# STUDY AND EVALUATION SCHEME

Course: M. Pharm. (Pharm Marketing Management) Effective From Session 2011–12

## Semester-I

<table>
<thead>
<tr>
<th>S. No</th>
<th>Course Code</th>
<th>Subject</th>
<th>Period (hours/week)</th>
<th>IA</th>
<th>ESE</th>
<th>Subject Total</th>
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<tr>
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<td></td>
<td>Theory</td>
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<tr>
<td>1</td>
<td>PHAR 511</td>
<td>Modern Analytical Technique</td>
<td>4 - 30</td>
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<td>4 - 30</td>
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<td>Drug Regulatory Affairs &amp; Intellectual Property Rights</td>
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<td>Principles and Practice of Management</td>
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T- Theory, P- Practical, IA- Internal Assessment, ESE- End Semester Examination

Note: Duration of ESE- Theory exam is 3 hours and Practical exam is 6 hour
# STUDY AND EVALUATION SCHEME

Course: M. Pharm. (Pharm Marketing Management) Effective From Session 2011 – 12

## Semester-II

<table>
<thead>
<tr>
<th>S. No</th>
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**Total** 600

T- Theory, P- Practical, IA- Internal Assessment, ESE- End Semester Examination

Note: Duration of ESE- Theory exam is 3 hours and Practical exam is 6 hour
STUDY AND EVALUATION SCHEME  
Course: M. Pharm. ((Pharm Marketing Management)  
Semester-III & IV

T- Theory, P- Practical, IA- Internal Assessment, ESE- End Semester Examination

<table>
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SEMESTER I

(First Semester)

PHAR-511 Modern Analytical Techniques

Unit - 1

Unit - 2
Infrared Spectroscopy: Infrared radiation and its interaction with organic molecules, vibrational mode of bonds, instrumentation and applications, effect of hydrogen bonding and conjugation on absorption bands, interpretation of IR spectra. FTIR and ATR, X-ray diffraction methods.

Unit - 3
Nuclear magnetic resonance spectroscopy: Magnetic properties of nuclei, field and precession, chemical shift concept, isotopic nuclei, reference standards and solvents. $^1$H NMR spectra, chemical shifts, multiplicity, coupling constants, integration of signals, interpretation of spectra, decoupling-double resonance and shift reagent methods. Principles of FT-NMR with reference to $^{13}$C NMR, free induction decay, average time domain and frequency domain signals. Spin-spin and spin-lattice relaxation phenomenon. Protein noise decoupled spectra. Nuclear overhauser enhanced $^{13}$C NMR spectra, their interpretation and application. APT and DEPT techniques. Introduction of 2D NMR techniques, COSY, with application.

Unit - 4
Mass spectrometry: Basic principles and brief outline of instrumentation. Ion formation, molecular ion, metastable ion, fragmentation process in relation to molecular structure and functional groups. Relative abundance of isotopes, chemical ionization, FAB, ESI, Maldy, GC-MS and other recent advances in mass spectrometry.

Unit - 5
Chromatographic techniques: Principles of separation and application of Column, Paper, Thin layer and Gas chromatography, HPLC, HPTLC, Size exclusion chromatography, Affinity chromatography, Electrophoresis. Instrumentation of HPLC, Preparative and micropore columns, Reverse phase columns, Mobile phase selection and detectors in HPLC. Instrumentation and application of DCCC. Biological standardization: Bioassay & Radioimmunoassay: ELISA, Radioimmunoassay of drugs like Digitalis & Insulin

PHAR-511 Modern Analytical Techniques

4
Practicals based on theory syllabus.

**Books Recommended:**

10. Gordy, W., Theory & Applications of Electron Spin Resonance, Willy.
14. Beckett and Stenlake, Practical Pharmaceutical Chemistry, CBS.
16. Giddings, J.C., Principles and Theory- Dynamics of Chromatography, Marcel Dekker.
20. Gross - Mass Spectrometry
24. Haffmann, Chromatography.
25. Sethi and Charcgankar, Identification of Drugs in Pharmaceutical Formulations by TLC.
29. George, S., Steroid Analysis in Pharmaceutical Industry.
30. Higuchi, Pharmaceutical Analysis.
31. Bidingmeyer, Practical HPLC Methodology and Applications.
33. Scott, Techniques and Practice of Chromatography.
34. Wilkins, Identification of Microorganism by Mass Spectrometry.

**PHAR-512 Pharmaceutical Biostatistics and Computer Applications**

**Unit - 1**
Methods of collection of data, classifications and graphical representation of data. Binomial and normal probability distribution. Polygon, histogram, measure of central tendency. Significance of statistical methods, probability, degree of freedom, measures of variation - Standard deviation, Standard error.

**Unit - 2**
Sampling, sample size and power. Statistical inference and hypothesis. Tests for statistical significance: student t-test, Chi-square test, confidence level, Null hypothesis.

**Unit - 3**
Linear regression and correlation. Analysis of Variance (one way and two way). Factorial designs (including fraction factorial design). Theory of probability, Permutation and Combination, Ratios, Percentage and Proportion. Two way ANOVA and Multiple comparison procedures.

**Unit - 4**
Non-parametric tests, Experimental design in clinical trials, Statistical quality control, Validation, Optimization techniques and Screening design. Correlation and regression, least square method, significance of coefficient of correlation, nonlinear regression.

**Unit - 5**

**Book Recommended:**
9. Gauthaman, Biostatistics for Pharmacy students.
11. Liwan Po, Statistics for Pharmacist.
DRUG REGULATORY AFFAIRS AND INTELLECTUAL PROPERTY RIGHTS

UNIT - 1
Drug & Cosmetics Act with special reference to schedule Y and M, schedule of medical devices.

UNIT - 2
Concept of total quality management, requirements of GMP, GLP, GCP, Regulatory requirements of drugs and Pharmaceutical (USFD-NDA/ ANDA)

UNIT - 3
Documentation and Maintenance of records.

UNIT - 4
Intellectual property rights patents, Trademarks, Copyrights, Patents Act.

UNIT - 5
Environment protection Act, Pollution Control, Factories Act.

SUGGESTED READINGS:

8. Bansol, IPR Guidelines for Pharm students and Researchers.
PHAR 591 PRINCIPLES & PRACTICE OF MANAGEMENT

UNIT I

UNIT II
Introduction to Functions of Management
Planning: Nature, Scope, Objectives and Significance of Planning, Types of Planning, Process of Planning, Barriers to Effective Planning
Decision Making- types, procedure, evaluation & selection of alternatives.
Organizing: Concept, Organisation Theories, Forms of Organisational Structure, Span of Control, Delegation of Authority, Authority & Responsibility, Organisational Design

UNIT III
Directing: Concept, Direction and Supervision
Motivation: Concept, Motivation and Performance, Special Motivational techniques: Money, participation, reward systems

UNIT IV
Leadership: Concept and Functions, Process and models of Leadership Development, Contemporary views on Leadership: Transformational-Transactional, Charismatic-Visionary leadership.
Controlling: Concept, Types of Control

UNIT V
Human resource management -

SUGGESTED READING:
PHAR 592: PHARMACEUTICAL MARKETING MANAGEMENT

UNIT I
Concept of Marketing Management, Marketing – Mix, Functions of Marketing Management, Marketing Organisations

UNIT II

UNIT III

UNIT IV
Pricing Decisions, Pricing methods, Pricing influences & strategies, Drug Price Control Order (DPCO)
Promotion: Promotion-mix, Advertising, Sales Promotion, Personal Selling, Publicity and Public Relations. Use of internet marketing like e-marketing & e-detailing

UNIT V
Strategic marketing-GAP analysis, Porte’s Five force model, Ansoff’s Matrix, SWOT analysis, Customer relation management.

SUGGESTED READINGS:
SEMESTER II
PHAR 593: INTERNATIONAL PHARMACEUTICAL MARKETING

UNIT I
Overview of World Business and Framework of International Marketing:

World Market Environment:
Political Environment- Political Systems, Political Risks, Indicators of Political Risk, Analysis and Measures to minimize Political Risk.
Cultural Environment- Culture and its Characteristics, Influence of Culture on
(a) Consumption (b) Thinking (c) Communication Process, Cultural Universals.

UNIT II
Planning for International Marketing:

UNIT III
Pricing in global marketing

Marketing Channels & physical distribution
International Channels of Distribution – Channel Members, Channel Management, Retailing in International Scenario, International Physical Distribution

UNIT IV
Advertising & Promotion

UNIT V
Export-Import policy in India
Salient features ; International commercial terms (Incoterms) ; Import-Export documentation - Bill of Exchange, Marine Insurance policy, Invoices and other documents ; Transport documents - Bill of lading, Airway Bill, Letter of Credit – meaning, types of letter of credit ; Financing exports - preshipment credit, post-shipment
finance ; Financing imports ; Export credit Insurance – standard and specific policies, guarantees.

SUGGESTED READINGS
1) Onkvisit .S, Shaw.J - International Marketing (Pearson, 3rd Ed.)
2) Cherunilam F - International Trade and Export Management (Himalaya, 2007)
3) Varshney R.L, Bhattacharya B - International Marketing Management (Sultan Chand & Sons, 9th Ed.)
4) Czinkota - International Marketing (Thompson, 8th Ed.)
5) Cateora Graham - International Marketing (TMH, 10th Ed.)
6) Jain S. – International Marketing (Thomson)
PHAR 594: PHARMACEUTICAL SALES AND ADVERTISING MANAGEMENT

UNIT I
Introduction: Selling as a Part of Marketing, Sales Management Process, Role of Sales Manager, Concept of Personal Selling, Sales Management and Salesmanship, Process of Personal Selling, Qualities of a Successful Salesman.

UNIT II
Goals in Sales Management: Goal Setting Process in Sales Management, Analyzing Market Demand and Sales Potential, Techniques of Sales Forecasting, Preparation of Sales Budget, Formulating Selling Strategies, Designing Sales Territories and Sales Quota.

UNIT III
Sales Force Management: Organizing the Sales Force, Designing the Structure and Size of Sales Force, Recruitment and Selection of Sales Force, Leading and Motivating the Sales Force, Training and Compensating the Sales Force, Evaluating sales force performance

UNIT IV
Advertisement Management-
Advertising - its Purpose and Function
Advertising Planning & decision making: Planning framework, communication & persuasion process, Social, legal & regulatory factors in Advertising
Group influence & Word of mouth advertising: Reference group influence on brand choice, factors influencing the degree of group influence

UNIT V
Role of media, Selection of Media for Advertising, formulation of message, art of copywriting
Branding & packaging strategies: Brand equity, Image & personality, Packaging decisions, Perceptual mapping of customers, Control aspects of Advertising
Advertising Budget

SUGGESTED READINGS:

1. Advertising Management by Rajeev Batra, John G. Myers and David A. Aeker PHI publications
2. Sales Management, Decision Strategies & cases by Richard R. Still, Edward W. Cundiff, Norman P. Govoni
4. Advertising Practice & Principles by William Wells, John Burnett, Sandra Moriatry, PHI
6. Advertising Management by Dr. Manander Mohan, Tata Mc Graw Hill
7. Sales & Distribution Management by Martin Khan, Excel books, Published by Anurag Jain
8. Sales & Distribution Management by S. L.Gupta, published by Excel Books
9. Sales Management Analysis & Decision Making by Thomas N. Ingram, Raymond W. La Forge, Ramon A. Avila, Harcourt college Publishers
UNIT I
Introduction: Definition of Marketing Research, Objective of Marketing Research, Application of Marketing Research, Limitation of Marketing Research

UNIT II

UNIT III
Measurement and Scaling: Types of Scales, Difficulty of Measurement, Sources of Error, Criteria for a Good Scale, Development of Marketing Measures.
Attitude Scales: The Concept of Attitude, Component of Attitude, General Procedure in Attitude Scaling, Rating Methods, Limitations of Attitude Measurement.

UNIT IV

UNIT V

SUGGESTED READINGS:
1. Byod & Others - Marketing Research (All India Traveler Book Seller)
2. Nargundkar - Marketing Research (Tata McGraw Hill, 2nd Ed.)
3. Luck and Rubin - Marketing Research (Prentice Hall of India, 7th Ed.)
Foundation (Cengage Learning, 9th Ed.)
7. William G., Zikmund and Babin Barry J. - Essence of Marketing Research (Cengage Learning)