of Non-Profit Organisations :- Services offered by charities - Educational service - miscellaneous services - Power and Telecommunication.

Text Books Recommended

- Services Marketing - Indian experiences - Ravishankar - South Asia Publication 1998, Delhi.
- Services Marketing: Integrating Customer Focus across the Firm – Valarie A Zeitnamd and Mary Jo Bitmer, 3rd Edition, TMH, 2003.
- Services Marketing - Text & Readings - P.K. Sinha & S.C.Sahoo - Himalaya, Mumbai.
- Essence of Services Marketing - Adrian Pyne - Prentice Hall of India, New Delhi.
- Services Marketing - Lovelock - Prentice Hall
- Services Marketing - Jeithaml - I.S.E.
- Services Marketing - Gousalves - Prentice Hall
- Services Marketing - Principles & Practice - Palmer, Prentice Hall.
- Services Marketing - Woodruffe - McMillan.
- Ravi Shankar, Services Marketing, Excel, 2
- Services Marketing - S.M.Jha - Himalaya Publishing Company 1998, Mumbai.