Pimpri Chinchwad Education Trust's

Pimpri Chinchwad University

Sate, Pune - 412106

Curriculum Structure

Master of Business Administration (MBA)

Pharmaceutical Management

(Pattern 2024)

School of Management

Effective from Academic Year 2025-26

Program Structure

Preamble:

Pharmaceutical Management program combines the study of basic and pharmaceutical sciences with marketing and management studies; and that prepares individuals for careers in pharmaceutical sales, marketing, management, and related fields within the healthcare industry. The business world has changed significantly in the past few decades. The pace at which technology has evolved is unheard and unseen. The fourth industrial revolution is bringing advanced robotics and autonomous transport, artificial intelligence (AI) and machine learning, advanced materials and biotechnology. For instance, AI will almost certainly automate some jobs, particularly those that rely on assembly lines or data collection. The mobile internet and cloud technology are already impacting the business world to a larger extent. What is certain is that the future managers will need to align their skillset to keep pace in this VUCA world. It is therefore imperative for management education to meet the challenges of rapid changing times and technologies.

In this fast disruptive digital economy and VUCA world, high-quality management education is essential for India. Use of technology is one of the powerful ways to enhance the students' ability to meet the ever-changing requirements of the corporate world and society. MBA students are equipped to work across time zones, languages, and cultures. Employability, innovation, theory to practice connectedness are the central focus of MBA curriculum design and development. The core curriculum is designed to give students an in-depth mastery of the academic disciplines and applied functional areas necessary to every non-business and business leader's success.

Vision and Mission of Programme:

Vision

Nurture Leaders and Responsible Corporate Citizens for an era of Digital Business and Transformations.

Mission

- M1: Evolve the curriculum in tune with emerging technology trends and industry needs.
- M2: Develop skills and competencies in the business domains and leading-edge technology.
- M3: Nurture agile leader with ability to drive change, innovation, and transformation.
- M4: To make the students pleasantly employable.

Program Educational Objectives (PEOs):

Post-Graduates from the MBA program are expected to attain or achieve the following.

Program Educational Objectives:

PEO1: Wider comprehending of technical concepts, technology platforms and solutions.

PEO2: Exhibit good business functional knowledge and skills.

PEO3: Inculcate key attributes of visualization of technology, innovation, critical and integrative thinking enable to solve business problems.

PEO4: Inculcate attributes of human values, ethics, and sustainability.

PEO5: Contribute actively to technology and end-user industry or in general management roles in techno rich environments.

PEO6: Demonstrate intra/entrepreneurial spirit required for driving change and transformation in the business world.

Program Outcomes (POs)

- *PO1:* **Leadership**: Students will proactively demonstrate the ability to take initiative. They will be able to generate agreement, fairly and objectively, by working through different, even conflicting, points of view. They will be result oriented and have the ability to take calculated risks.

- *PO2:* **Innovation**: Students will demonstrate the ability to visualize innovative solutions and gather user needs holistically.

- *PO3:* **Critical & Analytical Thinking:** Students will be able to analyse a situation to its root cause, using tangible and intangible information.

- *PO4:* **Communication:** Students will be able to make a good personal impact, and articulate good written and spoken skills.

- *PO5:* **Global Perspective**: Students will be aware of contemporary globally accepted practices, tools, and techniques. They will demonstrate ability to view problems and solutions from a global perspective – organizational, locational, and cultural.

- *PO6:* **Role of Self in the organization & in the society**: Students will demonstrate clarity on their personal goals, while being aware of the social context. They will be sensitive to ethical issues and believe in working out solutions based on sustainability principles.

- *PO7:* **Techno-Proponent (PO):** Apply the knowledge and passion for technology to solve business problems in an effective manner. Demonstrate and apply appropriate cross functional management,

statistical and technological tools to analyse business situations, sense opportunities and suggest innovation solutions. Evangelize technology and drive transformational changes in order to achieve business value. Support, Develop and Empathize with all stakeholders and uphold professional ethics in all settings, and drive transformational changes in order to achieve business value. Support, Develop and Empathise with all stakeholders and uphold professional ethics in all settings.

- *PO8*: **Entrepreneurial Mindset**: Graduates will exhibit an entrepreneurial mindset, demonstrating creativity, innovation, and an ability to identify and pursue business opportunities.

- *PO9:* **Business Acumen:** Graduates will possess a comprehensive comprehending of various business functions, including finance, marketing, operations, and human resources, and will be able to apply this knowledge to solve real-world business problems.

- *PO10:* **Decision-Making**: Students will demonstrate a comprehending of ethical considerations in business and possess the ability to make informed and responsible decisions that align with ethical principles and social responsibility.

Program Specific Outcomes (PSO)

PSO1: Apply pharma technical and managerial skills to make ethical and socially responsible decisions to deal with complex business scenarios and achieve organizational success in the pharma Business Sector.

PSO2: Develop strong leadership skills, to inspire and guide teams towards achieving pharma business objectives with a global mind-set, to comprehend the impact of globalization and cultural diversity on pharmaceutical business operations.

Curriculum Framework for MBA

Sr. No.	Type of course	Abbreviations
1	Major	**MAJ**
2	Professional Elective	**Elective**
2	Elective (Minor Stream/Vocational/Program Specific)	**MIN**
3	Open Electives	**OE**
4	Massive Open Online Courses	**MOOCs**
5	Ability Enhancement Courses	**AEC**
6	Skill Enhancement Courses	**SEC**
7	Vocational Skill Course	**VSC**
8	Summer Internship/ On Job Training	**OJT**
9	Project	**PROJ**
10	Field Project	**FP**
11	Indian Knowledge System	**IKS**
12	Community Engagement Program	**CEP**
13	Value Education Course	**VEC**
14	Value Added Course	**VAC**

Sr. No.	Type of course	No. of Courses	Total Credits	
			No	**%**
1	Major	18	54	61
2	Professional Elective	4	12	14
3	Massive Open Online Courses	4	16	18
4	Value Added Courses	1	0	0
5	Summer Internship/On Job Training	1	4	5
6	Field Project	1	2	2
	Total	29	88	100

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School of Management

Program Structure of Masters of Business Administration 2025-27 MBA Pharma

WEF: A.Y. 2025-26 (Pattern 2024)

Semester III

Course Code	Course Name	Course Type	Teaching Scheme					Assessment Scheme		
			Th	Prac	Tut	Credit	Hrs	CIA	ESA	Total
PMP201	Strategic Management	**MAJM**	3	0	0	**3**	3	**40**	**60**	**100**
PMP202	Consumer Behaviour	**MAJM**	3	0	0	**3**	3	**40**	**60**	**100**
PMP203	SIP -Summer Internship	**INTR**	0	4	0	**4**	8	**50**	**100**	**150**
PMP204	Healthcare & Pharmaceutical Management Essentials	**MOOCs**	4	0	0	**4**	4	**40**	**60**	**100**
PMP205	Hospital Management	**MAJM**	3	0	0	**3**	3	**40**	**60**	**100**
PMP206	Integrated Marketing Communication	**MAJM**	3	0	0	**3**	3	**40**	**60**	**100**
PMP207	Professional Elective 3	**Elective**	3	0	0	**3**	3	**40**	**60**	**100**
	Total		**19**	**4**	**0**	**23**	**27**	**290**	**460**	**750**
PMP207	**Professional Elective 3**									
PMP207A	Marketing 5.0	**Elective**	3	0	0	**3**	3	**40**	**60**	**100**
PMP207B	Advanced Social Media Analytics and Insights	**Elective**	3	0	0	**3**	3	**40**	**60**	**100**
	Foreign Language II									
PFIL201A	Foreign Language II: GERMAN	**AEC**	**2**	**0**	**0**	**0**	**2**	**50**	**0**	**50**
PFIL201B	Foreign Language II: JAPANESE	**AEC**	**2**	**0**	**0**	**0**	**2**	**50**	**0**	**50**

Semester IV

Course Code	Course Name	Course Type	Teaching Scheme					Assessment Scheme		
			Th	Prac	Tut	Credit	Hrs	CIA	ESA	Total
PMP208	Corporate Governance and Business Ethics	**MAJM**	3	0	0	**3**	3	**40**	**60**	**100**
PMP209	Entrepreneurship Development	**MAJM**	3	0	0	**3**	3	**40**	**60**	**100**
PMP210	International Business Management	**MAJM**	3	0	0	**3**	3	**40**	**60**	**100**
PMP211	Professional Elective 4	**Elective**	3	0	0	**3**	3	**40**	**60**	**100**
PMP212	Pharmaceutical Advertising & Services Management	**MAJM**	3	0	0	**3**	3	**40**	**60**	**100**
PMP213	Machine Learning & Artificial Intelligence in Healthcare	**MOOCs**	4	0	0	**4**	4	**40**	**60**	**100**
PMP214	Research/Field Project	**PROJ**	**0**	**4**	**0**	**4**	**8**	**50**	**100**	**150**
	Total		19	4	0	23	27	290	460	750
PMP211	**Professional Elective 4**									
PMP211A	Retail Management	**Elective**	3	0	0	**3**	3	**40**	**60**	**100**
PMP211B	Global Digital Marketing Trends and Strategy	**Elective**	3	0	0	**3**	3	**40**	**60**	**100**

Semester	Credit
I	24
II	24
III	23
IV	23
Total	**94**

3rd Semester

PCET's

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COURSE CURRICULUM

Name of the Program:	MBA Pharma				Semester : III		Level: PG	
Course Name	Strategic Management				Course Code/ Course Type		PMP201/ MAJM	
Course Pattern	2024				Version		1.0	
Teaching Scheme					Assessment Scheme			
Theory	Practical	Tutorial	Total Credits	Hours	CIA (Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/Oral	
3	-	-	3	3	40	60	-	
Pre-Requisite:								
Course Objectives (CO):		The objectives of the course are: 1. To recall learning about the process of strategic management 2. To recognize strategy formulation and implementation 3. To apply the knowledge gained in functional areas of management. 4. To analyze various forms of competitive strategy 5. To evaluate strategies specific to the business vision and mission						
Course Learning Outcomes (CLO):		Students would be able to: 1. To identify the concept of Strategic Management, its relevance, Characteristics, process nature and purpose 2. To explain how firms successfully institutionalize a strategy process. 3. To apply a competitive organizational structure for domestic and overseas operations and gain competitive advantage. 4. To analyze how strategy is weaved in the organizational decision-making process. 5. To evaluate the strategic drive-in multinational firms and their decisions in different markets						

Course Contents/Syllabus:
(All the units carry equal weightage in Summative Assessment and equal engagement)

Descriptors/Topics	CLO	Hours
UNIT I		
Concepts of Strategy - Levels at which strategy operates; Approaches to strategic decision making; Mission and purpose, objectives and goals; Strategic business unit (SBD); Functional level strategies	CLO 1	9
UNIT II		
Environmental Analysis and Diagnosis - Environment and its components; Environment scanning and appraisal; Organizational appraisal; Strategic advantage analysis and diagnosis; SWOT analysis	CLO 2	9

UNIT III		
Strategy Formulation and Choice - Modernization, Diversification Integration - Merger, take-over and joint strategies - Turnaround, Divestment and Liquidation strategies - Strategic choice - Industry, competitor and SWOT analysis - Factors affecting strategic choice; Generic competitive strategies - Cost leadership, Differentiation, Focus, Value chain analysis, Benchmarking, Service blueprinting	CLO3	9
UNIT IV		
Functional Strategies: Marketing, production/operations and R&D plans and policies Personnel and financial plans and policies	CLO4	9
UNIT V		
Strategy Implementation - Inter - relationship between formulation and implementation -Issues in strategy implementation - Resource allocation - Strategy and Structure - Structural considerations - Organizational Design and change - Strategy Evaluation- Overview of strategic evaluation; strategic control; Techniques of strategic evaluation and control.	CLO5	9
Total Hours		45

Learning resources

Textbooks:
1. Azhar Kazmi, STRATEGIC MANAGEMENT & BUSINESS POLICY, Tata McGraw-Hill Publishing Company Limited, New Delhi 2008 edition.
2. Crafting and Executing Strategy: The Quest for Competitive Advantage – Concepts and Cases Arthur A. Thompson Jr. Margaret A. Peteraf John E. Gamble, A. J. Strickland III, Arun K. Jain, McGraw Hill Education, 16/e 2016
3. Contemporary Strategy Analysis, Robert M. Grant, Wiley India, 10e

Reference Books:
1. Amita Mittal, CASES IN STRATEGIC MANAGEMENT, Tata McGraw-Hill Publishing Company Limited, New Delhi 2008 edition
2. Fred R. David, STRATEGIC MANAGEMENT CONCEPT AND CASES, PHI Learning Private Limited, New Delhi, 2008 edition.

Online Resources/E-Learning Resources:
1. Adam Brandenburger, "Strategy Needs Creativity," Harvard Business Review, March-April 2019 edition, at https://hbr.org/2019/03/strategy-needs-creativity.

COURSE CURRICULUM

Name of the Program:	MBA Pharma	Semester : III		Level: PG	
Course Name	Consumer Behaviour	Course Code/ Course Type		PMP202/ MAJM	
Course Pattern	2024	Version		1.0	
Teaching Scheme				**Assessment Scheme**	
Theory	Practical	Tutorial	Total Credits	Hours	CIA (Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/Oral
3	-	-	3	3	40	60	-
Pre-Requisite:					

Course Objectives (CO):	The objectives of the course are: 1. To recall the factors influencing Consumer's purchase decision making process. 2. To apply concepts of consumer behavior to real world marketing decision making. 3. To analyze the consumer decision making process and the role of different determinants that affect the buying decision process. 4. To evaluate the new trends influencing buyer behavior and its effect on new age Indian Consumer. 5. To Design and create strategies for the consumer and organizational buying behavior process for a variety of products.
Course Learning Outcomes (CLO):	Students would be able to: 1. Apply consumer behavior concepts to analyze evolving trends and adapt marketing strategies in the Indian economy. 2. Evaluate the influence of personality, perception, learning, attitudes, and motivation on consumer behavior, informing effective marketing strategies. 3. Analyze cultural, social, and group influences on consumer behavior, informing marketing strategies tailored to diverse Indian markets. 4. Analyze consumer decision-making stages to optimize marketing strategies and enhance customer satisfaction. 5. Create effective strategies for influencing organizational buying behavior based on buyer characteristics, decision processes, and purchasing patterns.

Course Contents/Syllabus:
(All the units carry equal weightage in Summative Assessment and equal engagement)

Descriptors/Topics	CLO	Hours
UNIT I		
Introduction to Consumer Behavior: Definition, Consumer and Customers, Buyers and Users, Organizations as Buyers, Use of Market Segmentation in Consumer Behavior, The Changing Patterns of Consumer Behavior in the context of the evolving Indian Economy, The Internet, e-commerce, and information technology and the changing consumer marketplace, New Trends in Consumer Behavior and its Applications in Marketing.	CLO 1	9
UNIT II		
Unit 2: Individual Determinants of Consumer Behavior: **(a) Consumer Personality & Perception** – Personality, Self-concept, Overview of Personality Theories, Brand Personality, and Emotions. Sensation (Exposure to Stimuli), Factors that Distort Individual Perception, Overview of Price Perceptions, Perceived Product & Service Quality and Consumer Risk Perceptions. **(b) Consumer Learning, Memory and Involvement** - Components of Learning, Behavioural & Cognitive Learning Theory, Concept of Involvement, Dimensions of Involvement, Involvement and Types of Consumer Behavior, Overview and Application of Cognitive Response Model. **(c) Consumer Attitudes & Motivation -** Functions of Attitude, Attitude Models, and Relationship between Attitude, Beliefs, Feelings and Behavior, Learning Attitudes, Changing Attitudes, Attitude Change Strategies for marketers. Motivational Conflict, Defense Mechanisms, Motive Arousal.	CLO 2	9
UNIT III		
Unit 3: Environmental Influences on Consumer Behavior: **(a) Cultural Influences on Consumer Behavior** – Concept of Culture, Values, Sub-cultures, and Influence of Indian Culture on Consumers, Multiplicity of Indian Cultures and their influence on consumer behavior, Cross-cultural Influences. **(b) Social Class and Group Influences on Consumer Behavior -** Concept of Social Class, Social Sub-Class, Money and Other Status Symbols, AIO classification of Lifestyle, VALS Typology, Source of Group Influences, Types & Nature of Reference Groups, Reference Group Influences and Applications, Group Norms and Behavior, Family Life Cycle Stages, Family Purchases, Family Decision-making, Purchasing Roles within family, Word-of-Mouth Communications within Groups, Opinion Leadership. **(c) Indian Consumer: Social classes in India** – Overview of old and new Socio-Economic Classes (SEC) in Urban & Rural Markets, Characteristics of BoP Consumers, Gen Z Consumers, HNI Consumers in India.	CLO3	9
UNIT IV		
Unit 4: Consumer Decision Making Process: (a) Problem Recognition - Types of consumer decisions, types of Problem Recognition, utilizing problem recognition information (b) Search & Evaluation – Types & Source of information, Search, Experience and Credence Aspects -Marketing Implications, Situational Influences on Purchase Decisions, Nature of Situational Influence & Variables (c) Purchasing Process - Why do people shop? Store & Non-store Purchasing Processes, Purchasing Patterns (d) Post-purchase Evaluation & Behavior - Consumer Satisfaction, Dissatisfaction, Customer Delight, Consumer Complaint Behavior, Post- Purchase Dissonance. (e) Consumer Decision **Models** - Types of Consumer Decisions, Nicosia Model of Consumer Decision-making, Howard-Sheth Model, Engel, Blackwell, Miniard Model	CLO4	9
UNIT V		
Unit 5: Organizational Buying Behavior: Introduction, Organizational Buyer Characteristics, Purchase and Demand Patterns, Involvement and Types of	CLO5	9

Organizational Buying Decisions, Factors Influencing Organizational Buyer Behavior, organizational Buyer Decision Process, Organizational Buying Roles. Organizational Buying Strategies. Emerging Trends in Organizational Buying. Globalization and its implications for B2B markets.		
Total Hours		**45**

Learning resources

Textbooks:
1. Consumer Behavior, David L. Loudon & Albert J. Della Bitta, Tata McGraw Hill, 4th Edition
2. Consumer Behavior, by Kumar Leon G., Schiffman;Joe, Wisenblit;S. Ramesh, Pearson Education; Twelfth edition (31 December 2018)
3. Consumer Behavior : Building Marketing Strategy, by David L. Mothersbaugh, Del I. Hawkins, Susan Bardi Kleiser, McGraw Hill, 14th Edition – 5 May 2022.

Reference Books:
1. "We are like that only" by Rama Bijapurkar, Portfolio; Revised edition (21 August 2009)
2. "Consumer Behaviour" by Zubin Sethna & Jim Blythe, SAGE Publications India Pvt Ltd, 1 January 2024
3. Consumer Behavior, 13/e Paperback – by Michael R. Solomon & Tapan Kumar Panda, Pearson Education 30 January 2020

Online Resources/E-Learning Resources:
1. "Consumer Behavior" by Indian Institute of Management, Bangalore.
2. "Marketing Analytics: Know Your Customers" by Columbia University.
3. Understanding and shaping consumer behavior in the next normal, McKinsey, July 2020 (
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COURSE CURRICULUM

Name of the Program:	MBA Pharma		Semester : III		Level: PG
Course Name	Healthcare & Pharmaceutical Management Essentials		Course Code/ Course Type		PMP204/MOOCs
Course Pattern	2024		Version		1.0

Teaching Scheme					Assessment Scheme			
Theory	Practical	Tutorial	Total Credits	Hours	CIA (Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/Oral	
4	0	0	4	4	40	60	-	

Pre-Requisite: Pharma Graduation Degree

Course Objectives (CO):	The objectives of the course are: 1. Recall and summarize key historical trends and current issues in the healthcare marketplace. 2. Explain and describe the challenges and opportunities within healthcare provider services, insurance markets, and payment models. 3. Apply regulatory and intellectual property knowledge to evaluate pharmaceutical and medical device innovations. 4. Analyze the economic impact of healthcare innovations, using methods such as cost-effectiveness analysis and market assessments. 5. Synthesize learning to develop a comprehensive healthcare marketplace innovation plan.
Course Learning Outcomes (CLO):	Students would be able to: 1. Understand the evolution of healthcare markets and identify the key drivers of healthcare spending and quality trends. 2. Analyze the healthcare provider and insurance markets, focusing on their roles, challenges, and innovations. 3. Evaluate the impact of regulatory frameworks and intellectual property on pharmaceutical and medical device innovations. 4. Assess the global impact of medical technologies and innovations, including cost-effectiveness and market dynamics. 5. Develop a strategic approach to healthcare marketplace innovations, incorporating key factors like valuation, provider satisfaction, and financial sustainability.

Course Contents/Syllabus:

Descriptors/Topics	Weightage	Hrs
Healthcare Marketplace **Offered by the University of Minnesota on Coursera**	Level: Beginner	Duration

Module 1: Evolution of the Healthcare Market Place • Marketplace Overview • Healthcare Spending Drivers & Quality Trends • Market Evolution: Pre & Post-World War II, Health Cost Growth • Key Issues for the 21st Century & Effects of Health Behaviours		
Module 2: Physician and Hospital Services Market • Provider Market Overview & Price Discrimination • Physician Market Evolution, Sites of Care, and 21st Century Role • Hospital Market Evolution, Features, Scale, Scope, and Issues • Quality, Safety, Future Trends, and Policy Impact		
Module 3: Insurance Market • Risk, Wealth Utility, and How Insurance Works • Moral Hazard, Adverse Selection, and Public/Private Insurance History • Major Inflection Points, Current Issues, and U.S. Health Reform • Future Health Reform (Parts 1 & 2)	**22%**	20 Hrs
Module 4: Medical Technology Markets • Medical Devices & Drugs, Evolution, and FDA Approval • Cost-Effectiveness and Global Health Technology Dossier • Pharma & Device Convergence and Technological Worth		
Module 5: Global Medical Innovation • Globalization, Medical Tourism (Growth & India Case) • Health 'Bads', Health IT Goals, Value, and Impact • Information Technology for Insurers, Providers, and Integrated Care • Innovation Valuation: Technology, Ownership, Safety, and ROI • Final Summary, Market Sizing, and Medical Tourism Impact		
Syllabus for *Healthcare Delivery Providers* Offered by the University of Minnesota on Coursera	**Level**: Beginner	**Duration**

Module 1: Introduction to Healthcare Delivery • Overview of the Lenses • Sites, People, and Payment in Healthcare Delivery • The Quadruple Aim: Clinical Quality, Patient Satisfaction, Cost of Care, Population Health, and Worker Satisfaction • Accountable Care Organizations (ACOs): Overview, Function, Lessons, and Other Payment Arrangements • Changing Demographics and Healthcare Reform		
Module 2: Hospitals: Community and Speciality • Overview and Organization of Hospitals • Services and Hospital-Based Physicians • Hospital Payments and Performance Measurement (Clinical Quality, Patient Satisfaction, Financials) • Types of Hospitals: Critical Access, Single Service Line, Ambulatory Surgery Centers • Challenges, Innovations, and Community Needs		
Module 3: Post- Acute Care & Community – Based Services • Post-Acute Care: Sites, Spending, Trajectories, and Challenges • Key Facilities: LTACHs, IRFs, SNFs, Home Health, Palliative Care, and Hospice • Performance, Challenges, and Innovations across Services • Other Community Health Services: Group Homes, Adult Day Care, and Social Service Organizations	28%	25 Hrs
Module 4: Physicians: Primary, Speciality, Newer Settings & Population Health • Primary Care: Organization, Services, Payments, and Performance • Medical Homes and Innovations in Primary Care • Specialty Care: Services, Payments, Performance, and Innovations Emerging Care Settings: Retail Clinics, Virtual Care, Urgent Care, and House Calls		
Module 5: Healthcare Delivery of Tomorrow • Stakeholders: Governmental and Private Payers, Employers, Community/Consumers, Pharmaceuticals & Devices • Improving Healthcare: County Health Rankings, Process Improvements, and Statewide Quality Models • Future Focus: Key Attributes of Leaders and Final Reflections		
Syllabus for *Pharmaceutical and Medical Device Innovations*	**Level:** Beginner	**Duration**

Offered by the University of Minnesota on Coursera		
Module 1: The Pharmaceutical Industry: Bench Science to Bedside • Drug Development Trends & Challenges • FDA, Intellectual Property, and IND Phases • Global Regulatory & Reimbursement (US & International) **Module 2: Pharmaceutical Market Deployment & Management** • Defining Market Space & Customer Influences • Competitors, Generic & OTC Drugs • Cancer Drug Payment Criteria (US & UK) **Module 3: The Medical Device Industry: Bench Science to Bedside** • Regulatory Basics, Device Failure & Reimbursement Strategy • Device-Pharma Convergence & Provider Payments • Medical Device Industry: Reimbursement Strategy **Module 4: Medical Device Market Deployment & Management** • Market Space, Innovation & Global Partnerships • Competitor Analysis & 510k Process • Go to Market, Managing Market Share, & Product Longevity	13%	~10Hrs
Syllabus for *Medical Technology and Evaluation* Offered by the University of Minnesota on Coursera	**Level:** Beginner	**Duration**
Module 1: Medical Technology Assessment in the Current Health Care Financing and Regulatory Environment • Introduction to medical technology clients and the need for assessment • Impact of new technologies on health care expenditures • Regulatory environment for pharmaceuticals and medical devices • Government vs. Private Payers, Inpatient Hospital and Prescription Drug Payments • **Module 2: Clinical Trials and Insurance Claims Data** • Introduction to Clinical Trials, Randomization, and Blinded Designs • Administrative Data: Elements, Sources, and Bias • Combining Trial and Claims Data	13%	~12 hrs

Module 3: The Elements of Medical Technology Assessments		
• Types and Uses of Assessments: CEA vs CUA • Resources, Costs, and Considerations • Benefits, Quality Adjusted Life Years (QALYs), and Measuring Quality of Life (QoL)		
Module 4: Methodological Approaches and Considerations • Uses of CEA, Constructing and Interpreting an ICER • Baye's Rule, Discounting, and Decision Models • Introduction to Uncertainty, Monte Carlo Simulation, and Markov Models		
Syllabus for *Healthcare Marketplace Capstone (Project Oriented)* Offered by University of Minnesota on Coursera	**Level:** Beginner	**Duration:**
Module 1: What is your Health Marketplace Innovation? • What is a Device? What is a Drug? • Preparing a Global Health Technology 'Dossier' • Key Issues of the 21st Century • Key Questions for an Innovation Valuation • What is the Technology?		
Module 2: What is the Voice of the Healthcare Provider? • Healthcare Worker Satisfaction • What Challenges are Facing Hospitals? • Specialists: Challenges & Innovations • PEOPLE in Healthcare Deliver		
Module 3: Regulatory and IP Status of the Innovation • Pharmaceutical Industry: Intellectual Property • Investigational New Drug (Phase 1 to Phase 4) • Medical Device Industry: Regulatory Basics • The 510k: Friend or Foe? • Keeping the Product Fresh and Safe in the Long Run	10%	~9 hrs
Module 4: How will the Innovation Generate Revenue? • How do new technologies impact health care expenditures? • Introduction to Administrative Data • The Types and Uses of Assessments • Introductions to Costs • Costing		
Module 5: Submitting the Final Project Healthcare Marketplace Capstone Project		

Learning resources

Online Resources:

1. Healthcare Marketplace by University of Minnesota by Coursera
   https://www.coursera.org/learn/healthcare-marketplace?specialization=healthcare-marketplace
2. Healthcare Delivery Providers by University of Minnesota by Coursera
   https://www.coursera.org/learn/healthcare-delivery-providers?specialization=healthcare-marketplace
3. Pharmaceutical and Medical Device Innovations by University of Minnesota by Coursera
   https://www.coursera.org/learn/pharma-medical-device-innovations?specialization=healthcare-marketplace
4. Medical Technology and Evaluation by University of Minnesota by Coursera
   https://www.coursera.org/learn/healthcare-medical-technology?specialization=healthcare-marketplace
5. Healthcare Marketplace Capstone by University of Minnesota by Coursera
   https://www.coursera.org/learn/healthcare-marketplace-capstone?specialization=healthcare-marketplace

COURSE CURRICULUM

Name of the Program:	MBA Pharma	Semester : III		Level: PG	
Course Name	Hospital Management	Course Code/ Course Type		PMP205/ MAJM	
Course Pattern	2024	Version		1.0	

Teaching Scheme					Assessment Scheme			
Theory	Practical	Tutorial	Total Credits	Hours	CIA (Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/Oral	
3	-	-	3	3	40	60	-	

Pre-Requisite: Pharma Graduation Degree

Course Objectives (CO):	The objectives of the course are: 1. Understand the foundational concepts, philosophy, and objectives of hospitals as organizations. 2. Learn the principles, nature, and significance of hospital administration. 3. Familiarize with the roles and functions of different administrative and support services in hospitals. 4. Explore the organizational structure and management levels within hospitals. 5. Evaluate hospital services and understand recent advances in hospital administration.
Course Learning Outcomes (CLO):	Students would be able to: 1. Understand the definition, philosophy, and classification of hospitals, and their role as a system within the community. 2. Analyze the principles and differences between hospital administration and management and evaluate the ethical responsibilities of administrators. 3. Examine the key administrative, medical, nursing, and support services essential for effective hospital operations. 4. Assess the levels, roles, and responsibilities of hospital management to ensure optimal organizational functioning. 5. Evaluate hospital services using modern management techniques and identify recent advances in hospital administration.

Course Contents/Syllabus:
(All the units carry equal weightage in Summative Assessment and equal engagement)

Descriptors/Topics	CLO	Hours
UNIT I		
Concept of Hospitals: Definition, philosophy and objectives of Hospital; Classification of Hospitals; Hospital as a System and its peculiarities; Intramural and Extramural Functions of a Hospital; Managerial activities in a Hospital; Relationship between a Hospital and its community.	CLO 1	7
UNIT II		
Introduction to Hospital Administration: Meaning, nature and principles of Administration; Administration vs Management; Meaning and rationale of Hospital Administration; Roles of Hospital Administration; Skills of Hospital Administration; Types of Hospital Administrators; Professional bodies of Hospital Administrators; Code of Ethics for Hospital Administrators.	CLO 2	8
UNIT III		
Overview of Hospital Services: Administrative Services; Medical and Ancillary Services; Nursing Services; Supportive Services: Pharmacy, Medical Stores, Housekeeping, Ward Management, CSSD, Laundry, Dietary, Security, and Transport.	CLO3	10
UNIT IV		
Hospital Management: Levels and Roles: Governing Board; Executive Board and Advisory Board; CEO; Medical Administration Nursing Administration; Hospital Administration; Middle Level Mangers in Hospital and their Responsibilities; Structuring Hospital Organization	CLO4	10
UNIT V		
Evaluation of Hospital Services; Management Techniques in Hospitals; Recent Advances in Hospital Administration.	CLO5	10
Total Hours		45

Learning resources
Textbooks:
1. Principles of Hospital Administration and Planning by Mr. B. M. Sakharkar
2. Hospital Administration and Management by Joydeep Das, Jaypee Publication.

References:
1. Srinivasan, S. Management process in health care. New Delhi: Voluntary Health Association of India.
2. Joshi DC, Joshi, Mamta, Hospital administration. Jaypee Brothers Medical Publications

COURSE CURRICULUM

Name of the Program:	MBA Pharma	Semester : III		Level: PG	
Course Name	Integrated Marketing Communication	Course Code/ Course Type		PMP206/ MAJM	
Course Pattern	2024	Version		1.0	
Teaching Scheme				**Assessment Scheme**	
Theory	Practical	Tutorial	Total Credits	Hours	CIA (Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/Oral
3	-	-	3	3	40	60	-
Pre-Requisite:					
Course Objectives (CO):	**The objectives of the course are:** 1. Introduce the concept and evolution of IMC in modern marketing. 2. Develop skills for strategic IMC planning and brand alignment. 3. Understand key communication tools used in IMC campaigns. 4. Explore digital integration and AI applications in IMC. 5. Build ability to measure, evaluate, and manage IMC ethically.				
Course Learning Outcomes (CLO):	**Students would be able to:** 1. Understand the fundamentals and strategic role of IMC. 2. Plan IMC campaigns using consumer insights and brand alignment. 3. Apply creative and media tools in communication planning. 4. Integrate digital and AI-based platforms in IMC. 5. Evaluate and optimize IMC campaigns ethically.				

Course Contents/Syllabus:
(All the units carry equal weightage in Summative Assessment and equal engagement)

Descriptors/Topics	CLO	Hours
UNIT I		
Unit 1: Foundations of IMC— Introduction to Integrated Marketing Communications, Importance of IMC in Modern Marketing, Key Components of IMC, Historical Evolution and Milestones of IMC, IMC vs Traditional Marketing Communication, Role of IMC in Branding, IMC as a Strategic Business Tool, Understanding IMC in a Global Context, Current Trends in IMC, Design Thinking in IMC Strategy.	CLO 1	9
UNIT II		
Unit 2: Strategic IMC Planning and Consumer Insight— Identifying Target Audience in IMC, Identifying and Overcoming Integration Barriers, Identifying and Overcoming Integration Barriers (Case-Based Discussion), SWOT and Opportunity Analysis in IMC, Aligning IMC Strategy with Business Goals, Aligning IMC Strategy with Business Goals (Workshop), Competitive Analysis and Brand Positioning, Competitive Analysis and Brand Positioning (Examples & Tools), Customer Journey Mapping, Role of Customer Insights in IMC.	CLO 2	9

UNIT III		
Unit 3: Creative Tools and Communication Channels— Creative Strategy in IMC, Elements of a Creative Brief, Message Design and Copywriting, Storytelling in Integrated Branding, Advertising – Types and Strategies, Advertising – Case Studies and Campaigns, Personal Selling – Tools and Techniques, Sales Promotion – Objectives and Planning, Direct Marketing in IMC, Public Relations and Sponsorships.	**CLO3**	**9**
UNIT IV		
Unit 4: Digital Integration and Technological Tools— The Role of Digital Marketing in IMC, Social Media Advertising – Platforms and Strategy, Social Media Advertising – Analytics and Campaign Design, Integrating Paid, Owned, and Earned Media, Use of AI in IMC Strategy, Personalization Using AI-Powered Tools, Competitive Intelligence Tools for IMC, Interactive Content and Engagement Tactics.	**CLO4**	**9**
UNIT V		
Unit 5: Evaluation, Ethics and Future Outlook— Budgeting Techniques for IMC Campaigns, IMC Campaign Measurement using Integrated KPIs, ROI and Optimization of Media Mix, Ethical and Legal Aspects in IMC, The Future of IMC: Challenges and Opportunities, IMC in Action – Integrated Campaign Presentation, Revision and Query Solving Session.	**CLO5**	**9**
Total Hours		**45**

Learning resources

Textbooks:

1. Marketing Management,15th Edition, Philip Kotler, Kevin Lane, Keller, Published by-Pearson.
2. Marketing Management-A South Asian Perspective, ISBN -978-0-13-600998, 13th Edition, Philip Kotler, Kevin Keller, Abraham Koshy, Mithileshwar Jha, Published by Dorling Kindersley(India)Pvt. Ltd, Licensees of Pearson Education in South Asia
3. Marketing Management-Global Perspective -Indian Context, 4th Edition-2010V.S. Ramaswamy& S. Namakumari, Macmillan Publishers India LMT, New Delhi.

Online References:

1. Integrated Marketing Communications: The Holistic Approach https://books.google.as/books?id=jbT-I30Q3HEC&printsec=frontcover#v=onepage&q&f=false
2. Integrated Marketing Communications: A Global Brand-Driven Approach By Philip J. Kitchen, Marwa E. Tourky - https://www.google.co.in/books/edition/Integrated_Marketing_Communications/YJtXEAAAQBAJ?hl=en&gbpv=1&printsec=frontcover

References:

1. Semenik, R. J., Allen, C., O'Guinn, T. C., & Kaufmann, H. R. (2012). Advertising and promotions: An integrated brand approach. China: Couth-Western Cengage Learning.
2. Belch, G.E., & Belch, M.A. (2017). Advertising and Promotion: An Integrated Marketing Communications Perspective (11th Ed.). McGraw Hill Higher Education.
3. Kotler, P., & Keller, K. L. (2017). Marketing management. (15th Ed.). Pearson India

COURSE CURRICULUM

Name of the Program:	MBA (Pharma)	Semester : III		Level: PG	
Course Name	Marketing 5.0	Course Code/ Course Type		PMP207A/MAJE	
Course Pattern	2024	Version		1.0	

Teaching Scheme					Assessment Scheme			
Theory	Practical	Tutorial	Total Credits	Hours	CIA (Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/Oral	
3	0	0	3	3	40	60	-	

Pre-Requisite: Bachelor's Degree

Course Objectives (CO):	The objectives of the course are: 1. Understand the shift from traditional to digital and human-centric marketing. 2. Explore consumer behavior in the digital era and connected subcultures. 3. Familiarize students with emerging marketing technologies and tools. 4. Highlight integration of technology with marketing strategies. 5. Create awareness about ethical and strategic issues in tech-driven marketing.
Course Learning Outcomes (CLO):	Students would be able to: 1. Describe concepts of Marketing 4.0 & 5.0, including digital subcultures and tech-driven frameworks. 2. Explain the shift to digital, inclusive, and human-centric marketing with focus on CX. 3. Apply the 5A path, content, and data strategies for integrated brand experiences. 4. Analyze the impact of AI, predictive tools, AR/VR, block chain, and contextual marketing on customer behavior and loyalty. 5. Design human-centric, tech-enabled strategies that deliver WOW customer experiences.

Course Contents/Syllabus:

Descriptors/Topics	CLO	Hours
UNIT I		
Introduction to Marketing 4.0: **Power Shift to Connected Customers**- Inclusive marketing, horizontal communication, social communities, frugal innovation. **The New Customer Journey & Subcultures**: Online Go-to-Market Options, Myths of Connectivity, Co-creation, Advocacy, Digital Subcultures- Youth, Women, Netizens. **Blending Traditional & Digital Approaches**- Customer Path 4A to 5A, O-Zone, 4Ps to 4Cs, Brand Humanization. Content as Conversation,	CLO 1	9

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Hashtags, Contextual Marketing, Omni channel Integration – Offline and Online, Gamification, Social CRM, Mobile Apps for Engagement		
UNIT II		
Introduction to Marketing 5.0 & Digital-Ready Organizations: **Journey from 4.0 to 5.0** - Technology for Humanity, Market Polarization, Corporate Activism, Marketing to Baby Boomers, X, Y, Z, and Alpha **Digital Transformation in Organizations-** Impact of COVID-19 and the Rise of Digital, Opportunities and Challenges of Going Digital, Digital Capabilities and Readiness, Digital Leadership, Digital Divide **Technology Enablers in Marketing 5.0-** Bionics and Human-like Technologies	CLO 2	9
UNIT III		
UNIT 3: Data-Driven and Human-Centric Marketing **Customer Experience in the Digital World-** Human and Machine Collaboration in CX, Balance Between Tech and Human Touch, Trends Shaping CX Today. **Data-Driven Marketing-** Segment of One, Building a Data Ecosystem, Leveraging Analytics for Insights. **Human-Centric Branding-** Digital Anthropology in Marketing, Six Attributes of Human-Centric Brands, When Brands Become "Human"	CLO3	9
UNIT IV		
Predictive & Contextual Marketing **Predictive Marketing Fundamentals-** How It Works & Its Applications, Building Predictive Models, Anticipating Market Demand. **Contextual Marketing-** Triggers and Responses, Three Levels of Personalized Experience, Creating Sense-and-Respond Experiences. **Smart Infrastructure & Customer Path Optimization-** Real-Time Interaction Models, Use of AI in Contextual Marketing.	CLO4	9
UNIT V		
Augmented & Agile Marketing **Augmented Marketing Concepts-** Tech-Empowered Human Interfaces, Digital Tools to Enhance Customer Experience, Augmented & Virtual Reality in Marketing. **Agile Marketing-** Need for Agile Execution, Operations at Pace & Scale, Use of Agile Sprints in Campaigns. **Blockchain in Marketing-** Transparency, Trust, and Traceability. **Delivering WOW Moments-** Enjoy, Experience, Engage Strategy.	CLO5	9
Total Hours		45

Text Reading:
1. Marketing5.0Technology for Humanity, Philip Kotler, Hermawan Kartjaya, and Iwan Setiawan John Wiley &Sons, Inc. Hoboken, New Jersey
2. Predictive Marketing: Easy Ways Every Marketer Can Use Customer Analytics and Big Data, Omer Artun, Dominique Levin
3. The Context Marketing Revolution: How to Motivate Buyers in the Age of Infinite Media, Mathew Sweeze –Harvard Business Review Press (24March 2020); Penguin Random house
4. The Six Disciplines of Agile Marketing: Proven Practices for More Effective Marketing and Better Business Results, Jim Ewel, Wiley; 1stedition (October 13,2020)

References:

- Marketing to Gen Z: The Rules for Reaching This Vast--and Very Different- Generation of Influencers, by Jeff Fromm, Angie Read, Amacon; Specialed. edition (6 March 2018)
- Digital Channels A Complete Guide, by Gerardus Blokdyk, 5 star cooks (13October2018)
- The Ten Principles Behind Great Customer Experiences (Financial Times Series), Matt Watkinson Paperback, Pearson Education (19June2020)

Suggested Audio Visuals link

- https://www.youtube.com/watch?v=JbzTDtlhpnU, Introduction to Marketing 5.0:Technology for Humanity with Iwan Setiawan.
- https://www.youtube.com/watch?v=jwUobgplGqk Marketing 5.0, Book Review.
- https://www.youtube.com/watch?v=tav4S1lKA_g, Agile Marketing, accessed on 7th June 2021
- https://www.youtube.com/watch?v=ZFTgGi06vbM,ARvsVR, What are virtual and Augmented Realities.
- https://www.youtube.com/watch?v=1obcLCB5WTU What is Contextual Marketing. Benefits of Contextual Marketing.
- https://marketingtrends.com/episodes/erik-newton/

Suggested Journals

- https://www.forbes.com/sites/blakemorgan/2019/12/17/5-predictions-for-customer-experiencein-2020/?sh=26ed6f962ec7.
- https://www.pwc.com/us/en/services/consulting/library/consumer-intelligence-series/futureof-customer-experience.html.
- https://www.thinkwithgoogle.com/intl/en-aunz/future-of-marketing/digital-transformation/5-keysteps-digital- transformation-success/
- https://futurumresearch.com/research-reports/experience-2030-global-report-customerexperience/
- https://www.cm.com/blog/how-finding-the-right-balance-between-technology-and-humans-willimprove-customer-experience/

COURSE CURRICULUM

Name of the Program:	MBA (Pharma)	Semester : III		Level: PG	
Course Name	Advanced Social Media Analytics and Insights	Course Code/ Course Type		PMP207B/MAJE	
Course Pattern	2024	Version		1.0	
Teaching Scheme					**Assessment Scheme**
Theory	Practical	Tutorial	Total Credits	Hours	CIA (Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/Oral
3	0	0	3	3	40	60	0
Pre-Requisite:							

Course Objectives (CO):	The objectives of the course are: 1. Students will recall and list key social media metrics and KPIs. 2. Students will demonstrate understanding by explaining advanced social media analytics techniques and methodologies. 3. Students will apply social media analytics tools to analyze data and derive actionable insights. 4. Students will analyze social media data to evaluate the effectiveness of digital marketing campaigns. 5. Students will develop strategies for optimizing digital marketing efforts based on social media analytics insights.
Course Learning Outcomes (CLO):	Students would be able to: 1. Students will recall and list key social media metrics and KPIs. 2. Students will demonstrate understanding by explaining advanced social media analytics techniques and methodologies. 3. Students will apply social media analytics tools to analyze data and derive actionable insights. 4. Students will analyze social media data to evaluate the effectiveness of digital marketing campaigns. 5. Students will develop strategies for optimizing digital marketing efforts based on social media analytics insights.

Course Contents/Syllabus:

Descriptors/Topics	CLO	Hours
UNIT I		
Introduction to Advanced Social Media Analytics: Overview of Social Media Analytics. Importance of Social Media Metrics. Key Performance Indicators (KPIs) in Social Media. Social Media Listening and Monitoring Tools. Data Collection Methods. Data Privacy and Ethics in Social Media Analytics. Case Studies in Advanced Social Media Analytics	CLO 1	9
UNIT II		
Advanced Social Media Metrics and KPIs - Engagement Metrics (Likes, Comments, Shares). Reach and Impressions. Conversion Metrics (Click-Through	CLO 2	9

Rate, Conversion Rate). Sentiment Analysis. Influencer Metrics. Competitive Analysis Metrics. Advanced Custom Metrics and KPIs

UNIT III		
Descriptors/Topics **Social Media Analytics Tools and Platforms** - Google Analytics and Social Media Integration. Facebook Insights and Analytics. Twitter Analytics. LinkedIn Analytics. Instagram Insights. Social Media Management Platforms (e.g., Hootsuite, Sprout Social). Data Visualization Tools for Social Media Analytics	CLO3	9
UNIT IV		
Descriptors/Topics **Data Analysis and Interpretation** - Data Cleaning and Preparation. Exploratory Data Analysis (EDA). Statistical Analysis Techniques. Text and Sentiment Analysis. Social Network Analysis. Predictive Analytics for Social Media. Advanced Data Visualization Techniques.	CLO4	9
UNIT V		
Descriptors/Topics **Application of Social Media Analytics in Digital Marketing -** Campaign Performance Analysis. Audience Segmentation and Targeting. Content Optimization Strategies. Social Media Advertising Optimization. Crisis Management and Reputation Monitoring. Social Media ROI Measurement. Future Trends in Advanced Social Media Analytics.	CLO5	9
Total Hours		**45**

Learning resources

Text Reading:
- Marketing Metrics: The Manager's Guide to Measuring Marketing Performance Hardcover – Illustrated, 3 September 2015 by Paul Farris (Author), Neil Bendle (Author), Phillip Pfeifer (Author), Publisher: Pearson FT Press; 3rd edition (3 September 2015), Edition: 3rd
- Influencer Marketing for Brands: What YouTube and Instagram Can Teach You About the Future of Digital Advertising 1st ed. Edition, Kindle Edition by Aron Levin (Author) Format: Kindle Edition, Publisher : Apress; 1st ed. edition (30 November 2019), Edition:1st

References:
- Web Analytics 2.0: The Art of Online Accountability and Science of Customer Centricity 1st Edition, Kindle Edition by Avinash Kaushik (Author) Format: Kindle Edition, Publisher : Sybex; (30 December 2009), Edition: 1

Additional Reading:
- Social Media Analytics: Techniques and Insights for Extracting Business Value Out of Social Media https://www.oreilly.com/library/view/social-media-analytics/9780133892956/

- Social Media Marketing For Dummies, 4th Edition https://www.oreilly.com/library/view/social-media-marketing/9781119617006/?_gl=1*1qlcgw6*_ga*NjkyNzI2ODM1LjE3MDg2MDkyOTE.*_ga_092EL089CH*MTcwODYwOTI5MC4xLjAuMTcwODYwOTMzNS4xNS4wLjA.

- Marketing Metrics: The Manager's Guide to Measuring Marketing Performance, Third Edition https://www.oreilly.com/library/view/marketing-metrics-the/9780134086040/?_gl=1*16pwdtj*_ga*NjkyNzI2ODM1LjE3MDg2MDkyOTE.*_ga_092EL089CH*MTcwODYwOTI5MC4xLjAuMTcwODYwOTMzMy4xNy4wLjA.

4th Semester

COURSE CURRICULUM

PCET's Pimpri Chinchwad University — Learn | Grow | Achieve

Name of the Program:	MBA Pharma				Semester : IV		Level: PG	
Course Name	Corporate Governance and Business Ethics				**Course Code/ Course Type**		PMP208/MAJM	
Course Pattern	2024				**Version**		1.0	
Teaching Scheme					**Assessment Scheme**			
Theory	**Practical**	**Tutorial**	**Total Credits**	**Hours**	**CIA (Continuous Internal Assessment)**	**ESA (End Semester Assessment)**	**Practical/Oral**	
3	-	-	3	3	40	60	-	
Pre-Requisite: Graduation Degree								

Course Objectives (CO):	The objectives of the course are: 1. To provide the knowledge about the basics and overview of business ethics and corporate governance. 2. To apply ethical concepts to business decision making. 3. To understand the statutory framework developed in India for achieving sound corporate governance practices. 4. To know the importance and significance of adopting corporate social responsibility orientation among the employees and management. 5. To Demonstrate how general concepts of governance apply in a given situation or given circumstances.
Course Learning Outcomes (CLO):	Students would be able to: 1. Develop understanding of Business Ethics and corporate governance and their perspectives. 2. Comprehend and practice Indian Ethos and Value Systems for professional excellence and personal growth. 3. Analyze the behavior of individuals and groups in organizations in order to work effectively in teams. 4. Assimilate Ethical concepts and correlate it during various decision-making situations. 5. To know the significance of the Corporate Governance in the overall functionality of the organization.

Course Contents/Syllabus:

Descriptors/Topics	CLO	Hours
UNIT I		
Introduction of Business Ethics Business Ethics: Concepts: Introduction to Business ethics, Principles, Need, Importance, Nature, Scope, Objectives of Business Ethics, values and ethics, Factors influencing Business Ethics, Characteristics of ethical Organization, Theories: Normative, Egoism, Utilitarianism, Kantianism, Stakeholder theory, Social Contract theory. Role of Indian Ethos in Managerial Practices	**CLO 1**	**9**

UNIT II		
Models of Business Ethics Ethical Dilemmas and Decision Making: Ethical dilemmas, challenges, and resolutions, Walton's Model of business conduct, Kohlberg's Model of Cognitive moral development, corporate values and ethical decision making, Role of ethics in workplace: personnel policies and procedures for hiring, promotions. Discipline & discharge of remuneration and performance related pay and perks.	**CLO 2**	**9**
UNIT III		
Corporate Social Responsibility Concepts: definition, principles, CSR Legislation in India and the world, CSR as a strategic business tool for sustainable development, Section 135 of Companies Act 2013,The Drivers of CSR in India, current trends and opportunities in CSR, Case Studies of Major CSR Initiatives.	**CLO3**	**9**
UNIT IV		
Introduction of Corporate Governance Corporate Governance: An overview; the theory and practice of corporate governance; Landmarks in the emergence of corporate governance. Agents and institutions in corporate governance: Rights and privileges of shareholders; Investor's problems and protection: Corporate governance and other stakeholders; Board of Directors A powerful instrument in Corporate governance; Role, duties and responsibilities of auditors, independent directors, Banks, Facilitators, Role players and Regulators. The role of media in ensuring corporate governance.	**CLO4**	**9**
UNIT V		
Global Perspectives on Corporate governance Corporate governance in developing and transition economies; corporate governance-The Indian scenario; The Corporation in a Global society, Case in business ethics and CSR from India and Globe like Satyam Debacle, Kingfisher Airlines, Lehman Brothers, Volkswagen scandals, Johnson & amp; Johnson lawsuits, Nike Sweatshop, etc .Committees on Corporate Governance in India: Kumar Mangalam Birla Committee 1999; Uday Kotak Committee, 2017 ; Global Committee - Sir Adrian Cadbury Committee (UK), 1992; OECD Principles of Corporate Governance, 1999; and Sarbanes- Oxley (SOX) Act, 2002 (USA).	**CLO5**	**9**
Total Hours		**45**

Learning resources

Textbooks:
1. Prof. K. ViyyannaRao, Dr. G. Nagaraju I.K.- Business Ethics and Corporate Governance, (2017)-International Publishing House Pvt. Ltd,
2. BholanathDutta and S.K. Podder-Corporate Governance,(2014), - Vision Book house,
3. R.V.Badi N.V. Badi -Business Ethics,(2005)2ND Edition-Vrinda Publication pvt Ltd
4. C.S.V. Murthy - Business Ethics and Corporate Governance, Reprint 2013,– Himalaya Publication
5. H.R. Machiraju -,Corporate Governance,(2004), -Himalaya Publication House
6. Robert A G Monks- Corporate Governance -Wiley India Pvt. Ltd
7. Daniel Alburquerque - Business Ethics: Principles and Practices,-Oxford Higher Education.
8. R.K. Sharma, Puneet Goel & Pooja Bhagwan.- Business Ethics and Corporate Governance –Kalyani Publishers.

Reference Books:
1. C.S.V. Murthy - Business Ethics -Text & Cases 2010,– Himalaya Publication
2. Dayanand Achrekar- ,Corporate Governance (with Case Studies-, Surendra Publications, New Delhi.
3. Dr. Muninarayanappa, Prof. Manjula, Prof. V. Tamil Selvan, Prof. Raghavendra K.S.-Business Ethics – Takur Publishers,2015, Bangalore

COURSE CURRICULUM

Name of the Program:	MBA Pharma				Semester : IV		Level: PG	
Course Name	Entrepreneurship Development				**Course Code/ Course Type**		PMP209/MAJM	
Course Pattern	2024				**Version**		1.0	
Teaching Scheme					**Assessment Scheme**			
Theory	**Practical**	**Tutorial**	**Total Credits**	**Hours**	**CIA (Continuous Internal Assessment)**	**ESA (End Semester Assessment)**	**Practical/Oral**	
3	-	-	3	3	40	60	-	

Pre-Requisite: Graduation Degree

Course Objectives (CO):	The objectives of the course are: 1. To recall the goals of this program are to motivate the students and to help them inculcate an entrepreneurial mind-set fulfilled through the program 2. To recognize what entrepreneurship is all about and how it has impacted the world and their country 3. Apply and assess their own strengths and identify gaps that need to be addressed to become a successful entrepreneur 4. Analyze the macro business environment and customize their business applications 5. Evaluate the business plans as developed by entrepreneurs with an ability to connect the dots
Course Learning Outcomes (CLO):	Students would be able to: 1. Identify successful entrepreneurs and develop self-awareness 2. Explain key skills such as design, personal selling, and communication in business 3. Apply learnings by understanding the DNA of an entrepreneur and assess their strengths and weaknesses from an entrepreneurial perspective 4. Analyze the macro environment needs and apply suitable strategies for their business 5. Evaluate the best ideas and turn thoughts to things through focused implementation

Course Contents/Syllabus:

Descriptors/Topics	CLO	Hrs
UNIT I		
Introduction to Entrepreneurship: Meaning and concept of entrepreneurship, the history of entrepreneurship development, role of entrepreneurship in economic development, Myths about entrepreneurs, agencies in entrepreneurship management and future of entrepreneurship types of entrepreneurs.	**CLO 1**	**9**
UNIT II		
The Entrepreneur: Why to become entrepreneur, the skills/ traits required to be an entrepreneur, Creative and Design Thinking, the entrepreneurial decision process, skill gap analysis, and role models, mentors and support system (institutional infrastructure), entrepreneurial success stories.	**CLO 2**	**9**
UNIT III		
E-Cell: Meaning and concept of E-cells, advantages to join E-cell, significance of E-cell, various activities conducted by E-cell	**CLO3**	**9**

UNIT IV		
Communication: Importance of communication, barriers and gateways to communication, listening to people, the power of talk, personal selling, risk taking & resilience, negotiation	**CLO4**	**9**
UNIT V		
Introduction to various form of business organization (sole proprietorship, partnership, corporations, Limited Liability company), emerging trends (technopreneurs, Pharma Entrepreneurship, Green Pharma Entrepreneurship, womenpreneurs, portfolio entrepreneurship, Digital Health Startups, and franchising), mission, vision and strategy formulation	**CLO5**	**9**
Total Hours		**45**

Learning resources

Textbooks:
1. Entrepreneurship Development, B. V. Srinivas Murthy, Dr. M. M. Munshi, Prakash Pinto, 1st edition, 2023
2. Introduction to Entrepreneurship Development, by Abhik Kumar Mukherjee, Shaunak Roy, Jan 2019 edition
3. Textbook of Entrepreneurship Development and Business Management (Hardcover, L. L. Somani), 2023 edition

Reference Books:
1. Entrepreneurship: Creating and Leading an Entrepreneurial Organization, Arya Kumar, Pearson, Jan 2012 edition
2. Women Entrepreneurs: Opportunities, Performance, Problems, SK Dhameja, Deep and Deep Publications, Jaipur, 2002 edition
3. Entrepreneurship: The Practice and Mindset, Heidi Neck, Nov 2019 edition

COURSE CURRICULUM

Name of the Program:	MBA Pharma				Semester : IV		Level: PG	
Course Name	International Business Management				**Course Code/ Course Type**		PMP210/MAJM	
Course Pattern	2024				**Version**		1.0	
Teaching Scheme					**Assessment Scheme**			
Theory	**Practical**	**Tutorial**	**Total Credits**	**Hours**	**CIA (Continuous Internal Assessment)**	**ESA (End Semester Assessment)**	**Practical/Oral**	
3	-	-	3	3	40	60	-	

Pre-Requisite: Graduation Degree

Course Objectives (CO):	The objectives of the course are: 1. To recall knowledge of marketing management in the international scenario 2. To recognize the nuances of international marketing environment 3. To apply marketing strategies for the dynamic international markets 4. To analyze global business environment to do international business 5. To evaluate ways to diversify business operations
Course Learning Outcomes (CLO):	Students would be able to: 1. Identify the key characteristics of important country markets in different regions of the world and learn how to develop marketing plans for these diverse country markets 2. Explain and gather, categorize, analyze, interpret, and evaluate relevant information about markets in different countries around the world 3. Apply to customers, competitors, and product markets in different countries and especially applying this analysis to developing international and global marketing strategies 4. Analyze product/service/branding policies, pricing practices, and distribution approaches globally 5. Evaluate marketing strategies for direct reach capitalizing on logistics issues

Course Contents/Syllabus:

Descriptors/Topics	CLO	Hrs
UNIT I		
The international marketing environment - Political and legal systems - Multilateral and Geographical Groupings, Culture and Business Customs, Economic and Financial dimensions	CLO 1	9
UNIT II		
Understanding the global consumer market - Scope and challenges of international marketing - Assessing international market opportunities - Marketing Research.	CLO 2	9
UNIT III		

International marketing management, Planning and organization, Market entry strategies - Export, joint ventures and direct investments	**CLO3**	**9**
UNIT IV		
Global product management - standardization vs. differentiation, Product planning and development, Marketing industrial products and services globally, Pricing for international markets	**CLO4**	**9**
UNIT V		
Global logistics management, International distribution systems, Global advertising and promotional strategies, Sales management, Developing marketing strategies and programs for international markets	**CLO5**	**9**
Total Hours		**45**

Learning resources

Textbooks:
1. Keiefer Lee & Steve Carter, Global Marketing Management, Oxford University, 2009 Edition
2. Micheal R.Czinkota And Iikka A. Ronkainen, Global Marketing, Cengage Learning, 2007 Edition
3. R. Srinivasan, International Marketing, Prentice-Hall India Pvt. Ltd, New Delhi, 2008 edition

Reference Books:
1. Daniels, Raderbaugh & Sulliva, Globalization And Business, Prentice-Hall India, Philip R.Cateora And John L. Graham , International Marketing, Irwin Mcgraw-Hill
2. Masaaki & Helsen, Global Marketing Management, John Willey & Sons Inc, 2004 Edition
3. Terpstra & Sarathy, International Marketing, Dec 2016 edition, Thomson.

COURSE CURRICULUM

Name of the Program:	MBA Pharma				Semester : IV		Level: PG	
Course Name	Retail Management				Course Code/ Course Type		PMP211A/Elective	
Course Pattern	2024				Version		1.0	
Teaching Scheme					**Assessment Scheme**			
Theory	Practical	Tutorial	Total Credits	Hours	CIA (Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/Oral	
3	-	-	3	3	40	60	-	

Pre-Requisite: Graduation Degree

Course Objectives (CO):	The objectives of the course are: 1. To recall retail strategy and the planning process 2. To recognize a standard merchandise process 3. To apply the concepts, process and management of successful retail businesses 4. To analyze the communication mix that brings in positive results 5. To evaluate the impact of globalization on retail business formats
Course Learning Outcomes (CLO):	Students would be able to: 1. Identify the concept of strategic planning within the retail management decision process 2. Explain the challenges faced by multichannel retailers and how retailers must adapt 3. Apply merchandise planning techniques 4. Analyze right mix of communication channels 5. Evaluate how retailers can attract the best employees

Course Contents/Syllabus:
(All the units carry equal weightage in Summative Assessment and equal engagement)

Descriptors/Topics	CLO	Hrs
UNIT I		
An overview of Retailing - Types of stores - Product Retailing vs. Service Retailing – Non- store Retailing - Retail strategy - Achieving competitive advantage and positioning Retailing Environment - Legal, Social, Economic, Technological, issues - Trends in the Indian Retailing Industry	CLO 1	9
UNIT II		
Retail store location and layout - Country/Region analysis - Trade area analysis – Site evaluation and selection - Store design and layout - Comprehensive store planning – Exterior design and layout - Interior store design and layout - Interior design elements.	CLO 2	9
UNIT III		
Planning merchandise needs and merchandise budgets - Methods for determining inventory evaluation - Assortment planning, buying and vendor relations -	CLO3	9

Merchandise pricing – Price strategies - Psychological pricing - Mark-up and markdown strategies.		
UNIT IV		
Communicating with the retail customer - Retail promotion mix-Advertising – Sales promotion - Publicity - Retail selling process - Retail database- In-store customer service	**CLO4**	**9**
UNIT V		
Globalization and changing retail formats – Online retailing - International Retailing – Opportunities and Challenges - Market entry formulas - New customized formats (Customized stores, portable stores, merchandise depots, retail theatre, service malls, customer-made stores, interactive kiosk 'shopping arcades')	**CLO5**	**9**
Total Hours		**45**

Learning resources

Textbooks:
1. Chetan Bajaj, Tuli & Srivastava, Retail Management, Oxford University Press, New Delhi.2010 Edition
2. Giridhar Joshi, Information Technology For Retail, Oxford University Press, New Delhi.2009 Edition

Reference Books:
1. Swapna Pradhan, Retail Management, Text & Cases, Tata Mcgraw-Hill Publishing Company, New Delhi, 2008 Edition
2. Ron Hasty And James Reardon, Retail Management. Mcgraw-Hill Publication, International Edition.
3. Fernie, Principles Of Retailing, Elsevier Publishing, 2010 Edition

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COURSE CURRICULUM

Name of the Program:	MBA Pharma				Semester : IV		Level: PG	
Course Name	Global Digital Marketing Trends and Strategy				Course Code/ Course Type		PMP211B/Elective	
Course Pattern	2024				Version		1.0	
Teaching Scheme					**Assessment Scheme**			
Theory	Practical	Tutorial	Total Credits	Hours	CIA (Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/Oral	
3	-	-	3	3	40	60	-	
Pre-Requisite: Graduation Degree								
Course Objectives (CO):	The objectives of the course are: 1. Understand the current global digital marketing landscape and its evolving trends. 2. Analyze global digital consumer behaviour and preferences. 3. Explore various global digital marketing strategies and their applications. 4. Develop skills in designing effective global digital marketing campaigns. 5. Evaluate the impact of cultural, economic, and technological factors on global digital marketing. 6. Apply strategic thinking to adapt digital marketing strategies for different global markets							
Course Learning Outcomes (CLO):	Students would be able to: 1. Students will recall key global digital marketing trends and strategies. 2. Students will demonstrate an understanding of the theories, models, and frameworks of global digital marketing. 3. Students will apply global digital marketing trends and strategies to analyze real-world scenarios and propose effective solutions. 4. Students will analyze case studies and examples of global digital marketing campaigns to evaluate their effectiveness. 5. Students will develop global digital marketing strategies to address specific business objectives.							

Course Contents/Syllabus:

Descriptors/Topics	CLO	Hrs
UNIT I		
Introduction to Global Digital Marketing Trends. Overview of Global Digital Marketing Landscape. Emerging Trends in Global Digital Marketing. Globalization of Digital Consumer Behavior. Cultural Considerations in Global Digital Marketing	CLO 1	5
UNIT II		
Global Digital Marketing Strategy Frameworks. SWOT Analysis for Global Markets Global Market Segmentation and Targeting. Positioning Strategies in Global Digital Marketing. Global Branding and Reputation Management	CLO 2	10

UNIT III		
Global Digital Marketing Channels. Global SEO and SEM Strategies. Social Media Marketing Across Cultures. Email Marketing in Global Context. Mobile Marketing Trends Worldwide.	**CLO3**	**8**
UNIT IV		
Global Content Marketing and Engagement. Multilingual Content Creation. Localization and Translation Strategies. Global Influencer Marketing. Cross-cultural Storytelling in Digital Marketing.	**CLO4**	**12**
UNIT V		
Case Studies and Applications. Successful Global Digital Marketing Campaigns. Globalization Challenges and Solutions. Ethical and Legal Considerations in Global Digital Marketing. Future Trends in Global Digital Marketing	**CLO5**	**10**
Total Hours		**45**

Learning resources

Text Reading:

1. Global Marketing and Advertising: Understanding Cultural Paradoxes 6th Edition, Kindle Edition by Marieke de Mooij (Author) Format: Kindle Editio, Publisher: SAGE Publications Ltd, Editions- 4th
2. International Marketing Hardcover – Import, 19 February 2019 by Philip R. Cateora (Author), John Graham (Author), Mary C. Gilly (Author), Publisher: McGraw-Hill College, Editions: 2nd

References:

1. Digital Marketing for Beginners : A Road Map to Successful Career in Digital Marketing Paperback – 28 April 2023, by V Venkata Krishna (Author), Publisher- Notion Press, Editions
2. Global Marketing: Contemporary Theory, Practice, and Cases Paperback – 30 November 2016 by Ilan Alon (Author), Eugene Jaffe (Author), Christiane Prange (Author), Donata Vianelli (Author), Publisher Routledge, Editions:2nd
3. Global Content Marketing: How to Create Great Content, Reach More Customers, and Build a Worldwide Marketing Strategy That Works (BUSINESS BOOKS) Paperback – Illustrated, 16 October 2014 by Pam Didner (Author), Publisher: McGraw-Hill Professional, Editions:1

Online Reference:

1. Digital Marketing Strategy, Simon Kingsnorth, Publishing: Kagan
2. http://elibrary.gci.edu.np/bitstream/123456789/3389/1/Bt.bm.522Digital%20Marketing%20Strategy%20An%20Integrated%20Approach%20to%20Online%20Marketing%20by%20Simon%20Kingsnorth.pdf

COURSE CURRICULUM

Name of the Program:	MBA Pharma				Semester : IV		Level: PG	
Course Name	Pharmaceutical Advertising & Services Management				Course Code/ Course Type		PMP212/MAJM	
Course Pattern	2024				Version		1.0	
Teaching Scheme					**Assessment Scheme**			
Theory	Practical	Tutorial	Total Credits	Hours	CIA (Continuous Internal Assessment)	ESA (End Semester Assessment)	Practical/Oral	
3	-	-	3	3	40	60	-	

Pre-Requisite: Pharma Graduation Degree

Course Objectives (CO):	The objectives of the course are: 1. Understand the basic concept of service marketing. 2. Learn marketing mix in pharma sector 3. To familiarize with the special characteristics of services relevant for marketing. 4. Develop skills for effective advertising design, public relations, and customer support in service industries. 5. Gain insights into marketing strategies for pharmaceutical, hospital and nonprofit services.
Course Learning Outcomes (CLO):	Students would be able to: 1. Define the fundamental concepts of service marketing and list its key characteristics. 2. Examine and discuss various strategies in the marketing mix. 3. Explore the process of advertising 4. Analyze, interpret and solve problems in service industries 5. Perform lifelong learning and professional development to enrich the services marketing strategies

Course Contents/Syllabus:

Descriptors/Topics	CLO	Hrs
UNIT I Services Marketing		
Meaning - nature of services - Types and importance - Relationship marketing, Mission, strategy, elements of service, service marketing plan & market segmentation.	CLO 1	9
UNIT 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	CLO 2	9
UNIT III		
Nature and scope of advertising, advertising methods, advantages and disadvantages of advertising, advertising design and development, Advertising control and Public Relationship	CLO3	9
UNIT IV Nature and Pharmaceutical Services		

Understanding the pharma services and clinics. Understanding after sales services for any medical and pharmaceutical instruments.	**CLO4**	**9**
UNIT V Hospital Services and Non -Profit Organization services		
Services provided in hospitals and offered by charities – Educational Services – Miscellaneous Services – Power and Telecommunication,etc.	**CLO5**	**9**
Total Hours		**45**

Learning resources

Text Reading:

1. Services Marketing: Valarie A. Zeithaml & Mary Jo Bitner, Integrating Customer Focus Across The Firm, Third Edition, 2004.
2. Services Marketing: Christopher H. Lovelock, Jochen Wirtz, Jayanta Chatterjee, People, Technology, Strategy (A South Asian Perspective) Fifth Edition 2017; Pearson Education
3. Services Marketing- love lock – Prentice Hall, 2021
4. Services Marketing- S.M. Jha, Himalaya Publishing Company, 1998, Mumbai
5. Services Marketing- Principles and Practice - palmer, Prentice Hall, 1995
6. Managing Indian Brands by Ramesh Kumar, 2003

COURSE CURRICULUM

Name of the Program:	MBA Pharma					Semester : IV		Level: PG	
Course Name	Machine Learning & Artificial Intelligence in Healthcare					Course Code/ Course Type		PMP213/MOOCs	
Course Pattern	2024				Version			1.0	
Teaching Scheme					Assessment Scheme				
Theory	Practical	Tutorial	Total Credits	Hours	CIA (Continuous Internal Assessment)		ESA (End Semester Assessment)	Practical/Oral	
4	-	-	4	4	40		60	0	

Pre-Requisite: Pharma Bachelor's Degree

Course Objectives (CO):	The objectives of the course are: 1. Recall and explain the basic principles and operations of Structured Query Language (SQL) for healthcare data analysis. 2. Use predictive modeling techniques to analyze healthcare data and predict future trends and outcomes. 3. Examine the integration of machine learning models into healthcare decision support systems. 4. Assess the quality and governance of healthcare data to ensure its reliability and accuracy. 5. Develop and deploy AI-based solutions to address ethical, regulatory, and clinical challenges in healthcare.
Course Learning Outcomes (CLO):	Students would be able to: 1. Identify key data types, standards, and challenges in healthcare data management. 2. Explain the use of predictive analytics in solving common healthcare problems. 3. Implement machine learning techniques to healthcare datasets for improved decision-making. 4. Evaluate the impact of AI models on healthcare outcomes, focusing on bias and fairness. 5. Design and deploy effective machine learning models to solve real-world healthcare challenges

Course Contents/Syllabus:

Descriptors/Topics	Weightage	Hrs
Introduction to Structured Query Language (SQL) **Offered by the University of Michigan on Coursera**	Level: Intermediate level	Duration

Module 1: Installing PHP and SQL
Installation steps including installing a text editor, installing MAMP or XAMPP (or equivalent), creating a MySQL Database.
    ● Installing MAMP on a Macintosh
    ● Installing MAMP on Windows 10
    ● Installing XAMPP on Windows 10
Module 2: Introduction to Structured Query Language (SQL)
    ● Overview of Databases
    ● Basic SQL Operations
    ● Data Types in SQL
    ● Database Keys and Indexes
    ● Standardizing SQL
	14%	15 Hrs

Module 3: Database Design - Relational Database Design - Normalization and Foreign Keys - Building a Physical Data Schema - Relational Database Design #4		
Module 4: Many-To-Many Model many-to-many relationships like those needed to represent users, roles, and courses.		
Syllabus for *Health Information Literacy for Data Analytics* Offered by the University of California, Davis on Coursera	**Level**: Intermediate level	Duration
Module 1: Healthcare Data Literacy - Role of data scientists in healthcare. - Overview of health management and medical care processes. - Exploring the Triple Aim and healthcare data drivers. - Importance of data analytics in improving outcomes. - Categories of data: clinical, claims, and patient generated. - Key standards: ICD-10, SNOMED, LOINC, and RxNorm. - Data Integration and Challenges - Applications and Future Trends **Module 2: Healthcare Data Models** - Data collection at the point of care. - Data preparation in warehouses for analysis. - Transforming data into actionable insights. - Common healthcare data models and their uses. - System integration for seamless data exchange. - Communication strategies for data clarity. - Methods for measuring and improving data quality. **Module 3: Healthcare Data Quality and Governance** - Importance of data quality and governance in healthcare. - Role of high-quality data in improving health outcomes. - Techniques to monitor, manage, and enhance data quality. - Interaction of human and computerized systems for sustaining data quality. - Understanding metadata and data provenance. - Validating and verifying healthcare data. - Frameworks used to sustain high data quality. - Strategies to improve communication in healthcare data systems. **Module 4: Analytical Solutions to Common Healthcare Problems** - Understanding common healthcare issues and their analytical solutions. - Building data structures to address medical challenges. - Grouping and categorizing medical codes for analysis. - Extracting, transforming, and loading (ETL) data into appropriate structures. - Techniques for integrating and harmonizing data from multiple sources. - Developing data dictionaries to document the source and value of data. - Building artifacts as key skills for healthcare data management.	42%	45 Hrs
	Level: Beginner	**Duration:**

Syllabus for *Fundamentals of Machine Learning for Healthcare* **Offered by the Stanford University on Coursera**		
Module 1: Why machine learning in healthcare? ● History of AI in Medicine ● Why Healthcare Needs Machine Learning ● Machine Learning in Biostatistics and Programming ● The Potential and Limitations of Machine Learning		
Module 2: Concepts and Principles of machine learning in healthcare part 1 ● Machine learning terminology, definitions, and learning processes. ● Supervised learning (regression, classification, SVM). ● Unsupervised learning methods.		
Module 3: Concepts and Principles of machine learning in healthcare part 2 ● Introduction to Deep Learning and Neural Networks ● Advanced architectures (CNNs, RNNs, transformers). ● Applications in image and text data processing.	13%	~14Hrs
Module 4: Evaluation and Metrics for machine learning in healthcare ● Model Performance Evaluation: Overfitting, Underfitting, and Regularization ● Statistical Model Evaluation Techniques ● Receiver Operator and Precision-Recall Curves		
Module 5: Strategies and Challenges in Machine Learning in Healthcare ● Challenges in clinical machine learning: interpretability, data quality, and quantity. ● Retrospective data, causative predictions, and the "shelf life" of data.		
Module 6: Best practices, teams, and launching your machine learning journey ● Clinical utility and action frameworks (OAP). ● Governance, ethics, and automation bias in AI. ● Multidisciplinary team collaboration.		
Module 6: Foundation models ● Overview of foundation models and general AI. ● Use cases in structured and unstructured healthcare data. ● Challenges, pitfalls, and adapting to technology trends.		
Syllabus for *Evaluations of AI Applications in Healthcare* **Offered by the Stanford University on Coursera**	**Level:** Beginner	**Duration:**
Module 1: AI in Healthcare ● Need for AI in healthcare ● Examples and growth of AI in healthcare ● Questions AI can answer and its output ● Thinking beyond traditional metrics (e.g., area under the curve)		
Module 2: Evaluations of AI in Healthcare ● Stakeholder involvement ● Clinical utility and outcome-action pairing (OAP) ● Lead time, type of action, and OAP examples ● Number needed to treat, net benefits, and decision curves ● Feasibility and implementation costs ● Clinical evaluation and uptake	10%	~11 hrs

Module 3: AI Deployment
- Pre-deployment practical questions
- Design, development, and stakeholder involvement
- Data types, sources, and settings
- In silico evaluation, net utility, and work capacity
- Statistical validity and care integration
- Clinical and technical integration
- Deployment modalities, continuous monitoring, and maintenance
- Challenges with deployment (e.g., Sepsis example)

Module 4: Downstream Evaluations of AI in Healthcare: Bias and Fairness
- Real-world examples of AI bias
- Types of bias: historical, representation, measurement, aggregation, evaluation, deployment
- Algorithmic fairness: anti-classification, parity classification, and calibration
- Transparency, reporting standards, opportunities, and challenges

Module 5: The Regulatory Environment for AI in Healthcare
- International definitions and risk framework for AI regulation
- Valid clinical association and evaluation processes
- General control, de novo notifications, software modification
- TPLC, locked vs. adapted AI solutions
- Non-regulated products, EU regulations, Chinese guidelines, OMB guidelines

Module 6: Best Ethical Practices for AI in Health Care
- Problem Formulation
- Identifying Conflicts of Interest
- Mitigating Conflicts of Interest

Module 7: AI and Medicine
- Life cycle of AI in healthcare
- Historical and societal dimensions, race-based medicine, and race-aware approach
- Bias mitigation strategies and ethical quandaries
- Deploying AI in healthcare settings

Syllabus for _AI in Healthcare Capstone(Project Oriented)_ **Offered by the Stanford University on Coursera**	**Level:** Beginner	**Duration:**
• Phase 1: Data Collection • Phase 2: Model Training Part 1 • Phase 3: Model Training Part 2 • Phase 4: Model Evaluation • Phase 5: Model Deployment and Regulation	9%	~10 hrs
Syllabus for _Business Application of Machine Learning and Artificial Intelligence in Healthcare_ **Offered by Northeastern University on Coursera**	**Level:** Intermediate level	**Duration:**
Module 1: Decision Support and Use Cases • Introduction to decision support and its role in healthcare. • Consumerism, supply chain, and social determinants in healthcare. • Operationalizing consumerism using machine learning (ML) and artificial intelligence (AI). • Case studies: Interviews with Caitlyn and Peter Dunphy. • Patient monitoring and journey mapping: Identifying pain points. • Differential diagnosis, care management, preventive screening, and avoidable readmissions.	11%	~12 hrs

Module 2: Predictive Modeling Basics		
• Introduction to predictive modeling in healthcare. • Linear regression and its applications in healthcare. • Disease burden as a cost predictor. • Understanding machine learning in predictive modeling. • Data sourcing, enrichment, and provider taxonomies. • Overview of the predictive modeling process.		
Module 3: Consumerism and Operationalization • Analytic maturity model for operationalizing consumerism. • Identifying and predicting addressable opportunities. • Measuring predictive accuracy and making recommendations. • Industry insights from George "Russ" Moran. • Integration, orchestration, and operational engagement framework.		
Module 4: Advanced Topics in Operationalization • Operational entity relationship model. • Using administrative data to target avoidable utilization. • Targeting high-value members using consumer data. • Recommendations for care management programs and member engagement channels. • Interviews with Peter Dunphy on embedding decision support. • Deploying decision support beyond the enterprise to consumers		

Learning resources

Online Resources/E-Learning Resources:

1. Introduction to Structured Query Language (SQL) Offered by the University of Michigan on Coursera
   https://www.coursera.org/learn/intro-sql
2. Fundamentals of Machine Learning for Healthcare Offered by the Stanford University on Coursera
   https://www.coursera.org/learn/fundamental-machine-learning-healthcare
3. Evaluations of AI Applications in Healthcare by Stanford University on Coursera
   https://www.coursera.org/learn/evaluations-ai-applications-healthcare
4. AI in Healthcare Capstone Offered by the Stanford University
   https://www.coursera.org/learn/ai-in-healthcare-capstone
5. Business Application of Machine Learning and Artificial Intelligence in Healthcare Offered by Northeastern University on Coursera https://www.coursera.org/learn/artificialintelligence-in-healthcare?