COURSE BOOK

2025-26

Centurion UNIVERSITY

Shaping Lives...
Empowering Communities...

Master of Business Administration

(MBA)

School of Management

Centurion University of Technology & Management

Odisha, India

http://www.cutm.ac.in

Preface

School of Management (SoM) focuses on experiential, applied and action learning through projects, practice and production to foster a thriving start-up culture. It has been consistently reinventing management education with the objective of creating management leaders who can navigate the ever-changing business landscape. The curriculum is constantly updated to meet the dynamic needs of industry, academia and entrepreneurship. A student-centric pedagogy, project-based approach and design-driven curriculum provide students with required skills to succeed in this new environment where initiative, innovation, and risk taking are valued. Students are assigned to different in-house production units like Centurion Coffee Connect, Apparel Manufacturing Center of Excellence, Precision Machining Center, Transformer Unit, Sky Rider Electric Vehicle Unit, Advanced Wood Engineering Lab, Concrete Pavers Unit, Urban Micro Business Center, Vermicomposting Unit, Diary Processing Unit, Mushroom Cultivation Unit, Bakery and Gram Tarang Foods, to hone their managerial as well as entrepreneurial skills in the real time business environment. Both faculty and student are also encouraged to ideate, innovate and establish their own enterprises. At the same time, through different extracurricular activities, human-centric skills, cooperation, empathy, social awareness, and global citizenship are fostered. The key strength of the school is its experienced and enthusiastic faculty, committed top management, flexible curriculum, digital course content, skill integrated programs, and strong linkage with industry, academia, civil society and government. Gram Tarang Inclusive Development Services to hone their managerial as well as entrepreneurial skills in the real time business environment. Both faculty and student are also encouraged to ideate, innovate and establish their own enterprises. At the same time, through different extracurricular activities, human-centric skills, cooperation, empathy, social awareness, and global citizenship are fostered. The key strength of the school is its experienced and enthusiastic faculty, committed top management, flexible curriculum, digital course content, skill integrated programs, and strong linkage with industry, academia, civil society and government.

The University can offer the following MBA programs namely: Regular,
Part time (executive MBA) modes.
Functional as well as application oriented (domain) MBA.
MBA courses in collaboration with foreign Universities.
The University can frame rules for these programs from time to time following due procedure. To start with, the MBA (Regular) program is offered.
Duration of Curriculum and Calendar of MBA (Regular)
The MBA (Regular) is a two-year programme consisting of four semesters and summer internship of two months duration.

Each year shall be divided into two Semesters – Autumn Semester (July to December) and Spring Semester (January to June). The autumn semester shall ordinarily begin in July for students already on rolls and the spring semester shall ordinarily begin in January. However, the first semester (autumn, for newly admitted students) may begin a little later

depending on completion of admission process and formalities. The number of teaching weeks in each semester shall be 15 to 18 with a minimum of 90 teaching days excluding the period of examination.

Each year the University shall draw out a calendar of academic and associated activities which shall be adhered to. Details of curricula and syllabi shall be as decided by the Academic Council with provision for modification from time to time as per the need of the specialization concerned.

MBA Programme

The MBA Programme is designed to provide students with a strong foundation in management principles, specialized knowledge in chosen domains, and practical skills required for leadership in a dynamic business environment. The curriculum is spread across two years (four semesters) with a balanced mix of core courses, electives, domain specializations, skill-based learning, internships, and a dissertation.

In the first year, students undertake compulsory core courses covering the foundations of management, economics, organizational behaviour, marketing, finance, operations, sustainability, and digital technologies. This ensures that every student acquires a broad-based understanding of management functions before moving to advanced topics.

In the second year, students explore specialization tracks through domain electives in areas such as Finance, Marketing, Human Resource Management, Digital Technologies, Pharmaceutical Management, Healthcare Management, and University-wide domains. Students can opt for a domain of interest and must earn a minimum of 16 credits to qualify for specialization.

In addition, Value Added Courses such as Job Readiness (I, II, III), Design Thinking, and Skill-based workshops prepare students for industry readiness and professional growth. Summer Internships and a Dissertation/Capstone Project connect classroom learning with real-world business applications.

Domain Areas

Digital Marketing

The Digital Marketing domain equips students with the knowledge and tools to thrive in a digital-first economy. With the rise of e-commerce, social media, and data-driven marketing strategies, organizations need managers who can design, implement, and analyze impactful digital campaigns. The curriculum emphasizes content marketing, social media engagement, digital marketing analytics, e-commerce strategies, and marketing communications. Students also gain practical exposure to customer engagement platforms, SEO/SEM, and emerging trends such as influencer marketing and omnichannel retail. The Digital Marketing Internship and hands-on analytics modules ensure that graduates are ready to drive business growth through innovative digital solutions.

Key Skills to be Gained:

- Social Media & Content Marketing Strategy
- Data-driven Marketing Analytics
- Digital Advertising & E-Commerce Management
- Customer Experience and Engagement Models

HR Analytics

The HR Analytics domain bridges people management with data science to strengthen organizational decision-making. By combining concepts of talent acquisition, workforce planning, engagement, and retention with analytical tools such as Power BI, students learn how to translate HR data into actionable insights. The focus is on developing evidence-based HR strategies to improve recruitment, enhance performance management, reduce attrition, and align human capital with organizational goals. The Capstone HR Analytics Project provides practical experience in solving real-world HR challenges through data.

Key Skills to be Gained:

- Workforce Planning & Predictive Analytics
- Talent Engagement & Retention Models
- Dashboard Creation with Power BI
- Evidence-based HR Decision-Making

Financial Analytics

The Financial Analytics domain integrates finance with advanced analytics and visualization tools, enabling students to make informed financial decisions. It covers areas such as financial valuation, banking intelligence, credit analysis, and financial data visualization. Using Power BI and statistical models, students learn to evaluate investment decisions, assess financial risk, and analyze capital structures. The curriculum ensures that graduates can support strategic decision-making by providing financial insights grounded in data. The Financial Analytics Capstone Project strengthens applied learning by tackling complex business cases.

Key Skills to be Gained:

- Financial Modelling & Valuation Techniques
- Credit Risk Analysis & Banking Intelligence
- Data Visualization for Financial Insights
- Strategic Financial Decision-Making

Duration:

The duration of the programmes shall be governed by the regulations of UGC (Approved by the Academic Council) that may change from time to time. As per the prevailing regulations, the duration of the M.B.A programmes is two years (4 semesters). A weaker student may complete the two-year M.B.A program in not more than four (4) years.

A student can take a break from the course for only one academic year. This is possible only if the concerned student has completed all requirements for first year including the summer project and secured a passing grade in all the courses prescribed for the 1st year. On return the student will however be required to pay the fee as per the fee structure prevailing at the time of rejoining the Programme. All students desiring to take such leave of absence have to formally apply to the appropriate authority. The University reserves the right to decline such requests and its decision will be treated as final and binding

Eligibility for Admission:

Admissions to MBA courses of the University shall be based on criteria decided by the Academic Council of the University in accordance with the stipulations of UGC, modified as necessary. There shall be provision for direct admission for a limited number of NRI / FN students. Details of criteria for admission shall be as per provisions of the rules formulated for the purpose. Physically handicapped Candidates shall be required to satisfy the prescribed medical fitness norms.
Reservation of seats for SC & ST categories of students shall be as per the prescribed norms of the Government. Admissions shall ordinarily close on a specified date before commencement of the first semester classes, through a notification/ academic calendar. Inter college Transfer: The University provides the option of transfer of students within the university colleges. Every year such requests will be processed before the start of the odd semester by a committee appointed by the Vice Chancellor.

Programme Structure:
The two-year degree course of MBA will consist of four semesters. One academic session of one year will be devoted to two semesters. Candidates shall be admitted to MBA 1st Semester only and thereafter required to qualify all Four Semesters consequently to earn the degree.

Minimum credit: 111

Programme Objective

The programme objective is to create management leaders who can navigate the ever-changing business landscape. The curriculum is continuously updated to bring in existing and emerging challenges and opportunities in the business environment, both nationally and internationally. The teaching methods are geared towards experiential learning. It is accomplished through interactive class room teaching: case study analysis, workshops, student projects, live industry interactions and more.

MBA program also helps in honing the business acumen of the participants by providing a live laboratory of human endeavor in the field of management. The program is delivered with the avowed objective of closely acquainting the students with prevailing corporate

ethos in the state of Odisha and in India in general. It also provides a clear corporate roadmap for creating a career trajectory among the students. It gives timely inputs to students who are interested in research related activities and who show an inclination to contribute to society by becoming a cog in the wheels of institutions in the academic space. Budding entrepreneurs of various hues are invited to rub shoulders with the students to inculcate the ethos of independent and creative thinking.

School of Management, CUTM has been consistently reinventing management education with the objective of creating management leaders who can navigate the ever-changing business landscape. The curriculum is constantly updated to meet the dynamic needs of industry and academia.

This provides an opportunity to continuously engage in innovating curricula by envisaging current and emerging challenges and opportunities in the business environment. To incorporate the contemporary academic and practice concepts, the curriculum design and delivery process is dynamic in nature. The Curriculum has been suitably designed to give ample opportunity for experiential learning through domain based curriculum comprising of class room input, theme-based workshop, project based learning, case-based teaching and exposure through live projects, industry interaction etc.

Relevant topics comprise legal aspects of marketing, ethical, social and environmental concerns in product, pricing, distribution and promotion decisions, socially responsible marketing; green marketing, cause relating marketing; social marketing, corporate governance and social responsibility of business, legal framework of business, e-business and cyber laws, labor and social security laws, ethical and legal issues in performance management, workforce diversity, role of ethics in organizational behavior, negotiation, international business; ethical and social considerations in strategic management and cross border ethics management. Provide students with the opportunity to develop and broaden their management and leadership skills. Develop managerial knowledge and strategic agility, providing students with a broader skill set and a fresh perspective and encouraging them to seek out bold, innovative solutions for today's business and societal challenges.

Program Outcome (PO):

PO1: Disciplinary Knowledge: Capable of demonstrating comprehensive knowledge and understanding of core and disciplines that form a part of management study.
PO2: Critical Thinking and Analytical skill: Capability to apply analytic thought to a body of knowledge; analyse and evaluate evidence, arguments, claims, beliefs on the basis of empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; analyse and synthesise data from a variety of sources; draw valid conclusions and support them with evidence and examples, and addressing opposing viewpoints; critically evaluate practices, policies and theories by following scientific approach to knowledge development

PO3: Problem Solving and Innovation: Capacity to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems and apply one's learning and innovation to real life situations

PO4: Communication: Ability to express thoughts and ideas effectively in writing and orally; Communicate with others using appropriate media; confidently share one's views and express herself/himself; demonstrate the ability to listen carefully, read and write analytically, and present complex information in a clear and concise manner to different groups.

PO5: Leadership & Team Work: Ability to work as an individual, as a member or leader effectively and respectfully with diverse teams; facilitate cooperative or coordinated effort on the part of a group, and act together as a group or a team in the interests of a common cause and work efficiently as a member of a team.

PO6: Research-related skills: A sense of inquiry and capability for asking relevant/ appropriate questions, problematising, synthesising and articulating; Ability to recognise cause-and-effect relationships, define problems, formulate hypotheses, test hypotheses, analyse, interpret and draw conclusions from data, establish hypotheses, predict cause-and-effect relationships; ability to plan, execute and report the results of an experiment or investigation.

PO7: Moral and ethical awareness/reasoning: Ability to embrace moral/ethical values in conducting one's life, formulate a position/argument about an ethical issue from multiple perspectives, and use ethical practices in all work. Capable of demonstrating the ability to identify ethical issues related to one's work, avoid unethical behaviour such as fabrication, falsification or misrepresentation of data or committing plagiarism, not adhering to intellectual property rights; appreciating environmental and sustainability issues; and adopting objective, unbiased and truthful actions in all aspects of work.

PO8: Environment and Sustainability: Ability to understand the impact of Managerial solutions in a global, economic, environmental, and societal context

Understand the impact of modernisation and technology solution in societal and environmental contexts, and demonstrate the knowledge and need for sustainable development

PO9: Information/digital literacy: Capability to use ICT in a variety of learning situations, demonstrate ability to access, evaluate, and use a variety of relevant information sources; and use appropriate software for analysis of data

PO10: Lifelong learning: Ability to acquire knowledge and skills, including 'learning how to learn', that are necessary for participating in learning activities throughout life, through self-paced and self-directed learning aimed at personal development, meeting economic, social and cultural objectives, and adapting to changing trades and demands of work place through knowledge/skill development/reskilling.

PO11: Entrepreneurship: Graduates will exhibit entrepreneurship skills, enabling them to identify opportunities and drive positive change in their respective fields.

PO12: Cultural Competence and Global Perspective: Graduates will demonstrate cultural competence, respecting and valuing diverse perspectives and working effectively in

multicultural settings to address global challenges through local actions.

The Master of Business Administration program helps in Building the confidence of the students by emphasizing on domain knowledge so that they can contribute responsibly in the corporate sector. Creating an option of working in Business Enterprises including manufacturing and services-oriented enterprises (FMCG, FMCD, telecom, retail, infrastructure, financial services, etc.). Pursuing higher education for a career in teaching and research Starting one's own business as an entrepreneur.

Program Specific Outcomes (PSO):

PSO1: Employability: Develop knowledge and skills relevant in the modern organizational context for gainfully engaged in organizations

PSO2: Entrepreneurship: Effectively analyse the business environment to become an entrepreneur

PSO3: Higher Education: Ability to pursue higher education and carry out research independently

The first year commences in July every year continuing to April in the following year. In second week of April. The courses offered in the first year, divided into two semesters, are compulsory for all the students. In the second year, divided into two semesters, all students undertake compulsory core courses and opt for specialization courses according to different areas of specialization. In addition to these, students are required to register for value added courses offered during different semesters. Value added courses are considered as sessional papers.

MBA Course Structure

MBA Programme			
Basket	**Basket Category**	**Minimum Credits to be acquired**	**Scope**
I	Foundation	29	Core
II	Digital Technologies	10	Choice
III	Management Potential Development	34	Core
IV	Sustainability	06	Core
V	Domain	24	Choice
VI	Summer Internship	04	Choice
VII	Skill	04	Choice
	Total Credits	**111**	Choice

FOUNDATION

Sl. No	Code	Course	Credit	Type T+P+P*
1	CUTM4260	Principles and Practices of Management	3	2+0+1
2	CUTM0001	Job Readiness – I	2	0+2+0
3	CUTM0002	Job Readiness – II	2	0+2+0
4	CUTM0003	Job Readiness – III	2	0+2+0
5	CUTM1183	Quantitative Techniques	4	3+0+1
6	CUTM1184	Micro Economics	4	3+0+1
7	CUTM1185	Data analysis through Microsoft Excel	2	0+0+2
8	CUTM1186	Economic Environment of Business	4	3+0+1
9	CUTM1187	Indian Society and Culture	2	1+0+1
10	CUTM4368	Operation Research	2	0+2+0
11	CUTM1190	Basics of Design Thinking	2	0+1+1

*** T+P+P= Theory+Practice+Project**

DIGITAL TECHNOLOGIES

Sl No	Code	Course	Credit	Type T+P+P
1	CUTM4486	Introduction to AI/ML	1	0+0+1
2	CUTM4487	Introduction Data Analytics	1	0+0+1
3	CUTM4488	Introduction Additive Manufacturing/3D Printing	1	0+0+1
4	CUTM4489	Introduction to AR/VR	1	0+0+1
5	CUTM4490	Introduction to Emerging Mobility Solutions	1	0+0+1
6	CUTM4491	Introduction to Blockchain	1	0+0+1
7	CUTM4492	Introduction to Robotics	1	0+0+1
8	CUTM4493	Generative AI and its Application	1	0+0+1
9	CUTM4494	Data Analysis and Visualization Using Python	2	0+0+2

MANAGEMENT POTENTIAL DEVELOPMENT

Sl No	Code	Course	Credit	Type (T+P+P)
1	CUTM1199	Accounting for Managers	4	3+0+1

2	CUTM1200	Marketing Management	4	3+0+1
3	CUTM1201	Organizational Behaviour and Structure	4	3+0+1
4	CUTM1202	Talent Acquisition and Development	4	2+0+2
5	CUTM1203	Marketing Research	4	2+0+2
6	CUTM1204	Corporate Finance	4	3+0+1
7	CUTM1205	Production & Operations Management	3	2+1+0
8	CUTM1013	Project Management	3	2+0+1
9	CUTM1206	Introduction to PLM (Platforms such as 3DS)[5]	2	1+1+0
10	CUTM1208	Supply Chain Management	2	1+0+1

SUSTAINABILITY

Sl No	Code	Course	Credit	Type (T+P+P)
1	CUVA4060	Gender, Human Rights and Ethics	3	3+0+0
2	CUTM1015	Climate Change, Sustainability and Organisation	3	1.5+0+1.5

DOMAIN COURSES

Finance Domain				
Sl No	**Code**	**Course**	**Credit**	**Type (T+P+P)**
Financial Management Domain				
1	CUFM2350	Advanced Managerial Accounting	4	3+0+1
2	CUFM2351	Financial Institutions, Markets & Services	4	3+0+1
3	CUFM2352	Commercial Banking and ALM	4	3+0+1
4	CUFM2353	Security Analysis and Portfolio Management	4	1+0+3
5	CUFM0001	Project Appraisal & Financing	4	1+0+3
6	CUFM2355	Current Asset Management	4	2+1+1
7	CUFM2356	Financial Analysis and Visualization	4	3+0+1
8	CUBB3006	Digital Finance	4	3+0+1
Marketing Management Domain				
1	CUMM2360	Rural Marketing	4	2+1+1
2	CUMM2361	Sales and Distribution Management	6	2+2+2
3	CUMM2362	Services & Financial Services Marketing	4	2+1+1
4	CUMM2363	Brand Management & Consumer Behaviour	4	2+2+0
5	CUMM2364	Digital Marketing & Marketing Communications	4	2+0+2
6	CUMM2365	Retail & Etail Management	4	2+0+2
7	CUMM2366	B2B Marketing	4	2+2+0

8	CUTM1207	Designing User/Customer Experience (UX/CX)	2	1+0+1
Human Resource Management Domain				
1	MGHR2317	Performance Management	4	2+0+2
2	MGHR2318	Organization Change and Development	4	2+0+2
3	MGHR2319	Human Resource Planning and Sourcing	4	2+0+2
4	MGHR2320	Training and Development	4	2+0+2
Pharmaceutical Management Domain				
1	CUTM1607	Anatomy Physiology & Health Education (APHE)	4	4+0+0
2	CUTM1608	Pharmacology	4	4+0+0
3	CUTM1609	Basic Epidemiology	2	2+0+0
4	CUTM1610	Selling and Reporting Skills of Pharmaceutical Product	4	4+0+0
5	CUTM1611	Pharmaceutical Brand Management	4	4+0+0
6	CUTM1612	Pharmaceutical Sales and Distribution Management	4	4+0+0
7	CUTM1613	Business Analytics	4	4+0+0
8	CUTM1614	Drug Regulatory Affairs & Intellectual Property Rights	4	4+0+0
9	CUTM1615	Manufacturing Management	2	2+0+0
10	CUTM1616	Financial Reporting & Analysis	2	2+0+0
11	CUTM1617	Pharmaceutical Advertising & Services Management	2	2+0+0
12	CUTM1941	Project	20	0+0+20
Healthcare Management Elective				
1	CUTM2629	Hospital Administration	4	3+0+1
2	CUTM4103	Digital Healthcare	5	3+0+2
3	CUTM4104	Management of Quality	2	1+0+1
4	CUTM4105	Legal and Ethical Issues for Hospitals	4	3+0+1
5	CUTM4106	Marketing of Hospital Services	4	2+0+2
6	CUTM4107	Clinical, Diagnostic & Therapeutic Services	4	2+0+2
7	CUTM4108	Health Policy and Health Care Management	4	2+0+2
8	CUTM4109	Planning of Hospital and Core Services	4	2+0+2
9	CUTM4110	Hospital Architecture, Planning and Maintenance	4	2+1+1
10	CUTM4111	Purchase Management & Hospital Record keeping	4	2+1+1
11	CUTM4112	Hospital Support System	4	2+1+1

12	CUTM4113	Introduction to Quality and Patient Safety	5	3+0+2
University-wide Domains				
1	DACU2200	Data Analytics- Visualisation	20	0+14+6
2	BACU2210	Business Analytics	18	0+12+6
3	MLCU2000	Data Science and Machine Learning	26	2+9+15
4	ARCU2060	Gaming and Immersive Learning (AR & VR)	20	5+5+10
5	GMCU2140	GO-TO-MARKET (3D Experience)	22	4+10+8
6	FPCU2310	Food Processing	29	3+15+11
7	ABCU2320	Agri Business Management	23	2+0+21
8	FSCU2330	Commodity and Food Storage	29	3+15+11

DOMAIN

	Financial Analytics		
CUFA0001	Introduction to Business Analytics with Power BI	4	0+2+2
CUFA0002	Advanced Data Analytics with Power BI	4	0+2+2
CUFA0003	Financial and Statistical Analytics for Decision Making	3	2+1+0
CUFA0004	Financial Valuation Modelling and Analytics	3	2+1+0
CUFA0005	Financial Data Analytics and Visualization	3	2+1+0
CUFA0006	Banking Intelligence, Credit Analysis, and Financial Services Analytics	3	2+1+0
CUFA0007	Financial Analyst Capstone Project	4	0+0+4
	Total	24	8+8+8
	Digital Marketing		
CUFA0001	Introduction to Business Analytics with Power BI	4	0+2+2
CUFA0002	Advanced Data Analytics with Power BI	4	0+2+2
CUDM0001	Foundations of Digital Marketing & E-Commerce	2	1 +1+0
CUDM0002	Content Marketing & Customer Engagement	4	2 +0+2
CUDM0003	Digital Marketing Analytics	2	1 +1+0
CUDM0004	Social media & E-Mail Marketing	4	2 +0+2
CUDM0005	Digital Marketing Internship	4	0+0+4
	Total	24	6+6+12
	HR Analytics		
CUFA0001	Introduction to Business Analytics with Power BI	4	0+2+2
CUFA0002	Advanced Data Analytics with Power BI	4	0+2+2
CUHR0001	Talent Acquisition and Development Analytics	3	1+2+0
CUHR0002	Workforce Planning and Talent Sourcing Analytics	3	1+2+0
CUHR0003	Talent Engagement Analytics	3	1+2+0
CUHR0004	Talent Retention Analytics	3	1+2+0
CUHR0005	HR Analyst Capstone Project	4	0+0+4
	Total	24	4+12+8

COURSE CONTENTS

FOUNDATION COURSES

Principle and Practice of Management (56 hours)

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM4260	**Principle and Practice of Management**	**3**	**2+0+1**

Course Objective:
This course is designed

- To provide students with a thorough understanding of the origins and evolution of management theories from ancient and medieval times to the early 20th century.
- To examine key management theories and principles developed by pioneering thinkers such as Taylor, Fayol, and Weber.
- To study the development and impact of organizational theories.
- To explore the contributions of the Human Relations School and Behavioural School, focusing on the work of Mayo, Follett, McGregor, and others.
- To analyse the relevance of traditional and modern organizational structures and management paradigms in today's business environment.

Course Outcomes:
After completion of the course students will be able:

- CO1: To articulate the contributions of ancient and medieval management thinkers such as Sun Tzu, Kautilya, and Machiavelli, and connect their ideas to modern management practices.
- CO2: Apply and explain the core principles of Scientific Management, Administrative Management, and Bureaucratic Theory, and apply these principles to solve organizational problems.
- CO3: Demonstrate an understanding of the organizational structures and management strategies, appreciating the complexity and dynamics of large organizations.
- CO4: Assess the impact of the Human Relations and Behavioral Schools on modern management practices, incorporating insights from Mayo, Follett, McGregor, and others into management strategies.
- CO5: Recognize and adapt to the new paradigms in management, considering the social impacts and technological advancements that influence the role of managers in contemporary organizations.

Mapping of Course Outcomes (CO) to Program Outcomes (PO)

Course Outcomes (CO)	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	1	2	1	2	2	1	1	2	1	3
CO2	3	3	2	2	1	2	2	2	2	2	2	2
CO3	3	2	3	2	2	2	2	2	2	2	2	3
CO4	3	3	2	2	2	2	3	2	2	2	2	2
CO5	2	3	3	2	3	2	3	3	2	3	3	2

Course Contents

Module-I

Pre-scientific Management Era: management in ancient and medieval period (Work of Sun Tzu, Kautilya, learnings from Shrimad Bhagabat Gita, Machiavelli) Scientific Management School: Scientific management (Works of Taylor), Administrative management (Fayol), Bureaucratic theory (Max Weber)

Module II

The study and concept of the Organization. The nature of Management (Management as a social function and liberal art) Dimensions of Management, The Purpose and Objective of a business, Role of a Manager

Module-III

Human Relation School: Hawthorne experiments of E. Mayo, major contributions of M. P. Follett, Behavioural School: Douglas M. McGregor, Chester I. Bernard, Chris Argyris, Herbert Simon, M.K. Gandhi Introduction to Organization Structures: Traditional and modern organizational structures. The structure of Management, Management of Work and the Worker, Management's New paradigm social Impacts, technology and managers of tomorrow.

Text Book:

- Peter Drucker (2016) "The Practices of Management" revised edition, Routledge
- Claude S. George, Jr. *The History of Management Thought*, PHI, N.J., 1972.

Reference Books:

- Peter Drucker (2001). The Essential Drucker. HarperCollins
- The Peter F. Drucker Reader: Selected Articles from the Father of Modern Management Thinking by Peter F. Drucker, Harvard Business Review
- Prasad and Prasad, Administrative Thinkers, Sterling Publishers Pvt. Ltd., 2015.
- HBR: 75 years of management ideas and practices 1922-1997.

Job Readiness-01

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM0001	**Job Readiness-01**	**2**	0+2+0

Job Readiness-I, i.e., Centurion English Language Testing System (CELTS) aims to advance English language proficiency and communication skills among learners. Guided by the vision of building linguistic confidence and competence, CELTS offers outcome-based modules tailored to the needs of higher education learners. The course equips learners to excel in academic, professional and social communication by combining innovative pedagogy, digital tools and context-specific content. As part of the program outcomes, each student is expected to reach High B1 (80–100) by the end of 1st Semester in Duolingo, and achieve a minimum band score of 7 in CELTS by the end of the third/ fourth semester ensuring they are job ready.

Course Objectives

The objectives of the course are

- Develop proficiency in listening and speaking skills to communicate clearly and effectively in formal and informal contexts.
- Enhance reading and writing abilities to produce well-structured, coherent and purposeful texts for diverse situations.
- Build confidence and competence to perform successfully in diverse professional communication situations.

Course Outcomes:

After completion of the course students will be able to:

- CO1: Identify and understand key elements of listening and speaking in order to communicate clearly in formal and informal settings.
- CO2: Apply reading and writing strategies to produce coherent, well-structured, and context-appropriate texts.
- CO3: Analyze language use across various situations to select appropriate linguistic structures and vocabulary for effective communication.
- CO4: Evaluate communication needs in professional contexts and adapt language accordingly to enhance clarity and impact.
- CO5: Produce clear, accurate and purposeful spoken and written communication by integrating appropriate vocabulary, grammar and style suitable for diverse contexts.

CO, PO Mapping Matrix												
CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1			3								
CO2				3	3							
CO3			2	3								
CO4			1	2	3							
CO5			2		3							

Course Contents

Module 1: Speaking Skills

Self-introduction (formal/informal), telephone and online contexts and introducing others, Describing people, objects, and places, Talking about future plans and daily routines, Product introduction and explanation, JAM (Just A Minute), Storytelling and narration, Topic discussion and expressing opinions, Oral presentation skills, Pronunciation, stress, rhythm
Practice Activities: Role plays, cue card topics, presentations, group conversations, mock IELTS listening tasks

Module 2: Listening Skills

Introduction to listening skills, types, barriers, Listening to comprehend, Listening for specific information and general understanding, Form/Table/Note completion, Labeling diagrams/maps, Sentence and summary completion, Multiple choice listening tasks, Listening in workplace contexts (meetings, calls)
Practice Activities: Audio clips, task-based listening and mock IELTS listening tasks

Module 3: Reading Skills

Reading strategies: skimming, scanning, and speed reading, Identifying main ideas, supporting details, tone, and purpose, Sentence and paragraph completion, Matching headings, sequencing ideas, Locating information, Contextual understanding, Reading comprehension passages (academic/business)
Practice Activities: Reading Comprehension, MCQs, paragraph matching, inference-based exercises, mock IELTS reading tasks

Module 4: Writing Skills

Sentence structure and paragraph writing, Coherence and cohesion in writing, Descriptive and narrative writing, Formal and informal letter writing, Email writing, Report/Essay writing: expressing views, arguing for/against, comparing and contrasting
Practice Activities: Drafting emails, letters and essay writing, mock IELTS writing tasks

Module 5: Grammar and Vocabulary for Communication

Grammar: Subject-verb agreement, Tense usage and consistency, Articles, prepositions, punctuation, Common sentence errors and corrections; Vocabulary: Word formation: root, prefix, suffix, Synonyms, antonyms, Idioms, phrases, and collocations, Contextual vocabulary, Verbal analogies
Practice Activities: Grammar correction drills, vocabulary quizzes, contextual use in writing/speaking

References Recommended

Books

- The Official Cambridge Guide to Ielts Student's Book With Answers with DVD Rom
- Simone Braverman's *Target Band 7*
- *Focus on IELTS Foundation Course book.*
- High School English Grammar and Composition by Wren and Martin
- Word Power Made Easy by Norman Lewis

Online Resources:

https://ieltsonlinetests.com
https://www.duolingo.com

Job Readiness-02

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM0002	**Job Readiness-02**	**2**	0+2+0

The Job-Readiness-II Course equips learners with essential aptitude, reasoning abilities and English communication skills to excel in competitive exams and placement drives. Covering quantitative problem-solving, verbal reasoning and English communication, the course blends theory with practice on MyPerfectice where a student has to achieve Level 4 and qualify the placement readiness test.

1. To strengthen quantitative and logical reasoning abilities for problem-solving
2. To develop accuracy in grammar, vocabulary and verbal reasoning for effective participation in assessments and competitive exams.
3. To achieve English language proficiency for career success.

By the end of the course, learners will be able to:

CO1: Apply quantitative aptitude and logical reasoning skills to solve problems accurately in academic, placement, and workplace contexts.

CO2: Demonstrate proficiency in verbal reasoning and analytical thinking to interpret, analyze and solve complex reasoning tasks.

CO3: Achieve accuracy in grammar, vocabulary, and verbal skills to communicate effectively in assessments, competitive exams, and professional scenarios.

CO4: Develop reading comprehension and writing abilities, including coherent and structured expression, CV writing, and CELTS writing tasks.

CO5: Integrate aptitude, reasoning and communication skills for career success.

CO, PO Mapping Matrix												
CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1			3								
CO2				3	3							
CO3			2	3								
CO4			1	2	3							
CO5			2		3							

MODULES

Module 1: Quantitative Aptitude

Basic Arithmetic: Calculation Techniques, Number System, HCF and LCM; Arithmetic: Percentage, Ratio and Proportion, Profit and loss (Discount), Time and Work (Pipe & Cistern), Simple interest and Compound interest, Time Speed and Distance (Problems on trains, Boat & Stream), Mixture and Allegation; Advanced Arithmetic: Linear and Quadratic equation, Permutation and Combination, Data Interpretation, Probability & Statistics

Module 2: Reasoning

Verbal Reasoning: Series, Coding & Decoding, Clock & Calendar, Direction & Blood Relation, Order & Ranking, Sitting arrangement, Puzzles; Non-Verbal Reasoning: Completion of series, Completion of figures, counting of figures, Cubes & Dices, Paper Folding & Cutting; Analytical Reasoning: Gamified assessment, Syllogism, Statement & Conclusion, Statement & Arguments, Cause and effect, Course of action.

Module 3: Communication and Verbal Ability

Reading Comprehension: Reading strategies-skimming, scanning, identifying main ideas, Supporting details, tone, purpose, contextual understanding, Sentence/paragraph completion, matching headings, sequencing ideas; Reading comprehension passages; Writing and Expression-Sentence structure & paragraph writing; coherence and cohesion; CELTS Writing, CV writing; Grammar, Vocabulary & Verbal Skills-Articles, prepositions, subject-verb agreement, tenses, Sentence correction, error spotting, punctuation; Synonyms, antonyms; one-word substitutions; word formation; Idioms, phrases, contextual vocabulary, cloze tests; Verbal analogies, jumbled sentences/paragraphs. Practice – Newspaper Reading, MCQs, inference, cloze passages, mock CELTS reading; Mock CELTS writing, CV Writing.

References

1. Wren, P.C., & Martin, H. (2015). High School English Grammar and Composition (Multicolour Edition). S. Chand Publishing. ISBN: 9789352530083.Lewis, N. (2014).
2. Word Power Made Easy: The Complete Handbook for Building a Superior Vocabulary. Penguin Random House. ISBN: 9781101873854.
3. Murphy, R. (2014). Essential English Grammar (4th Edition). Cambridge University Press. ISBN: 9788175960299.Tyra, M. (2009).
4. Magical Book on Quicker Maths. BSC Publishing. ISBN: 9788190458927.
5. Verma, R. (2018). Fast Track Objective Arithmetic. Arihant Publications India Ltd. ISBN: 9789312149836.

Online References

https://www.duolingo.com/

https://www.indiabix.com/aptitude/questions-and-answers/

https://www.geeksforgeeks.org/aptitude/aptitude-questions-and-answers/

https://prepinsta.com/learn-aptitude/

Practice Platform

MyPerfectice

Job Readiness-03

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM0003	**Job Readiness-03**	**2**	0+2+0

The Placement Training (CV, GD & PI) course is designed to prepare students for success in campus recruitment and professional hiring processes. It focuses on three critical areas of employability: performing effectively in group discussions (GD, crafting an impactful curriculum vitae (CV)) and excelling in personal interviews (PI). Through a blend of instructor-led sessions, hands-on practice, peer reviews, and AI-driven feedback from platforms like Yoodli and Skillora, students will gain practical exposure to real-world recruitment scenarios. The course emphasizes both verbal and non-verbal communication, critical thinking, teamwork and personal presentation skills. By the end of the program, learners will have the confidence, clarity and strategic approach needed to stand out in competitive placement processes and build a strong professional presence.

Course Objectives

The objectives of the course are

1. To equip learners with industry-relevant competencies in CV writing, group discussion and personal interview techniques for enhanced employability.
2. To enable participants to self-assess and enhance their communication skills through structured practice and AI-based feedback tools.
3. To build confidence, clarity and a logical structure in presenting ideas effectively with unique differentiators

Course Outcomes:

After completion of the course students will be able to:

CO1: Present profile with unique differentiators

CO2: Prepare professional CVs and cover letters that showcase relevant skills and achievements.

CO3: Participate effectively in group discussions with clarity and confidence.

CO4: Assess and improve communication and interview skills using AI feedback and peer evaluation.

CO5: Present ideas confidently and clearly in interviews and professional settings.

CO, PO Mapping Matrix												
CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1			3								
CO2				3	3							
CO3			2	3								
CO4			1	2	3							
CO5			2		3							

Course Contents

Module 1: Group Discussion

This module aims to equip students with the ability to participate effectively in group discussions by understanding formats, developing content and applying strategies for impactful communication.

Group Discussion Basics, Components of GD, Types of GD, Do's & Don'ts, Elements of a successful GD, GD FAQS. Practice: Zoom breakout rooms

Module 2: CV Writing and Cover

This module equips students with the skills to create professional, industry-ready CVs that effectively present their qualifications, skills and achievements.

Purpose and importance of CV & cover letter, Key CV sections: personal information, career objective, education, experience, projects, internships, skills, competencies, certifications, achievements, interests; cover letter parts: introduction, body, conclusion, CV formats: chronological, functional, combination, Tailoring to specific job applications, proofreading and editing. Practice: Design a CV with a cover with unique differentiators on Enhancv/Overleaf

Module 3: Personal Interview (PI)

To prepare students to confidently face different types of personal interviews by developing strong verbal and non-verbal communication skills, applying structured answering techniques and utilizing AI-based feedback tools to enhance overall interview performance.

Introduction to personal interviews and types, Preparation strategies and company research, Common HR questions and structured answering, Technical/domain-specific questions, Non-verbal communication skills. Practice: Mock interviews with AI feedback (Yoodli, Skillora)

Books

Seely J, 2013, Oxford Guide to Effective Writing and Speaking. Oxford University Press.
Bovee, C. L., Thill, J. V., & Raina, R. L. (2016). *Business Communication Today*. Pearson India.
Raman, M., & Singh, P. (Year). *Business Communication*. Oxford University Press.
McGrath, E. H. S. J. (2015). *Basic Managerial Skills for All* (9th ed.). PHI Learning.

References

https://yoodli.ai/
https://skillora.ai/
https://enhancv.com/
https://www.overleaf.com/gallery/tagged/cv

Quantitative Techniques

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM4261	**Quantitative Techniques**	**4**	**3+0+1**

Course Rationale:
This course focuses on developing quantitative aspects of management that helps in decision making while dealing with business problems.

Course Objectives

- To build a strong foundation in statistical tools and techniques essential for solving business and management problems.
- To develop students' skills in collecting, analyzing, and interpreting data for informed decision-making.
- To introduce probability concepts and their applications in evaluating uncertainties in business contexts.
- To familiarize students with hypothesis testing techniques for validating business assumptions.
- To enable students to apply regression models and descriptive analytics for understanding relationships and trends in data.

Course Outcomes

- CO1: Apply statistical techniques to solve business problems and enhance decision-making capabilities.
- CO2: Analyze, interpret, and present data using descriptive statistical methods for managerial insights.
- CO3: Demonstrate the application of probability distributions to assess risks and uncertainties in business scenarios.
- CO4 Perform hypothesis testing to validate assumptions and improve decision-making processes.
- CO5: Use regression analysis and visualization techniques to identify patterns and relationships in business data.

Course Outcome to Program Outcome Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	-	-	3	-	2	2	2	-	-	3	2	3
CO2	3	3	2	3	-	2	-	2	3	2	-	-	3	2	2
CO3	3	3	3	-	-	2	-	2	3	2	-	-	3	2	2
CO4	3	3	3	2	-	3	-	2	2	3	-	-	3	2	3
CO5	3	3	3	3	-	3	-	2	3	3	-	-	3	3	3

***High-3, Medium-2, Low-1**

Course Syllabus

Module I: Logic and Data Measurement

Logic for problem solving

- Induction, Deduction, Falsification

- Measurement of data

- Scales of measurement (nominal, ordinal, interval, ratio)

- Data classification and tabulation

- Population vs. sample

- Concepts of random variables, parameters, and estimators

- Importance of statistics in decision-making

Module II: Data Representation and Descriptive Statistics

- Classification of data: Tabulation and frequency distributions

- Diagrammatic and graphical representation:

- Histograms, bar diagrams, pie charts, line graphs

- Descriptive statistics:

- Measures of central tendency (mean, median, mode)

- Measures of dispersion (range, variance, standard deviation)

- Measures of skewness and kurtosis

Module III: Probability and Probability Distributions

- Probability concepts:

- Basic rules of probability

- Conditional probability and independence

- Bayes' theorem and its applications

- Probability distributions:

- Discrete distributions: Binomial, Poisson

- Continuous distribution: Normal distribution

- Central Limit Theorem and its significance

Module IV: Hypothesis Testing and Statistical Inference

- Introduction to hypothesis testing:

- Null and alternative hypotheses

- Type I and Type II errors (α and β) and their relationship

- P-value and significance level

- Determining sample size (sample size calculators)

- Parametric tests:

- t-tests (one-sample, independent, and paired samples)

- Non-parametric tests:

- Chi-square test (goodness of fit, test of independence)

- Statistical software: Application of SPSS and Excel to real-world use cases (20 case studies)

Module V: Applied Analytics and Infographics Project

- Development of a data-driven infographic project:

  - Building a coherent storyline

  - Employing descriptive statistics

  - Creating comparative visualizations and graphs (Excel/SPSS)

Textbooks:

1. Levin, R. I., & Rubin, D. S. (Statistics for Management) Prentice Hall of India

3. Gupta, S. C., & Kapoor, V. K. (Fundamentals of Mathematical Statistics), Sultan Chand & Sons

Micro Economics

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM1184	Micro Economics	4	3+0+1

Course Rationale:
A successful manager needs to decide on where to work, how much to produce, where to invest, and what goods to buy, among others. So it is important to know how markets work and how to make good decisions as a manager or as an individual operating in a market environment. This is what this course Managerial Economics will teach.

Course Objectives:

- To develop a managerial economics perspective
- To facilitate the students understand different economic paradigms using
- Acquire conceptual and theoretical knowledge of microeconomics in management perspective and understand and appreciate the tools of microeconomics and their applications;
- Appreciate the new challenges to business management in the internet age
- Appreciate the linkages between economics and the functional areas of business

Course Outcome:
After completion of the course students will be able

CO1: Obtain the theoretical and conceptual understanding of microeconomics necessary for analysing the actions of a single economic agent.
CO2: Develop a microeconomic perspective on company issues by demonstrating how to employ customer utility-satisfying and -maximizing characteristics, elasticity, and opportunity cost in strategic planning.
CO3: Becoming a pioneer in the digital economy in the future Evaluate and contrast the various market structure types, utilize them to develop a firm's and industries pricing strategy, and share your findings with the decision-maker.
CO4: Recognize and grasp the dynamics of production, including cost, revenue, and profit factors, and create policies to eliminate market structure disequilibrium.

CO5: Educate students on how to use sustainable resources and economic theory in their daily lives, and learn the optimization functions for both consumer and producer equilibrium.

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3		3												
CO2	3	3			2				3						
CO3	3		3	1											
CO4	3					3	2								
CO5	3						3		3						

***High-3, Medium-2, Low-1**

Course contents:

Module: I

The Central Concepts:

Logic of Economics: Scarcity and Efficiency: The Twin Themes of Economics; Three Problems of Economic Organization: Market, Command, and Mixed Economies, Society's Technological Possibilities: Inputs and Outputs; The Production-Possibility Frontier: Applying the PPF to Society's Choices;The Modern Mixed Economy: How Markets Solve the Three Economic Problems; Circular Flow of an Economy; The Invisible hand given by Classical Economists; The visible hand of the government given by modern Economists

Module: II

Demand, Supply and its Applications:

Basic Elements of Supply and Demand: Forces behind the demand and supply curve; Shifts in demand and supply curve; Equilibrium of Supply and Demand; Price Rationing;Supply and Demand: Elasticity and Applications: Price Elasticity of Demand and Supply; Elasticity and Revenue; The Paradox of the Bumper Harvest; Applications to Major Economic Issues: Impact of a Tax on Price and Quantity; Minimum Floors and Maximum Ceilings;Demand and Consumer Behavior: Classical Utility Theory-Cardinal Utility; Neoclassical Utility Theory-Ordinal Utility Theory (Indifference Curve analysis; Income effect, Price effect; Substitution effect); The paradox of value; Leisure and the Optimal Allocation of Time

Module: III

Theory of Production and Cost:

Theory of Production and Marginal Products: The Production Function; Total, Average, and Marginal Product; The Law of Diminishing Returns; Returns to Scale; Technological Change; Empirical Estimates of the Aggregate Production Function;Economic Analysis of Costs: Total Cost: Fixed and Variable; The Relation between Average Cost and

Marginal Cost; The Link between Production and Costs; Diminishing Returns and U-Shaped Cost Curves; Choice of Inputs by the Firm; Marginal Products and the Least-Cost Rule; Transaction Cost, Opportunity Cost and Markets.

Module: IV
Decisions of the Firm:
Perfect and Imperfect Market: Perfect competition and Pareto optimality; Sources of imperfect competition; Economic Costs of Imperfect Competition; Public Policies on Imperfect Competition

Module: V
Market Failure and Inefficiency:
Economics of Risk and Uncertainty: The Economic Impacts of Speculation; Market Failures in Information; Moral Hazard and Adverse Selection;
Externalities: Market Inefficiency with Externalities; Analysis of Inefficiency; Valuing Damages and Policies to Correct Externalities

Text Book:

- Geetika, Ghosh. P. & Roy Choudhury. P., 'Managerial Economics', Tata McGraw Hill EducationPvt Ltd, New Delhi

Reference Books:

- Samuelson, Paul A. and Nordhaus, W.P., 'Economics', McGraw Hill, New York
- Pindyck, R.S., Rubinfeld D. L. and Mehta P. L., 'Microeconomics', Pearson Education

Data analysis through Microsoft Excel

Code: CUTM1185 **Credit:** 0+0+2

Course Rationale: This course focuses on developing analysis skills of future managers forappropriatedecision making.

Course Objectives:

- To build a strong understanding on the Basics of Microsoft Excel
- To understand data crunching and data presentation

Course Outcome:

- To create dynamic reports by mastering one of the most popular tools in excels - PivotTables, Pivot chart, If, Vlookup, Index, and Match etc.

- **V**isual representation of data through charts and graphs.
- Descriptive statistics such as mean, median, mode, and standard deviation.
- Predictive modeling with inferential statistics like regression analysis.
- Data grouping and summarization using pivot tables.
- Presentation of data analysis results with conditional formatting.**Course**

Contents

Course Outcome to Program Outcome Mapping:

COs	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**	**PSO1**	**PSO2**	**PSO3**
CO1	3	3		3									3	3	3
CO2	3	3		3									3	3	3
CO3	3	3		3									3	3	3
CO4	3	3		3									3	3	3
CO5	3	3		3									3	3	3

Module: I
Introduction to Excel: Course objective, outcome, methodology and assessment, Excel Introduction, , Basic Navigation Tab, Concept of Cell and Cell address , row Column concept, Sum, SumIf, Sumifs, Count number, CountA (Text and Number), Count if, Countifs, Average, AverageA, Averageif, Averageifs.

Module: II
Understanding different Formula: Round, Roundup, Round Down, Concatenate, Min, Max, Trim, Lower,Upper, Proper,Left, Right, Mid,,Exact, Randbetween, Rand, Len (Length of character) Paste special, SQRT, If function with Example of IF, More function like And, OR with their example, Conditional Formatting basic and advance level with OR, AND, Nested IF function, Index, Offset, Match

Module: III
Data analysis and Data presentation: Vlookup, Hlookup, Trace Precedents, Trace Dependents, show formula, Text to Column, Data Validation, Filter,Duplicate Removal, Sort, Filter, Wrap Test, What if Analysis, with detail example Merge Cell, Shapes, Median, Mode, Slandered Deviation (S), Correlation, Large, Small, Pivot Table, Pivot Charts, Slicing, Sparkling

Online Reference links :
https://www.youtube.com/watch?v=L3-uVawPLKc
https://www.youtube.com/watch?v=RdTozKPY_OQ&t=192s
https://www.youtube.com/watch?v=rBuiBNZWjE4&t=1511s

Economic Environment of Business

Code: CUTM1186 **Credit**: 3+0+1

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM1186	Economic Environment of Business	4	3+0+1

Course Rationale:

This course focuses on alternative perspectives of economic growth and development. It will ensure manager to understand different economic perspectives and government policies that have much effect on business.

Course Objective:

- To develop perspectives of economic growth and development with special reference to Indian economy.
- Acquire conceptual and theoretical knowledge of Indian economic and environmental perspective;
- Understand and appreciate the tools of Environmental economics and their applications in industrial sector;
- Develop the ability to evolve business/management strategy using current economic scenario and environmental impact
- Appreciate the new challenges to business management in the internet age
- Appreciate the linkages between economics and the functional areas of business

Course Objective:

CO1: Learn the theoretical and conceptual aspects of economics that are necessary to assess the financial actions of a single economic agent.

CO2: Ability to explain environmental problems associated with industrialization by tying theory and practice together; comprehension of a country's developmental state through trend and pattern analysis of developmental indicators such as the Human Development Index

CO3: Plan a company's or an industry's pricing strategy and inform decision- makers about environmental policies that will save money by analysing and contrasting various economic indicators and environmental problems.

CO4: Show how to incorporate ideas from environment economics, such as CSR and EKC, into strategic planning

CO5: Capacity to maintain a sustainable economy and environment, as well as to comprehend and apply the principles of resource conservation in daily life, business, and health

Course Outcome to Program Outcome Mapping:

Course Outcomes (CO)	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3											
CO2		3			2				3			

CO3			3	2								
CO4						3	2					
CO5								3		2		

***High-3, Medium-2, Low-1**

Course Contents:

Module: I

Perspectives of Growth and Development: Free Market Perspectives- free market capitalism and profit maximisation., Marxian Perspectives- the Labour theory of Value and the falling rate of profit, Keynesian Full Employment- Underemployment equilibrium, Keynesian theory and policy, Gandhian Perspectives- Gandhi on Socialism, Economic Ideas- How Gandhi is different from Marx?, Critiques of present development models-Gender, Human rights and Ecology, Book Review- Choice of Techniques: An Aspect of the Theory of Planned Economic Development by AmartyaSen, Economy of Permanence by J C Kumarappa, Small is Beautiful by E F Schumacher, The Indian Economy-Poverty and Development by PramitChaudhuri (Reviewed by Michael Lipton)

Module: II

India's Economic Environment since Independence to Liberalisation: Planning Debate- The Bombay Plan, Sarvodaya Plan, People's Plan, The Mahalanobis Strategy, The Wage Good ModelPlanning Process and its focus areas- Review of Five Year PlansAchievements and Failures-Green Revolution, Nationalisation of Bank, Public Sector, Hindu Rate of Growth, PL 480 crisisGDP and its growth- India's GDP in Pre and Post Liberalisation, Sector wise contribution to India's GDPInflation and its control in India

Module: III

Current India Economic Environment: Structure of Indian Economy- Primary, Secondary and Tertiary;Kuzents hypothesis on structural changeMonetary Policy Environment-RBI's Monetary Policy and its Instruments,CRR, SLR, Marginal Standing Facility Rate, Repo rate, Reverse Repo rate**,** Present Fiscal Policy Environment- Fiscal Policy since 1991, FRBM Act**,** Investment Policies- Globalisation, Liberalisation and Privatisation

Agricultural policies- Plan Expenditure on Agriculture, Agricultural Prices, National Agricultural Policy 2009-2015, Poverty Alleviation Policies-Special focus on DBT, India's Balance of Payments- Current Account and Capital Account.

Module: IV

Projects: Project on current scenario of Indian Economy, How can India become a 5 trillion economy?, How can India drastically improve social indicators?, Strategies to make India as global factory, Strategies to improve India's HDI score , Comparison of India's economy with China's economy , Analysis of Nobel Prize -Abhijit Banerjee, AmartyaSen, Paul Krugman, Daniel Kahneman, Williamson ElenorStromme and ElinorOstrom, Present Economic Scenario-Covid-19

Text Book:

- Development Economics by Debraj Ray. Oxford University Press

Reference Books:

- History of Economic Thought- R R Paul. Kalyani Publishers
- Economy by Dutt andSundaram

Indian Society and Culture

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM1187	Indian Society and Culture	2	1+0+1

Course Rationale:

The purpose of this course is to expose students of Technology and Management to different aspects of Indian society and culture.

Course Objectives:

Students will develop

- An understanding of societal and cultural dimensions of the dynamic nature of society and the environment in which they will live and work as scientists' engineers, entrepreneurs, or managers.
- More specifically, they will appreciate how societal and cultural issues interface with technology, science and business in the context of overall development of the country.

Course Outcomes:

CO1: Gain insights into the roots of Indian society, its rural and urban social structures, and the functioning of social institutions. They will analyze issues related to caste, tribes, Dalits, and other excluded groups, along with the dynamics of power and conflicts.

CO2: Develop a basic understanding of Indian culture, including languages, literature, and cultural change. They will examine the impacts of cultural evolution on Indian society and its diverse communities.

CO3: Understand key social movements such as tribal, women, and environmental movements. They will also explore the contributions of reformers and nation-builders, such as Rammohan Roy, Jyotirao Phule, M.K. Gandhi, B.R. Ambedkar, and others, in shaping modern India.

CO4: Analyze pressing social issues in modern India, including poverty, unemployment, migration, environment and climate, gender disparities in development, the plight of slums and the informal sector, and challenges faced by children and women. Role of technology in social development.

Course Outcome to Program Outcome Mapping:

CO/PO	PO-01	PO-02	PO-03	PO-04	PO-05	PO-06	PO-07	PO-08	PO-09	PO-10	PO-11	PO-12
CO1	3	3	2	3	2	3	2	1	2	3	1	2
CO2	3	2	2	2	2	2	1	1	2	3	1	2

CO3	3	3	2	3	2	3	2	1	2	3	1	2
CO4	3	3	2	3	3	3	2	2	2	2	1	2

***High-3, Medium-2, Low-1**

Course Contents:

Module: I

Introduction to Indian Society: Indian Society - Roots of Indian Society; Social Structure- Rural and Urban Contexts; Social Institutions in Indian Society; Scheduled Caste, and Scheduled Tribe and other excluded groups; Power and Conflicts.

Module: II

Introduction to Culture in Indian Society: Basic understanding of culture in India; Languages and Literature in India; Culture Change and its Impact on Indian Society.

Module: III

Social Movements and Nation Building: Social Movements-tribal, women and environment; Rammohan Roy-Social reform and modernism; Jyotirao Phule-Caste and education; M. K. Gandhi-Non-violence and rural upliftment; B. R. Ambedkar-Caste abolition, Constitution; Rabindranath Tagore-Cultural nationalism.

Module: IV

Social Issues in Modern India and Role of Technology to Address Those Issues: Poverty-multidimensional aspects; Gender, Unemployment, Migration, Environment and Climate, Slums and Informal sector. Role of technology in the socio-economic development of modern India.

Book Reference:

- "Indian Society" by Ram Ahuja
- "Culture and Society in India" by A. L. Basham
- "Social Movements in India" by Ghanshyam Shah
- "Poverty and Un-British Rule in India" by Dadabhai Naoroji

Operation Research

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM4368	Operation Research	2	0+2+0

Course Objectives:

The objectives of this course are to:

- Provide students with an understanding of the fundamental concepts and techniques of Operation Research.
- Enable the formulation and analysis of mathematical models for decision-making scenarios.
- Equip students with problem-solving tools like linear programming, transportation models, and network analysis.
- Develop the ability to apply OR techniques to optimize real-world problems in logistics, finance, engineering, and management.

Course Outcomes (COs):

By the end of this course, students will be able to:

- CO1: Demonstrate an understanding of the key concepts in Operation Research
- CO2: Formulate and solve linear programming problems.
- CO3: Analyze and solve transportation problems.
- CO4: Analyze and solve transportation assignment problems.
- CO5: Apply network analysis techniques like CPM and PERT for project planning and management.

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3		3									3	3	3
CO2	3	3		3									3	3	3
CO3	3	3		3									3	3	3
CO4	3	3		3									3	3	3
CO5	3	3		3									3	3	3

Detailed Syllabus

Unit 1: Introduction to Operation Research

Definition and Scope of Operation Research

Applications in various industries

Phases of OR study

Tools and techniques of OR

Unit 2: Linear Programming

Formulation of Linear Programming Problems (LPP)

Graphical solution method

Simplex method and duality theory

Sensitivity analysis

Unit 3: Transportation and Assignment Problems

Transportation model: Initial feasible solution and optimization methods (MODI method)

Assignment model: Hungarian method

Variants like unbalanced problems

Unit 4: Network Analysis

Project management: CPM and PERT

Determination of critical path

Time-cost trade-offs

Applications in resource allocation:

Books:

- "Operations Research: An Introduction" by Hamdy A. Taha
- "Introduction to Operations Research" by Frederick S. Hillier and Gerald J. Lieberman
- "Operations Research" by S.D. Sharma
- Online Resources:

Basics of Design Thinking

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM1190	Basics of Design Thinking	2	0+1+1

Course Rationale:
The course will orient the students on the basics of the design thinking processand familiarize them with the elements and application of Design thinking.

Course Objectives:

The course aims to

- Orient the participants on the basics of the design thinking process
- Familiarize participants with the elements and application of Design thinking

Course Outcome:

After completion of the course, the student will be able to

1. Apply the design thinking process to innovative problem solving
2. Orient the participants on the basics of the design thinking process
3. Familiarize participants with the elements and application of Design thinking

Course Outcome to Program Outcome Mapping:

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO1	PSO2	PSO3
CO1	3	3	2	3									3	3	3
CO2	3	3		3									3	3	3
CO3	3	3		3									3	3	3
CO4	3	3		3									3	3	3
CO5	3	3		3									3	3	3

Course Contents:

Module: I

Basics of Design Thinking, Why Design Thinking, Design Thinking Mindset (Inspiration, Ideation and Implementation) Design thinking process, (Empathy, Define, Ideate, Prototype, Test). Cases of application of Design thinking approach (Intuit, IDEO, Infosys, IBM, Google, Apple, Jubilant Foods). This will be in a flip class mode followed by a workshop, to be conducted by an external expert and a faculty anchor.

Module: II

Executing a Design Thinking Project- Apply Interviewing and empathy building technique, Drawing inferences from the observations, Defining a point of view, Ideation process, developing and testing prototypes and writing a story of a minimum viable solution.

Text Book:

- Tom Kelly & Jonathan Littman (2001). "The Art of Innovation" Broadway Publication.

Reference Book:

- Brown Tim (2008). "Design Thinking", Harvard Business Review

Data Analysis and Visualization Using Python

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM2305	Data Analysis and Visualizatio Using Python	2	0+0+2

Course Rationale:

The course will increase the ability of students to develop visualisation to tell the story.

Course Objectives:

This course intends to develop in students

- How to tell a story from data
- How to marshal the data for storyline
- The ability to develop visualisation to tell the story
- The focus is on analysis of data using visualisation as a tool

Course Outcomes

After completion of the course, the student will be able to do

1. Data processing: Python offers a range of tools for data processing and cleaning, making it easier to prepare data for analysis and visualization.
2. Data visualization: Python provides libraries like Matplotlib, Seaborn, and Plotly that allow for the creation of detailed and visually appealing data visualizations.
3. Data insights: By visualizing data, Python enables the discovery of meaningful patterns, trends, and insights that can inform business decisions and strategy.
4. Advanced analysis: Python's vast ecosystem of libraries and tools allows for advanced data analysis techniques, including predictive modeling and statistical analysis

Course Outcome to Program Outcome Mapping:

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO1	PSO2	PSO3
CO1	3	3		3									3	3	3
CO2	3	3		3									3	3	3
CO3	3	3		3									3	3	3
CO4	3	3		3									3	3	3
CO5	3	3		3									3	3	3

Course Contents:

Module: I

Story board development: The objective and flow of the story to be understood through cases.

Module: II

Data reading using python functions: Python libraries: Pandas, NumPy, Plotly, Matplotlib, Seaborn, Dash, Data collection from online data sources, Web scrap, data formats such as HTML, CSV, MS Excel, data compilation, arranging and reading data, data munging.

Module: III

Data visualization using python libraries: Different graphs such as Scatterplot, Line chart, Histogram, Bar chart, Bubble chart, Heatmaps etc. Dashboard Basic:Layout, Reporting, Infographics, Interactive components, live updating

References:

https://www.programmer-books.com/wp-content/uploads/2019/04/Python-for-Data-Analysis-2nd-Edition.pdf
https://towardsdatascience.com/data-visualization/home
Reading materials and videos available on internet on how to use ANACONDA, JUPYTER NOTEBOOK and Python Libraries

DIGITAL TECHNOLOGIES

Introduction to AI/ML

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM1261	Introduction to AI/ML	1	0+0+1

Course Rationale:

The course will develop a basic understanding of AI/ML and its transformative impact on business (existing and new).

Course Objective:

- Develop a basic understanding of AI/ML and its transformative impact on business (existing and new).

Course Outcomes:

After completion of the course, the student will be able to do

1. Acquire the conceptual and theoretical knowledge of AI
2. Visually represent data, making it easier to identify patterns, trends, and relationships within the data by using AI
3. Regression analysis, hypothesis testing, and confidence intervals, Microsoft Excel provides inferential statistics that allow for making predictions and drawing conclusions based on sample data
4. Data modeling tools, including linear and logistic regression, that help identify relationships between variables and create predictive models.

Course Outcome to Program Outcome Mapping:

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO1	PSO2	PSO3
CO1	3	3		3		3	3						3	3	3
CO2	3	3		3		3							3	3	3
CO3	3	3		3									3	3	3
CO4	3	3		3									3	3	3
CO5	3	3		3									3	3	3

Course Contents:

Module: I

Introduction to AI/ML, Applications of AI/ML in Marketing, Supply Chain Management, New User Experience,Insurance& Real Estate How NETFLIX uses AI/ML, How Microsoft is advancing manufacturing innovation with AI, Power Industry 4.0 with Artificial Intelligence

Module: II

Centurion University where AI/ML could be applied for transformative impact

References:

https://www.coursera.org/learn/introduction-to-ai
https://www.coursera.org/learn/wharton-ai-application-insurtech-real-estate-technology?
https://www.linkedin.com/pulse/15-applications-artificial-intelligence-marketing-robert-allen/

Introduction Data Analytics

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM1262	Introduction Data Analytics	1	0+0+1

Course Rationale:

This course will expose you to the data analytics practices executed in real time in the business world. The students will explore key areas such as the analytical process, how data is created, stored, accessed, and how the organization works with data and creates the environment in which analytics can flourish. This course will help the students to gain a strong foundation in all the business areas that support analytics.

Course Objective:

- Develop a basic understanding of Data Analytics and its transforming impact on business.

- Understand and simply articulate: What is Data Analytics? (in non-technical terms)

Course Outcomes:
After completion of the course, the student will be able to do

1. Visual representation of data through charts and graphs.
2. Summary statistics such as mean, median, and standard deviation are available
3. Predictive analysis using regression analysis and hypothesis testing

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3		3		3	3						3	3	3
CO2	3	3		3		3							3	3	3
CO3	3	3		3									3	3	3
CO4	3	3		3									3	3	3
CO5	3	3		3									3	3	3

Course contents:
Module: I
Introduction to Data Analytics, Applications of Data Analytics in Marketing, Supply Chain Management, New User Experience, Automobile, Amazon India uses Data Analytics to automate the process of product recommendations for their customers, Demand Positioning and Segmentation by UBER India.

Module: II
Applications of Data Analytics in Centurion University to improve- Student Outcome, Admissions, Faculty Quality & Managing Finance.

Introduction Additive Manufacturing/3D Printing

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM1263	Introduction Additive	1	0+0+1

	Manufacturing/3D Printing		

Course Rationale:
This short course is designed to clarify and practically demonstrate the most important concepts for the learners to know about the applications of 3D printing (also known as additive manufacturing). This course walks the students through how additive manufacturing has been an important part in shaping the Business landscape.

Course Objectives:

- Develop a basic understanding of additive manufacturing/ 3D printing and its transforming impact on business.

Course Outcomes:
After completion of the course, the student will be able to do

1. Faster product development: 3D manufacturing allows designers and engineers to quickly create and test prototypes, reducing the time it takes to bring a product to market.
2. Improved design accuracy: 3D manufacturing enables the creation of precise and detailed models, reducing the risk of design errors and increasing the accuracy of prototypes
3. Enhanced product quality: 3D manufacturing enables the creation of consistent and high-quality products, leading to improved customer satisfaction and brand reputation.
4. Increased customization: 3D manufacturing allows for the creation of unique and customized products, leading to increased competitiveness and differentiation in the marketplace.

Course Outcome to Program Outcome Mapping:

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO1	PSO2	PSO3
CO1	3	3		3		3	3						3	3	3
CO2	3	3		3		3							3	3	3
CO3	3	3		3									3	3	3
CO4	3	3		3									3	3	3
CO5	3	3		3									3	3	3

Course contents:

Module: I

What is 3D printing, Applications of 3D printing in Healthcare Industry, Manufacturing, Education, Benefits of 3D printing in Business. 3D printing for production at Siemens Energy Innovation Centre. 3D printing in Centurion University.

Module: II

Centurion University where 3D printing could be applied for transformative impact.

References:

https://www.classcentral.com/course/3d-printing-revolution-5991
https://www.youtube.com/watch?v=70njtcA6un0
https://www.youtube.com/watch?v=9uGq2BU7Fyc
https://www.youtube.com/watch?v=xTprmsVHrrI

Introduction to AR/VR

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM2300	Introduction to AR/VR	1	0+0+1

Course Rationale:

This course focuses on the basic understanding of Augmented Reality (AR) & Virtual Reality (VR) concepts and the way they are being utilized by the Industries to drive business much efficiently. Throughout the course, the students will learn about each of the supporting technologies, some history about when it first came into use, limitations and future potential for improvement, and how AR/VR is used by major industries.

Course Objectives

- Understand different forms of AR/VR and their applications

Course Outcomes

1. Improved Immersive Experience: AR and VR technology provides a more immersive experience by allowing users to interact with digital content in a more natural and realistic way. This results in a more engaging and memorable experience for users, which is especially important for gaming, education, and entertainment applications

2. Enhanced Training and Simulation: AR and VR technology can be used for training and simulation purposes, such as for military, medical, and industrial applications. This allows users to practice skills in a safe and controlled environment, which can lead to improved performance and reduced errors in real-world scenarios

3. Increased Productivity: AR and VR can increase productivity by allowing users to visualize and manipulate digital information in a more intuitive way. This is especially true for design, engineering, and manufacturing applications, where AR and VR can help users to collaborate, communicate, and make more informed decisions.

4. Better Accessibility: AR and VR can improve accessibility for people with disabilities or those who are otherwise unable to experience certain things in the physical world. For example, VR can provide an immersive experience for people with mobility issues, while AR can provide visual or audio cues for people with visual or hearing impairments.

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3		3		3	3						3	3	3
CO2	3	3		3		3							3	3	3
CO3	3	3		3									3	3	3
CO4	3	3		3									3	3	3
CO5	3	3		3									3	3	3

Course Contents:

Module: I

Introduction to AR/VR, Applications of AR/VR in building better user interface, marketing, Automobile, TATA Motors VR Showroom Concept, AUDI AR/VR Product Marketing Experience, Fanta using AR/VR for Packaging

Module: II

AR/VR in Gram Tarang for modelling EV's**,** Centurion University's Unity Lab for AR/VR development, AR/VR for learning in classes.

References:

- https://www.coursera.org/learn/introduction-virtual-reality
- https://www.youtube.com/watch?v=FaNtoxc-_Ww
- https://www.youtube.com/watch?v=6Z4n6KzUgPc

Introduction to Emerging Mobility Solutions

Course Code	Course Title	Credits	Type (T+P+Pj)

CUTM2301	Introduction to Emerging Mobility Solutions	1	0+0+1

Course Rationale:

This course focuses on the basic concepts of smart mobility and various industrial applications. The students will be exposed to real world examples of how smart mobility solutions have been applied in various situations, how they have made advances in human life and what their future capabilities will be. After completing this course the students will be able to explain what smart mobility is and how it has been important in transforming the Business scenario.

Course Objectives:

- Develop a basic understanding of Smart Mobility Solutions and its transforming impact on business.

Course Outcomes:

1. Manage Smart Mobility solutions

2. Provide sustainable solutions and digital integration

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3		3		3	3						3	3	3
CO2	3	3		3		3							3	3	3
CO3	3	3		3									3	3	3
CO4	3	3		3									3	3	3
CO5	3	3		3									3	3	3

Course contents:

Module 1:
Introduction to Smart Mobility, Major Industrial applications, how Smart Mobility is Transforming Business. Smart Mobility Solutions as a Business: Monetizing the Emerging Megatrend in Public Transport.

Module 2:
Smart Mobility applied for transformative impact.

References Recommended:

https://www.youtube.com/watch?v=0dkg1C4B25U
https://www.youtube.com/watch?v=xgGM4sKiCk0
https://www.youtube.com/watch?v=faxfVJIoSqs
https://hub.beesmart.city/en/solutions/smart-mobility/smart-mobility-challenges-and-solutions-in-smart-cities#:~:text=This%20smart%20urban%20mobility%20solution,services%20through%20an%20integrated%20account.

Introduction to Blockchain

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM2302	Introduction to Blockchain	1	0+0+1

Course Rationale:
This course aims to develop a basic understanding and explain how block chain technology represents the way forward. After completing this course, the students will be able to explain what block chain is, how it works, and why it is revolutionary. The students will also meet the players in the block chain ecosystem through various case studies.

Course Objective:
- Develop a basic understanding of Data Analytics and its transforming impact on business.

Course Outcome:

- Understand and simply articulate: What is Block chain?
    - To train students with practical skills and experimental practices related to core and applied areas of Robotics and Artificial Intelligence to expand their knowledge horizon beyond books.
    - To enable students to design, develop and maintain mechatronics and automation systems which are useful for the society
    - To improve team building, team working and leadership skills of the students with high regard for ethical values and social responsibilities
    - To enable students to communicate effectively and demonstrate the knowledge of project management and independent research.

Course Outcome to Program Outcome Mapping:

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO1	PSO2	PSO3
CO1	3	3		3		3	3						3	3	3
CO2	3	3		3		3							3	3	3
CO3	3	3		3									3	3	3
CO4	3	3		3									3	3	3
CO5	3	3		3									3	3	3

Course Contents:

Module: I
Introduction to Block Chain, Block Chain Applications in Supply Chain Management, Marketing, E- Governance, Financial Services, Education, Telecom, Healthcare,Block Chain Currency

Module: II
Block Chain: The Indian Imperative

References:

https://www.coursera.org/learn/introduction-blockchain-technologies
https://www.coursera.org/learn/blockchain-business
https://www.youtube.com/watch?v=0w6ii3HFmYo
https://www.youtube.com/watch?v=cPKBpmtohlI

Introduction to Robotics

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM2303	Introduction to Robotics	1	0+0+1

Course Rationale:
This course focuses on the basic concepts of robotics and various industrial applications. The students will be exposed to real world examples of how robots have been applied in disaster situations, how they have made advances in human health care and what their future capabilities will be. After completing this course the students will be able to explain what robotics is and how it has been important in transforming the Business scenario.

Course Objectives:

- To understand how Robotics is used by the leading industry to simplify & automate the process
- Get knowledge on various types of Robots uses by different industries
- Understand the Robot Control Architecture

Course Outcome:

- Examine case studies of proper and improper robotic implementations
- Examine case studies of proper and improper robotic implementations
- To train students with practical skills and experimental practices related to core and applied areas of Robotics and Artificial Intelligence to expand their knowledge horizon beyond books.
- · To enable students to design, develop and maintain mechatronics and automation systems which are useful for the society.
- · To improve team building, team working and leadership skills of the students with high regard for ethical values and social responsibilities.
- · To enable students to communicate effectively and demonstrate the knowledge of project management and independent research.

Course Outcome to Program Outcome Mapping:

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO1	3	3		3									3	3	3
CO2	3	3		3									3	3	3
CO3	3	3		3									3	3	3
CO4	3	3		3									3	3	3
CO5	3	3		3									3	3	3

Course Contents:

Module: I

Introduction to Robotics, Areas of Application & benefits, The three Phase of Robot Control.

Module: II

Collaborative Robots (Cobots), Industrial Robots, Industrial robots in the automotive industry, Automated Guided Vehicles / AGV, Service robots, Domestic Robots, Security Robots, Hospitality Industry Robots, Agriculture Robots, Robots in Surgery, Revolution of Industrial Robots.

Generative AI and its Application

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM2304	Generative AI and its Application	2	0+0+2

Introduction

Generative Artificial Intelligence (GenAI) is transforming industries by enabling machines to create text, images, audio, video, code, and innovative business solutions. It is rapidly reshaping value creation across functions—marketing, finance, HR, operations, strategy, analytics, and corporate innovation. For management professionals, the true advantage of Gen AI lies not in coding, but in identifying high-impact business use-cases, crafting responsible solution designs, orchestrating systems, tools and processes, by automating routine tasks, augmenting creativity and enabling data-driven decisions.

Course Objectives

This course focuses on hands-on applications, real-world projects, and case-based learning to help MBA students explore how GenAI tools can be leveraged in business contexts.

- To equip students with practical knowledge of GenAI tools and platforms for solving business problems.
- To develop the ability to critically analyze business functions and reimagine them through GenAI applications.
- To foster innovation and entrepreneurship by enabling students to conceptualize and execute GenAI-based projects.

Course Outcomes

By the end of this course, students will be able to:

- Demonstrate hands-on expertise with leading Generative AI tools across multiple domains.
- Identify and evaluate use cases of GenAI in marketing, HR, finance, operations, and entrepreneurship.
- Design and implement real-world projects using GenAI to address business challenges.
- Assess ethical, legal, and governance issues surrounding the use of GenAI in business.
- Present GenAI-based solutions effectively with clarity, creativity, and managerial insight.

Course Outcome to Program Outcome Mapping

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO 1	3	1	2	1	1	1	1	2		1	2	1	3	2	1
CO 2	3	3	1	2	2					2		1	3	3	3
CO 3	3	3	3	3		2		3	1	1	3	1	3	3	3
CO 4	3	3	3	3	1	2		3	1	1	3	1	3	3	3
CO 5	3	3	3	3		2	1	3	1	1	3	1	3	3	3

***High-3, Medium-2, Low-1**

Course Details

Module 1: Introduction to Generative AI and Advanced Prompting (10 Hours)

Evolution of AI and Generative AI, Overview of text, image, audio, video, and code generation, Text Generation: ChatGPT, Claude, Gemini, Jasper; Image & Video: MidJourney, DALL·E, Runway, Synthesia; Audio: Murf, ElevenLabs; Data & Code: GitHub Copilot, AutoML tools; Prompt engineering and workflow integration.

(AI tools mentioned here are not limited, the concerned faculty can select appropriate tools)

Module 2: Application of GenAI Tools across Business Functions (12 Hours)

Marketing: personalized campaigns, content creation, market research; HR: recruitment, performance appraisal, training & development; Finance: forecasting, risk management, automated reporting; Operations & Supply Chain: process optimization, predictive analytics; Entrepreneurship: product design, prototyping, customer engagement

Module 3: Project Development and Implementation (8 Hours)

Idea generation & design thinking for GenAI applications; Project planning and execution (individual or group projects); Business model canvas for GenAI-based ventures; GenAI in business strategy and value creation, Ethical, legal, and societal considerations

Text and Reference Books

- Marr, B. Generative AI in Practice: 100+ Business Use Cases. Wiley, 2024.
- Kambhampati, S. Generative AI: A Primer. Springer, 2023.
- Haenlein, Kaplan, Tan, & Zhang. Artificial Intelligence, Machine Learning, and Generative AI in Business. Routledge, 2024.
- Hutson, M. Rise of the Generative AI: The Future of Business and Creativity. MIT Press, 2024.

Suggested Projects

- AI-generated marketing campaign for a new product. Marketing Content Pipeline: Campaign brief → personas → multi-format content with brand guardrails and approval workflow.
- AI-driven recruitment strategy using job descriptions and candidate fit. HR Recruiter Assistant: JD generation, screening rubric, interview guide; audit for bias and maintain compliance.
- AI-assisted financial dashboard for forecasting. Finance Analyst Support: Summarize earnings calls/reports; extract KPIs; generate commentary with confidence markers; validate with sources.
- Capstone Project: Each group develops a GenAI-enabled business solution (e.g., AI-powered customer service bot, AI-generated market intelligence report, AI-driven branding toolkit) and presents it with demo + business model.

Data Analysis and Visualization Using Python

Course Code	Course Title	Credits	Type (T+P+Pj)

CUTM2305	Data Analysis and Visualization Using Python	2	0+0+2

Course Rationale:

The course will increase the ability of students to develop visualisation to tell the story.

Course Objectives:

This course intends to develop in students

- How to tell a story from data
- How to marshal the data for storyline
- The ability to develop visualisation to tell the story
- The focus is on analysis of data using visualisation as a tool

Course Outcomes

After completion of the course, the student will be able to do

1. Data processing: Python offers a range of tools for data processing and cleaning, making it easier to prepare data for analysis and visualization.
2. Data visualization: Python provides libraries like Matplotlib, Seaborn, and Plotly that allow for the creation of detailed and visually appealing data visualizations.
3. Data insights: By visualizing data, Python enables the discovery of meaningful patterns, trends, and insights that can inform business decisions and strategy.
4. Advanced analysis: Python's vast ecosystem of libraries and tools allows for advanced data analysis techniques, including predictive modeling and statistical analysis

Course Outcome to Program Outcome Mapping:

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO1	3	3		3									3	3	3
CO2	3	3		3									3	3	3
CO3	3	3		3									3	3	3
CO4	3	3		3									3	3	3
CO5	3	3		3									3	3	3

Course Contents:

Module: I

Story board development: The objective and flow of the story to be understood through cases.

Module: II

Data reading using python functions: Python libraries: Pandas, NumPy, Plotly, Matplotlib, Seaborn, Dash, Data collection from online data sources, Web scrap, data formats such as HTML, CSV, MS Excel, data compilation, arranging and reading data, data munging.

Module: III

Data visualization using python libraries: Different graphs such as Scatterplot, Line chart, Histogram, Bar chart, Bubble chart, Heatmaps etc. Dashboard Basic:Layout, Reporting, Infographics, Interactive components, live updating

References:

https://www.programmer-books.com/wp-content/uploads/2019/04/Python-for-Data-Analysis-2nd-Edition.pdf

https://towardsdatascience.com/data-visualization/home

Reading materials and videos available on internet on how to use ANACONDA, JUPYTER NOTEBOOK and Python Libraries

MANAGEMENT POTENTIAL DEVELOPMENT

Accounting for Managers

Course Code	Course Title	Credits	Type (T+P+P)
CUTM 1199	Accounting for Managers	4	3+0+1

Course Rationale:
This course emphasis on the role, functions and interpretation of accounting require for managers. It will help students in applying the knowledge to work in the corporate environment. This course will expose students to gain knowledge on accounting and its applications of accounting in diriment corporate sectors.

Course Objectives:
- To familiarise with the basic conceptual frame work of Financial Accounting i.e., from recording of transactions for Understanding and Interpreting of Financial Statements.
- To provide the knowledge to the students about financial statements and principles underlying them and to develop their skills in reading Annual Reports.
- To equip students with the skills required to understand cost statements/records and management accounting.

Course Outcomes:
On successful completion of the course, students

1. Will able to do computerised accounting (Use of Tally)
2. Can prepare financial statements for different organisation
3. Will be able to calculate depreciation by using different depreciation methods
4. Will be able to analyse the annual report of a company
5. Can apply cost concepts and management accounting to analyse common business management decisions such as pricing a product or service.

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3		3									3	3	3
CO2	3	3		3									3	3	3

CO3	**3**	**3**		**3**									**3**	**3**	**3**
CO4	**3**	**3**		**3**									**3**	**3**	**3**
CO5	**3**	**3**		**3**									**3**	**3**	**3**

Course Contents:

Module: I

Fundamental Principles of Accounting: Accounting Environment of Business: Purpose of accounting, Links of accounting with every aspect of business, Cash based vs Accrual based accounting, Accounting Cycle, Financial Year, Difference between management accounts and statutory accounts, Concepts and Conventions of Accounting: Accounting as an Information System, Users of Accounting information (specifically the difference in financial information required by the Board, CXO levels, field level staff, stock exchanges, auditors and regulators etc.). Accounting Principles and Standards. Computerised Accounting (Learning to use Tally Package)

Module: II

Accounting Process: Basic Accounting Procedures: Balance Sheets items, P&L items, Accounting Equation, Transactions, Capital & Revenue Expenditure and Receipts, Classification of Accounts and Chart of Accounts (relevance to reporting)**,** The Accounting Process: The Journal, the Ledger, and the Trial Balance**,** Depreciation: Meaning Causes, Factors affecting depreciation, Methods of providing depreciation, Straight Line Method & Diminishing Balance Method**,** Inventory Valuation: Introduction, Determination of Cost, Valuation of Inventories (FIFO, LIFO, and Average Method)

Module: III

Understanding and Interpreting Financial Statements: Financial Statements: Purpose, Minimum content and information, Vertical and Horizontal Financial Statement, Trading and Profit and Loss Account, Balance Sheet, and Cash Flow Statement, Content of Annual Report.

Module: IV

Introduction to Cost and Management Accounting: Difference from financial accounting and reporting, concept of overheads and allocation principles, reconciling management and financial accounts, Classification of Costs; Cost Unit, Cost Centres, Preparation of Cost Sheet**,** Marginal Costing: Marginal Cost and BEP Analysis.

Text Book:

- Financial Accounting, A Managerial Perspective, R. Narayanswamy, PHI

Reference books:

- Accounting for Management, Ashok Sehegal, Taxxman
- Horngreen, Datar, Foster, Cost Accounting, Pearson

Marketing Management

Marketing Management (70 hours)

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM1200	Marketing Management	4	3+0+1

Introduction

This course is designed to provide advanced insights into the strategic and managerial aspects of marketing. The course delves into the principles of creating, communicating, and delivering value to customers while achieving organizational goals. Through a mix of theoretical learning and real-world applications, students will develop a deeper understanding of how marketing strategies influence business outcomes in a dynamic global environment.

Course Objectives

- To equip students with advanced marketing principles and their applications in complex business scenarios.
- To develop skills in analyzing market opportunities and designing customer-centric marketing strategies.
- To enable students to create and execute marketing plans for achieving sustainable competitive advantages.

Course Outcomes

By the end of this course, students will be able to:

- Evaluate complex market environments and consumer behavior trends.
- Develop integrated marketing strategies that align with business objectives.
- Apply digital and traditional marketing tools to optimize customer engagement.
- Apply data analytics to measure and improve marketing performance.
- Develop and present comprehensive marketing projects with strategic insights.

Course Outcome to Program Outcome Mapping

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	2	1	1	1	1	2		1	2	1	3	2	1
CO2	3	3	1	2	2					2		1	3	3	3
CO3	3	3	3	3		2		3	1	1	3	1	3	3	3

CO4	3	3	3	3	1	2		3	1	1	3	1	3	3	3
CO5	3	3	3	3		2	1	3	1	1	3	1	3	3	3

***High-3, Medium-2, Low-1**

Course Details

Module 1: Introduction to marketing (12 Hours)

Definition, functions, nature and scope of marketing, Evolution of Marketing, core concepts of marketing, Marketing orientation and the customer value framework. Key customer markets, market places, marketing myopia, market spaces, Digital Markets, Brick & Click Model. Understanding Marketing Environment: Factors affecting marketing environment (PESTEL) and SWOT frameworks, Competition, Porter's five force model, Market intelligence system, Introduction to market research, Market research and forecasting, Elementary idea of the marketing mix. Strategic marketing planning process.

Module 2: Segmentation, Targeting and positioning (10 Hours)

What is market segmentation? Criteria for effective segmentation, Market Potential & Market Share. Target Market - Concept of Target Markets and criteria for selection, Segment Marketing, Niche & Local, Marketing, Mass marketing, Long Tail Marketing. Positioning - Concept of, differentiation & positioning, Value Proposition& Unique Selling Proposition., Effective positioning strategies, repositioning and positioning errors.

Module 3: Product and Price Strategies (10 Hours)

Product concept, Classification of products (Consumer and Industrial), Product life cycle (PLC), Branding and branding strategies, brand equity. New Product Development - Need, Booz Allen & Hamilton classification Scheme for New Products, New Product Development Process - Idea Generation to commercialization., Pricing: Meaning and role, Setting pricing objectives, Methods of setting price, Dynamic pricing (surge pricing, auction pricing), Pricing in online marketing (free, premium, freemium), Consumer Behavior: Role of consumers, Consumer decision making process, Post purchase behavior.

Module 4: Place and Promotion Strategies (10 Hours)

Place: Marketing channels, Channel conflict management, Basics of SCM, Channel Options: Wholesaling, Retailing, Direct Marketing, E-Commerce, Introduction to Omni channel & hybrid channel options, B2C Electronic Retailing (E-Tailing), Characteristics, Advantages, Limitations. Promotion: What is promotion, types of promotion, advertising, sales promotion, Personal Selling, Public Relations, Direct Marketing. Integrated Marketing Communication, Social Media Marketing, Search engine optimization (SEO), Pay-per-Click (PPC) Advertising.

Text and Reference Books

- Marketing Management, Philip Kotler, Kevin Lane Keller, Abraham Koshy & Mithileshwar Jha, Pearson
- Marketing, Lamb, Hair, Sharma & Mc Daniel, Cengage Learning

- Kotler, P., Keller, K. L., Marketing Management, Pearson.
- Armstrong, G., Kotler, P., Principles of Marketing, Pearson.
- Aaker, D. A., Strategic Market Management, Wiley.
- Chaffey, D., Ellis-Chadwick, F., Digital Marketing: Strategy, Implementation and Practice, Pearson.
- Ries, A., Trout, J., Positioning: The Battle for Your Mind, McGraw-Hill.
- Day, G. S., Market Driven Strategy: Processes for Creating Value, Free Press.

Suggested Activities and Project (28 hours)

- Case Studies: Analyze marketing strategies of local, national and multinational companies.
- Marketing Simulation: Participate in an online simulation to manage a virtual company's marketing strategy.
- Field Research: Conduct primary research on customer preferences and competitor analysis.
- Final Project: Develop and present a strategic marketing plan addressing a real-world business problem. Students will work in teams to develop a strategic marketing plan for a real or hypothetical business. This includes conducting a comprehensive market analysis, defining the STP strategy, and presenting actionable recommendations for the marketing mix.

Organizational Behaviour and Structure

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM1201	Organizational Behaviour and Structure	4	3+0+1

Course Rationale:
This course focuses on the behavioural aspects of individuals, groups, and structure in an organization. It will help students in applying the knowledge at work front to enhance performance and make organizations work more effectively. This course will expose students to gain knowledge on the diversified behavioural science theories and their applications in organizations.

Course Objectives:

• To make aware about the perceptual process and errors therein for better managerial judgment

• To acquaint the participants with the personality dimensions that influences the work life

• To develop an understanding of the complexities involved in motivation at workplace

- To develop interpersonal competencies, teamwork skills and leadership potential.
- To make students understand the modern variant of organizational structure and culture

Course Outcomes:

After completion of the course students will be able to

- analyse a business situation from the perspective of individual behaviour
- apply organizational behavioural theories/models to reflect critically on specific business context
- manage conflicts and demonstrate leadership skills required for working in groups in organizations
- motivate the employees and handle stress for well being
- develop appropriate structure and imbibe to transformational culture

Course Outcome to Program Outcome Mapping:

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO1	3	3		3									3	3	3
CO2	3	3		3									3	3	3
CO3	3	3		3									3	3	3
CO4	3	3		3									3	3	3
CO5	3	3		3									3	3	3

Course Contents:

Module: I

Introduction: Concepts and contours of OB, Diversity in Organizations, models & approaches in OB, OB System: Formal Organization System (FOS), (Individual System) & Social System (SS)

Module: II
Individual System: Personality and organizational requirement, perception and perceptual distortions, emotion and emotional intelligence at work place, behavioural modification through learning process, motivation and employee performance, relevance of attitudes and values, individual well-being and managing stress

Module: III
Social System: Group dynamics, group decision making process and team effectiveness, interpersonal conflict and conflict management techniques, leadership in organizations

Module: IV
Organizational Systems: Industry 4.0, Organizations of 21st Century - types, characteristics, culture and structure; organizational learning, organizational transformation (case studies of Indian Organizations)

Text Book:
- Organizational Behavior, 18th Edition, Stephen P. Robbins, Timothy A. Judge, and Neharika Vohra, Pearson.

Reference Books:
- Organizational Behaviour, 10e, Fred Luthans, Tata McGraw Hill Publication, 2010
- Organizational Behaviour, 4e, Steven McShane, Mary Von Glinow, Tata McGraw Hill, 2008
- Understanding Organizational Behaviour, 3e, Udai Narain Pareek, Oxford University Press, 2004
- Organisational Behaviour, 1st Edition, P S James, Pearson, 2017.

Talent Acquisition and Development

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM1202	Talent Acquisition and Development	4	2+0+2

Course Rationale:
The course will familiarize the students about the job skills required by the future workforce and managing the human capital effectively

- Course Objectives:
- Toacquaintthe student about Human Resource Management in an organization.
- To provide theoretical knowledge and required practical skills in the area of HRM.
- Orient the learners with the changing scenario of HRM
- To develop the skills for appreciating and meeting the HR requirements for an emerging organisation.

Course Outcomes:

After completion of the course students will be able to

- Carry out recruitment and selection process in an organization
- Assign appropriate jobs/ tasks to individual personnel and teams
- Initiate appropriate human resource development process
- Develop compensation and reward system and performance management
- Manage legally Compliant HR for a Healthy Work Environment

Course Outcome to Program Outcome Mapping:

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO1	3	3		3									3	3	3
CO2	3	3		3									3	3	3
CO3	3	3		3									3	3	3
CO4	3	3		3									3	3	3
CO5	3	3		3									3	3	3

Course Contents:

Module: I

HRM- Why Businesses need it?

HRM - Definition, Importance and Objectives, Scope and Functions of HRM, The Changing environment of HRM, Transitions from the personal manager to the new age HR manager. Role & Functions of HR Manager in 21st Century. HRM issues in Indian Organizations, Aligning HR with Business Strategy, Measuring HR Contribution.

Module 2: Designing Jobs and Resourcing People

Job Design,Human Resource Planning, Scouting and managing talent in organization, Recruitment and Selection, Induction and Orientation, Exit.

Module 3: Human Resource Development and Rewards Management

Performance assessment, Learning and Development, Management Development. The elements of reward management.

Module-4: Ensuring a Legally Compliant HR for a Healthy Work Environment and Effective Employee relationship

Managing Employee Separations (Voluntary and Non Voluntary), Labour-Management Relations, Trade Unions, Collective Bargaining, Disciplinary and Grievance Procedure,

Text Books:
- Gary Dazzler- Human Resource Management
- Dr. S. S. Khanka- Human Resource Management-2018

Reference Books:
- E.B. Flippo-Personnel Management
- C.B. Mamoria - Personnel Management
- C.S. Venkata Ratnam & B. K. Srivastava - Personnel Management Human Resources
- R. Armstrong- Human Resources Management
- Fisher Schenfeldt & Shaw - Human Resource Management

Marketing Research (84 hours)

Course Code	Course Title	Credits	Type (T+P+Pj)
MGGM1207	Marketing Research	4	2+0+2

Course Objectives:

- To enable the learners, interpret marketing research output and make managerial decisions out of marketing research outcomes.
- To enable the learners, implement the marketing research tools in summer internship program and generate a SIP report which can be used effectively for managerial decisions.
- To enable the learners to be self sufficient in doing marketing research projects.

Course Outcomes:

After the completion of the course students will be able to:

- **CO1:** slot a customer problem into a research problem and effectively make a choice on what type of marketing research insights are required for resolving this research problem like U&A, industry analysis or online database etc.
- **CO2:** understand the marketing research reports and their implications in managerial decisions.

- **CO3:** know how to implement marketing research tools specifically in SIP.
- **CO4:** independently do a SIP or master's dissertation.
- **CO5:** use digital platforms for conducting marketing research.

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2		2		2	1		3	2	2	3	3	2	
CO2	2	3		3		3	1		2	3	3	2	2	3	
CO3	3	2		2		2	1		3	2	2	3	3	2	
CO4	2	3		3		3	1		2	3	3	2	2	3	
CO5	3	2		2		2	1		3	2	2	3	3	2	

***High-3, Medium-2, Low-1**

Course Syllabus:

Module 1: Introduction to Marketing Research (07 hours)

Theory

- Definition, classification and nature of MR, MR suppliers and services, careers in MR, ethics in MR, role of MR in MIS and DSS.
- Marketing research process: steps in MR, defining the MR problem, research design, sample design, research brief.
- Data collection: sources of secondary data, methods of primary data collection.

Project (14 Hours)

- Thrust Area for Project Session: Marketing Research Project in a Production Unit at campus

Module 2: Research Methods (07 hours)

Theory

- Tools of MR: Measurement and scaling, preparation of questionnaire, schedules, discussion guidelines, the role of data and databases.
- Research Methods: qualitative vs. quantitative research methods, selection of appropriate method in usage and attitude studies, industrial research and social researches.

Project (14 Hours)

- Thrust Area for Project Session: Marketing Research Project in a Production Unit at campus

Module 3: Data Analysis (07 hours)

Theory

- Data analysis (using Excel and SPSS): data entry, editing, coding, cleaning, crosstabs.
- Quantitative techniques: Interpreting results of reliability analysis, descriptive analysis, inferential analysis, chi-square test, ANOVA (one way and two way), t-Test, Z-Test, correlation and covariance, simple and multiple regression analysis.
- Qualitative techniques: Interpreting results of content analysis.

Project (14 Hours)

- Thrust Area for Project Session: Marketing Research Project in a Production Unit at campus

Module 4: Advanced MR (07 hours)

Theory

- Multivariate Analysis (using SPSS): Interpreting results of factor analysis, cluster analysis
- Digital MR: Sources of electronic MR reports, Interpreting e-MR reports and Google Analytics
- Presenting findings and conclusion: Report preparation and presentation process, report format, report writing, guidelines for table and graph, oral presentation.

Project (14 Hours)

- Thrust Area for Project Session: Marketing Research Project in a Production Unit at campus

Corporate Finance

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM1204	Corporate Finance	4	3+0+1

Course Rationale:
This gives a global background to the course and hence thorough understanding of the whole financial system. The companies have to work in a global environment and hence study of the said factors is important. The entire study program is designed in such a manner that step by step, starting from the basics of corporate finance along with changes in the international finance system.

Course Objectives:

- Developing skills for preparing and interpreting business information apart from applying financial theory in investment decisions, with particular emphasis on capital structure, Capital Budgeting, and other concepts.

- To understand the concept of the time value of money and its use in corporations.
- To analyze the techniques of capital budgeting used for decision-making.
- To understand the concept of working capital management

Course Outcome:

After the completion of the course students will be able to:

- Demonstrates an understanding of the financial skills to raise and utilise funds for future management decision-making.
- Analyse various techniques of TVM and capital budgeting for investment decision-making.
- Attain expertise in assessing the factors that influence a company's choice of capital structure, including risk, taxes, financial flexibility, and market conditions.
- Evaluate the working capital required for the day-to-day operations of an organization and frame the policy for the optimum working capital requirement.
- Analyze the business with the theories of financial management for framing optimum capital structure, distribution of profit, and managing the working capital.

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3		3									3	3	3
CO2	3	3		3									3	3	3
CO3	3	3		3									3	3	3
CO4	3	3		3									3	3	3
CO5	3	3		3									3	3	3

Course Contents:

Module: I

Scope of Financial Management; Objectives of Financial Management, Role of Finance manager, Time Value of Money, Conceptual Framework of Risk and Return.

Module: II

Rrelevant costs, depreciation, inflation,Nature of Capital Budgeting, identifying Relevant Cash Flows, Investment Evaluation Techniques: DCF and Non-DCF Techniques, NPV vs. IRR, Importance and concept of cost of capital, Cost of debt, Cost of Preference share, Cost of Equity, Overall WACC.

Module: III

Capital Structure Theories concept, NI Approach, NOI approach, MM approach, Operating, Financial and Combined Leverage

Module: IV

Concept of Dividend, Cash dividend and Bonus Share, Share repurchase and stock spilt, Irrelevance of Dividends; and Relevance of Dividends, Concept of Working Capital

Text book:

- Dr Prasanna Chandra – Tata Mc Graw-Hill

Reference Books:
- I M Pandey –Tata McGraw-Hill
- Brealey and Meyers: Principles of Corporate Finance: Tata McGraw Hill, New Delhi, 2008.
- Keown, Martin, Petty and Scott (Jr): Financial Management: Principles and Applications; Prentice Hall of India, New Delhi, 2002.

Production & Operations Management

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM1205	Production and Operation Management	3	2+1+0

Course Rationale:
This course is intended to develop understanding of management students about the production and operation designs adopted in modern industry. It also emphasises on quality management practices adopted in manufacturing industries.

Course objectives:

- Understand Manufacturing 4.0 and appreciate technology integration in smart production
- Understand the various production and operations design decisions and how they relate to the overall strategies of organizations.
- Understand the importance of product and service design decisions and its impact other design decisions and operations.
- Obtain an understanding of quality management practice in organizations and how total quality management and six-sigma facilitate organizational effectiveness.
- Understand the roles of inventories and basics of managing inventories in various demand settings.

Course Outcomes:

CO1: Comprehend the basic concepts of Manufacturing Operations Management (MOM) and Manufacturing Execution System (MES) in the context of Industry 4.0.

CO2: Construct Network, Prepare Gantt Chart and Process Map

CO3: Calculate Economic Order Quantity (EOQ) for inventory management.

CO4: Analyse the Market Dynamics and Customer Insights though a project

CO5: Will be able to understand the Production process and work as Production Manager

Course Outcome to Program Outcome Mapping:

COs \ POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1			3							3	3	3
CO2	3									3	3	3
CO3		3	3							3	3	3
CO4		3								3	3	3
CO5	3									3	3	3

Course outlines:

Module: I

Manufacturing Operations Management - The Smart Backbone of Industry 4.0: Introduction, **B**asic concepts of Manufacturing Operations Management(MOM)/ Manufacturing Execution System(MES) for Industry 4.0, Smart manufacturing;The roots of smart manufacturing, Pillars of smart manufacturing; Pillar 1: Manufacturing technology and processes, Pillar 2:Materials, Pillar 3: Data, Pillar 4: Predictive engineering, Pillar 5: Sustainability, Pillar 6: Resource sharing and networking,, Challenges and trends in OM; Process structure in services & manufacturing; Strategic fit, Process tools, Strategies for change: Process improvement

Module: II

Process Analysis: key elements of process analysis: flow rates, and flow times, uncover bottlenecks, optimize labour and inventory, and complexities of multiple flow units.InventoryManagement**;**Purpose of Inventories, Costs of Inventories, Independent versus Dependent Demand, Economic Order Quantity, Continuous Review System, Periodic Review System, Using P and Q System in Practice, ABC Inventory Management, Betting on the Uncertain Demand. Service Levels and Lead Times; Newsvendor Model

Module: III

Quality: quality in operations, from examining the common reasons for defects to the most widely used implementation techniques for addressing problems of quality and ensuring reliability and standards. sound strategy for maintaining quality and stability.

Module: IV

Service Management: Queues Effect of Randomness on Process Performance. Waiting Line Problems. Effect of Randomness on Thruput. Thruput Loss due to Impatience / Limited Buffers.

Texts Books:

- OM by Chase, Jacobs, Aquilano, Agarwal
- Krajewski, Ritzman, Malhotra- Operations Management, Pearson
- Gaither, Frazier, Operations Management, CENAGE

References Books:

- 1. Roberta S. Russell & Bernard W. Taylor III, - “Operations Management”, Pearson/ PHI- (PPT)
- 2. Everette. Adam Jr., Ronald J. Ebert, - “Production and Operations Management”, PHI
- 3. B.MAHADEVAN, “OPERATIONS MANGEMENT” FOR CASELETS

Project Management

Project Management (56 hours)

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM1013	Project Management	3	2+0+1

Course Objective:

The objectives of the course are

- Develop and implement all project procedures.
- Learn project management methodology to initiate and manage projects efficiently and effectively
- Acquire key project management skills and strategies for productive guidance, efficient communication, and supervision of the project’s team

Achieve the project’s main goal within the given constraints

Course Outcomes:

After completion of the course, students will be able to:

CO1: Acquire 10 knowledge area identified by PMI and its application while working on a real project.
CO2: Apply managerial skill to procure a project, plan, schedule, hire and allocate resource and deliver a project
CO3: Will build soft skill to lead and comply and communicate with all stakeholders' expectation
CO4: Will be able to prepare a WBS structure
CO5: Able to prepare a DPR

Course Outcome to Program Outcome Mapping:

Course Outcomes (CO)	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	3	2	1	2	2	2	1	2	2
CO2	3	3	2	2	3	2	3	2	2	1	2	2
CO3	2	2	3	2	2	3	3	2	2	3	2	2
CO4	3	2	2	2	2	1	2	2	2	1	2	1
CO5	3	3	2	3	3	2	2	2	2	1	2	2

Course Contents

Module: I

Project Management framework; Introduction to Project Management: Project Life Cycle and Organisation, Project vs. Operational work, Stakeholders, Organisational Influences Project Management Process for a Project, groups, Initiating, planning, executing, monitoring &controlling and closing process groups**.,** Project management Knowledge area; Project Integration Management; Develop project charter, develop project management plan, direct and manage project execution, monitor and control project work, perform integrated change control, close project or phase.

Module: II

Project Scope Management: collect requirements, define scope, create WBS, verify scope, control scope, Project Time Management; Define activities, sequence activities, estimate, develop and schedule, Project Cost Management; Estimate costs, determine budget, control costs

Module: III

Project Quality Management: Plan quality, perform quality assurance, perform quality control**,** Project HR Management; Develop HR plan, acquire project team, develop and manage project team, Project Communications Management; Identify stakeholders, plan communication, distribute information, manage expectation of stake holders, report performance.

Module: IV

Project Risk Management; Plan risks: identify risks, perform quality and quantitative risk analysis, plan risk responses, monitor and control risks, Project Procurement Management; Plan procurements, conduct procurements, administer procurements, close procurements, Project Stakeholders Management**;** Identifying stakeholders, stakeholder analysis, engagement.

Text Books:

- Project Management: A Managerial Process, Clifford F Gray & Eric W Larson, Tata McGrawHill
- A Guide to the Project Management Body of Knowledge, 6th Edition, PMI
- Project Management- A system Approach to Planning, Scheduling and Controlling (Harold Kerzner). CBS Publishers and Distributers, New Delhi.

Reference Books:

- Projects, Preparation, Appraisal and Implementation (Prasanna Chandra), 3rd Edition, Tata Mc Graw Hill, New Delhi.
- Project Management (Nagarajan, K), New Age Publishers, New Delhi.
- Project Management. A Managerial Approach (Meredith, R.J and Mantel, S.J), Wiley (India).

Introduction to PLM (Platforms such as 3DS)

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM1206	Introduction to PLM(Platforms such as 3DS)	3	1+1+0

Course Rationale:

This course will develop knowledge to manage Product Life Cycle using Enovia

Course Objectives

- Learn product life cycle management methodology to initiate and manage projects efficiently and effectively
- To learn and understand the actual industry work culture for product development program through gate process.

Course Outcomes

After completion of the course, students will be able to do :

1. Planning and organization: PLCM provides a structured approach to project planning, ensuring that all aspects of the project are considered and properly organized.

2. Better risk management: PLCM helps to identify and mitigate potential risks before they become significant issues, leading to a more successful project outcome.
3. Increased efficiency: By establishing a clear project plan and timeline, PLCM helps to ensure that resources are used effectively and efficiently, reducing waste and maximizing results
4. Improved project delivery: PLCM helps to ensure that projects are completed on time, within budget, and to the desired quality standards, leading to improved project delivery and customer satisfaction.

Course Outcome to Program Outcome Mapping:

Course Outcomes (CO)	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	2	2	3	2	1	2	2	2	1	2	2
CO2	3	3	2	2	3	2	3	2	2	1	2	2
CO3	2	2	3	2	2	3	3	2	2	3	2	2
CO4	3	2	2	2	2	1	2	2	2	1	2	1
CO5	3	3	2	3	3	2	2	2	2	1	2	2

Course Syllabus

Module 1:

Product planning and programs: Identifying potential issues and risk in projects and driving the project deliverables, updating status. Global Product Development: Defining conceptual product definitions, satisfying market specifications, possible optional

capabilities, frame work for defining variant products, configurable products, Finalizing the product specification and preparing a project plan (Gate 0)

Module 2:

Global Design Management: Supporting the product development process by giving early visibility to design information and allowing the enterprise to collaborate before final product decisions are made. Design Parameter Optimization and simulation of system and subsystem of the product using system Engineering Final functional and logical design of integrated product in system engineering with simulation (Gate 1)

Module 3:

Global engineering Manufacturing and support management: Enabling bill of material management across the product life cycle from design to manufacturing , Developing product model for validation and digital manufacturing certification (Gate 2)

Module 4:

Quality and Compliance Management: Extending compliance data to a broader audience, allowing for more effective decisions and awareness. IP Classification and Protection: Leveraging product information from other enterprise system by federating their IP into the context of product development business process(Gate 3)Strategic customer relationship management, Strategic Supplier Relationship. Regulatory Certification, BOM and Production planning and Vendors development and Launching preparation(Gate 4)

Note: Students will use the ENOVIA software of Dassault Systemes for their project.

Supply Chain Management

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM1208	Supply Chain Management	2	1+0+1

Course Rationale:

Students will learn cross-functional approaches to supply chain management, including marketing, sales, research & development, finance and accounting, manufacturing/operations, and information technology

Course Objectives

- Creating awareness on the desirability of supply chain management (SCM) concepts for the Indian Industry.

- Understand the integration of the physical (material flow) and virtual (information flow) value chain across multiple organizations will be highlighted.

- Learn cross-functional approaches to supply chain management, including marketing, sales, research & development, finance and accounting, manufacturing/operations, and information technology.

Course Outcomes

CO1: Students will be able to articulate the significance of SCM in the Indian industrial context, recognizing its potential benefits for organizational efficiency.
CO2: Students will demonstrate an understanding of the seamless integration of material and information flows within the value chain, identifying opportunities for optimization.
CO3: Students will showcase proficiency in cross-functional collaboration, applying SCM principles across diverse organizational functions.
CO4: Students will effectively integrate the physical and virtual aspects of the value chain, contributing to streamlined operations and improved decision-making.
CO5: Students will apply cross-functional approaches to SCM, demonstrating the ability to align marketing, sales, R&D, finance, operations, and IT functions for comprehensive supply chain management.

Course Outcome to Program Outcome Mapping:

Course Outcomes (CO)	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	2	2	3	2	1	2	2	2	1	2	2
CO2	3	3	2	2	3	2	3	2	2	1	2	2
CO3	2	2	3	2	2	3	3	2	2	3	2	2
CO4	3	2	2	2	2	1	2	2	2	1	2	1
CO5	3	3	2	3	3	2	2	2	2	1	2	2

Course Contents:

Module: I

Overview of supply chain management, objectives of a supply chain and the decision phases in a supply chain, the process views of a supply chain, nature and scope of supply chain management, model of supply chain management, Logistics, warehousing and Expediting, Logistics and SCM Relationship, Importance of Logistics/supply chain management. Drivers of supply chain performance, A framework for structuring drivers,

Facilities, Inventory, Transportation, Information, Sourcing, Pricing, Obstacles to achieving fit., Supply Chain Network Analysis and Design**;** evaluate the structure and functions of logistics/supply chain networks, factors that may lead to redesign of a logistics/supply chain network, different types of modeling approaches that may be used to gain insight into logistics/supply chain network design and facility location decision making, "grid" or center-of-gravity approach to facility location.

Module: II

Strategic Challenges and Change for Supply Chains, current and future strategic challenges for supply chains Linking to corporate strategies, principles for supply chain success, how supply chain management can help to grow revenues, as well as contain costs, types of supply chain strategies: differentiation, financial, technology-based, relationship-based, and global, supply chain transformation and some of the steps that are important to accomplish this objective, Role of transportation in a supply chain, characteristics of transportation modes and carrier selection, transportation infrastructure, service and cost characteristics of the primary transportation modes, various transportation strategies, information technology supports transportation planning and execution

Module: III

Sourcing materials and services in supply chain; role and nature of purchasing, procurement, and strategic sourcing in a supply chain context, principles and approaches for the effective management of sourcing and procurement activities, effective relationships with suppliers and understand the value of supplier organizations having certain certifications and registrations, contemporary advances in the areas of e-sourcing and e-procurement, Demand Forecasting and Managing Variability in a Supply Chain; Role of forecasting in a supply chain, Components of a demand forecast, Demand forecasting using historical data, Analysing forecast errors, Managing demand/supply in a supply chain

Module: IV

Supply Chain Performance Measurement and Financial Analysis; the scope and importance of supply chain performance measurement, characteristics of good performance measures, various methods used to measure supply chain costs, service, profit, and revenue. impacts of supply chain strategies on the income statement, balance sheet, profitability, and return on investment., strategic profit model, financial impacts of supply chain service failures, Role of Technology in SCM**;** importance of information to supply chain management, role of information technology in the supply chain, key components of an integrated supply chain information system, critical issues in technology selection and implementation processes, role of emerging technologies for improving supply chain information management, E-SCM**;** Aims and Benefits, Activities and processes, Infrastructure, Strategies, Tools and Technologies, e-commerce, Online store (B2C).

Text Books:

- Supply Chain Management – N Chandrasekharan(Text)
- Supply Chain Management - Chopra • Meindl (Text)

Reference Books:

- Supply Chain Management - K Shridhar Bhatt

- Supply Chain Management for competitive Advantages –Rajaram

SUSTAINABILITY

Gender, Human Rights and Ethics

Course Code	Course Title	Credits	Type (T+P+Pj)
CUVA4060	Gender, Human Rights and Ethics	3	3+0+0

Course Objectives:

This course is about gender, human rights, and ethics in which the student will be sensitized and exposed to related issues in the context of business and organizations in India. The specific objectives are:

- To develop an understanding of gender, human rights, and ethics in an unequal society like India
- Sensitization of how gender, human rights, and ethics are significant in organizations.
- Integrating concerns related to gender, human rights, and ethics in organizations.

Course Outcomes:

CO1: Students will analyse the differences between sex and gender, the social construction of gender, and its outcomes, including gender roles, labour division, and power hierarchies.

CO2: Students will evaluate gender implications in workplace practices, management, and leadership

CO3: Will gain an understanding of human rights concepts, types, and their relevance in organizations. They will explore international human rights laws, the Universal Declaration of Human Rights, and organizational challenges related to social discrimination and inequality.

CO4: Develop knowledge of Indian and Western ethical systems, including utilitarianism, duty ethics, virtue ethics, and ethical relativism.

CO5: Investigate the persistence of social discrimination, efforts to address past violations, and the ongoing struggle for justice and accountability.

Course Outcome to Program Outcome Mapping:

CO/PO	PO-01	PO-02	PO-03	PO-04	PO-05	PO-06	PO-07	PO-08	PO-09	PO-10	PO-11	PO-12
CO1	3	3	2	2	2	3	2	1	2	3	1	2
CO2	3	3	2	2	2	3	3	2	2	2	1	2
CO3	3	3	2	3	2	3	2	1	2	3	2	2
CO4	3	2	2	3	2	3	1	1	2	1	2	2
CO5	3	3	2	3	2	3	2	2	2	2	1	2

Course Contents:

Module: I

Difference between sex and gender; social construction of gender and its outcomes in the form of behavior, roles, gender based division of labour, hierarchy; gender relations. Gender issues in organisations - significance of relations between structures, practices, context, interactions, and power for construction of gender at organisational level Gender implications at workplace, management and leadership, Laws and Acts Comparing different types of organisations; how to create a gender sensitive organisation.

Module: II

Introduction to human rights, Meaning and Definition, Types Human Rights Law: Protection, violation and the legal framework for their protection - International Human Rights Law, Universal Declaration of Human Rights Conflicts of Rights and its Significance to Organisations: Challenges of the past and challenges for the future. Persistence of social discrimination and inequality; efforts in the search for justice for past violations, continued struggle for human rights and accountability in an organisational context.

Module: III

Introduction to and study of ethics; Indian and Western ethics. Different ethical systems and perspectives; ethical relativism and its implications, utilitarianism, duty ethics and virtue ethics in organisations. Critique of various ethical positions and develop their own position in an organizational context.

References

- "Why Gender is a Development Issue", Handout 4, Oxfam Gender Training Manual (1994)
- Freedman, Jane. (2002), "Introduction: Feminism or Feminisms?" in *Feminism*, Viva Books, N. Delhi.
- Chafetz, J.S. (1990), "The Coercive Bases of Gender Inequality", in *Gender Equity: An Integrated Theory of Stability and Change*, Sage.

Climate Change, Sustainability and Organisation

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM1015	Climate Change, Sustainability and Organisation	3	1.5+0+1.5

Course Rationale:

This course will develop an understanding about climate change in general, responses and debates. It will create awareness about the impact of climate change on organisations in performance, growth and sustainability.

Course Objectives:

- To develop an understanding about climate change in general, responses and debates
- To create awareness about the impact of climate change on organisations in performance, growth and sustainability
- To facilitate in developing reference points to factor in aspects of climate change in organizational planning and development
- To develop an understanding of technology, climate, sustainable development, SDGs and their relevance for sustainability of organisations
- To comprehend the application of the Integrated Reporting Framework for Sustainability in business.

Course Outcomes:

CO1: Develop foundational knowledge of climate change, its impacts on various sectors such as agriculture, forestry, transportation, energy, and manufacturing, and its broader implications, including migration, disasters, and pandemics.

CO2: Evaluate the sustainability challenges and opportunities presented by climate change for business organizations**.**

CO3: Examine the concept of sustainable development, including debates around it and the importance of SDGs.

CO4: Gain knowledge of the regulatory environment, international policies, and frameworks such as Integrated Reporting for Sustainability.

CO5: Explore sustainable production and consumption practices, the role of technology in sustainability, and strategic communication and marketing for promoting sustainability.

Course Outcome to Program Outcome Mapping:

CO/PO	PO-01	PO-02	PO-03	PO-04	PO-05	PO-06	PO-07	PO-08	PO-09	PO-10	PO-11	PO-12

CO1	3	3	2	3	2	3	2	1	2	3	1	3
CO2	3	3	2	2	3	3	2	2	3	2	1	3
CO3	3	3	2	3	3	3	1	2	2	3	1	3
CO4	3	2	2	3	2	3	1	2	2	2	2	3
CO5	3	3	2	3	3	3	2	2	2	3	2	3

***High-3, Medium-2, Low-1**

Course Contents:

Module: I
Basics of climate change; impacts on various sectors; responses and mitigation efforts by the state and non-state agencies; debates and critiques, Sectoral implications of climate change: Agriculture and Forestry; Transportation; Buildings; Energy; Industry and Manufacturing, Climate change: specific impacts (Migration, Disasters and Pandemics), Mitigation and adaptation keeping the sustainability of business organisations

Module: II
Sustainable development, debates, SDGs, challenges and opportunities; Corporate Social Responsibility (CSR) and ESG frameworks; Green innovation and circular economy models; Integrated Reporting Framework for Sustainability; Production and consumption; Public-private partnerships in climate action; Climate tech startups and green entrepreneurship.

Module: III
Technology for climate action: Digital technologies in climate mitigation and adaptation-SDG dashboard (http://worldbank.sdgsdashboard.org/home; https://sdgindiaindex.niti.gov.in/#/), NITI Aayog (https://iced.niti.gov.in/), TERI (https://www.teriin.org/documents), IMD (https://mausam.imd.gov.in/); Remote sensing and GIS for environmental monitoring; Clean and renewable energy innovations: Solar, wind, bioenergy.

Book Recommended

1. Environmental and Social Impact Assessment" by M. P. Sharma
2. Climate Change and India: A 4x4 Assessment" by R. S. P. Singh, I. S. Awasthi, and S. K. Sharma
3. India's Climate Change Strategy" by Kirit S. Parikh
4. Climate Change, Sustainable Development and Human Security" by M. J. Khan
5. Sustainable Development: Indian Context" by R. P. Mishra
6. Corporate Social Responsibility in India" by D. P. Goyal
7. Environmental Sustainability: A Challenge to Indian Business" by R. K. Gupta

DOMAIN COURSES

Finance Elective

Advanced Managerial Accounting

Course Code	Course Title	Credits	Type (T+P+P)
CUFM2350	Advanced Managerial Accounting	4	3+0+1

Course Rationale:
Advent of new business models and a rapid evolution of new businesses driven by factors such as digital technologies requires finance managers/leaders to adapt the financial information for it to remain relevant (over and beyond what is mandated by the regulators and markets) for the business leaders. This course builds a strong foundation in managerial accounting as well as exposes the students to the emerging concepts/metrics relevant for new age businesses.

Course Objectives:
- To equip the students with various concepts, tools and techniques Cost and Management accounting.
- To provide thorough understanding and techniques of financial statements analysis.
- To provide an understanding of methods of cost accounting and its relevance in management decision making.

Course Outcomes:

On successful completion of this course, students will be able to:
- Critically analyze and improve the operations of organisations through the application of management accounting techniques;
- Read, interpret and analyze financial statements; combine financial analysis with other information to assess the financial performance and position of a company;
- Interpret and analyze the financial statements by using the techniques of financial statement analysis for managerial decision-making;
- Apply relevant costing methods to analyze specific business issues.
- Develop (plan and forecast) budgets for difference business.

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3			3				3			3	3	3
CO2	3	3	3			3				3			3	3	3
CO3	3	3	3			3				3			3	3	3
CO4	3	3	3			3				3			3	3	3
CO5	3	3	3			3				3			3	3	3

Course Syllabus

Module: I Concept of Management Accounting

Concept; Tools of Management Accounting; Difference between Financial Accounting, Cost Accounting & Management Accounting, and their Scopes; Role of Management Accountant in Decision Making

Module: II Financial Performance Analysis

Corporate Financial Statements: Income Statement and Balance Sheet, concepts of triple balance sheet and The integrated report framework

Financial Statement Analysis: Common Size Statements, Comparative Analysis, Trend Analysis, Financial Ratio Analysis, Inter-firm and intra-firm comparison.

Module: III Standard Costing and CVP Analysis

Standard Costing and Variance analysis: Concept of Standard Cost and Standard Costing, Types of Variance (Material Variance and Labour Variance); Activity Based Costing

CVP Analysis and CVP Application in decision making;

Module: IV Budgetary Control

Budget, Budgeting, Classification of Budget: Cash Budget, Fixed Budget and Flexible Budget, Zero-Base Budgeting, Responsibility Accounting;

Books Recommended:

1.Horngren, Foster & Dater - Cost Accounting: A Managerial Emphasis (Pearson)
2.M.N. Arora – Cost and Management Accounting Theory and Problems Vikash
3.Khan and Jain- Management Accounting-TMH

Financial Institutions, Markets & Services

Course Code	Course Title	Credits	Type (T+P+Pj)
CUFM2351	Financial Institutions, Markets & Services	4	3+0+1

Course Rationale:

This course will enable the students to understand the role and functioning of financial markets, financial institution and financial products. Also students will get knowledge on issues related to risk and return, the role of regulatory bodies, operations of insurance companies and mutual funds.

Course Outcomes

Upon completing this course, students will be able to:

- Understand the role and importance of various financial markets such as money, capital, currency, debt, derivative, and commodity markets.
- Gain insights into the secondary market in India, including stock markets, regional and modern stock exchanges, and international stock exchanges.
- Understand the concepts of financial services and classify financial services, including fund-based and non-fund-based services.

Course Outcomes

Upon completing this course, students will be able to:

- Investigate the various elements influencing financial markets and explore how these markets are interconnected with the broader economy.
- Analyze the processes involved in issuing corporate securities and examine the functions and operations of primary and secondary markets in India.
- Identify and Analyze different financial services such as leasing, hire purchase, factoring, and forfaiting that organizations use for short-term funding.
- Analyze mutual funds and insurance products to understand their role and benefits as investment options.
- Analyze the Concept of Credit Ratings: Investigate the different types of credit ratings, their advantages and disadvantages, and how they influence investment decision-making.

Course Contents:

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3			3				3			3	3	3
CO2	3	3	3			3				3			3	3	3
CO3	3	3	3			3				3			3	3	3
CO4	3	3	3			3				3			3	3	3
CO5	3	3	3			3				3			3	3	3

Course Contents:

Module: I

Introduction to Financial System and Economic Development, Indicators of Financial Development, Role of financial intermediaries in an emerging market, Concepts Related to Financial Markets and Institutions, Financial Instruments – Financial Markets – Capital Markets & Money, Markets – Interlink Between Money Market & Capital, Market – Characteristics of Financial Markets – Functions of Stock Exchange, Financial Sector reforms, financial inclusion.

Module: II

Financial Regulations and Regulatory Institutions in India (RBI, SEBI,IRDA,PFRDA), Other Important Financial Institutions – I (Provident Fund, Pension Fund, Insurance Companies)

Module: III

Mutual Fund,, Credit Rating Agencies,, Merchant Bank,, Venture Capital Funds, Private Equity

Module: IV

Money Markets in India, (Call Money Market, Treasury Bill, Commercial Paper, Certificate of Deposit), Classification of Stock Market and Securities - IPO, Stock Exchanges, Stock Market Indices, Market Micro-Structure in Stock Market, Foreign Exchange Market - Foreign Exchange Market Structure, Risk Management in Foreign Exchange Market

Text Book:
Madurra Jeff, " Finacial Market and Institution", South Western Cenage Learning

Reference Books:
Financial Instution and Market by L .M. Bhole
Indian Financial System by M.Y Khan

Commercial Banking and ALM

Course Code	Course Title	Credits	Type (T+P+Pj)
CUFM2352	Commercial Banking and ALM	3	3+0+1

Course Rationale:
This course focuses on the role, functions and management of commercial banks. It will help students in applying the knowledge to work in the banking environment. This course will expose students to gain knowledge on Asset/Liability Management (ALM) and its techniques in bank.

Course Objectives:

- To gain knowledge on functioning of a Commercial Bank, various products and services offered by Commercial Bank as well as various risks faced by Banks.
- To facilitate the different techniques for analysing the bank performance and to evaluate the banking stocks.
- To understand the techniques of the Asset/Liability Management of a Bank.

Course Outcome:
On successful completion of the course the students will be able to

- CO1: Demonstrates an understanding of utilizing banking operations and risk management principles to make informed financial decisions.
- CO2: Analyse various lending products offered by commercial banks, including personal loans, mortgages, and business loans, and analyze their terms and conditions.
- CO3: Attain expertise in evaluating and appraising credit risk within loan applications to facilitate the process of granting loans.
- CO4: Evaluate the performance of banks and assess the value of banking stocks.
- CO5: Analyse Asset/Liability Management (ALM) and Apply Apply diverse techniques of Asset/Liability Management to ensure the smooth operation of the bank.

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3			3				3			3	3	3

CO2	**3**	**3**	**3**			**3**				**3**			**3**	**3**	**3**
CO3	**3**	**3**	**3**			**3**				**3**			**3**	**3**	**3**
CO4	**3**	**3**	**3**			**3**				**3**			**3**	**3**	**3**
CO5	**3**	**3**	**3**			**3**				**3**			**3**	**3**	**3**

Course Content:

Module: I

Indian Banking System

Banks: Meaning, nature, characteristic of Indian banking system, functions of commercial banks – primary functions; secondary functions; agency functions and general utility functions, Structure of banking sector in India, role of banks in the development of economy, Reserve Bank of India, Bank Regulatory Environment.

Module: II

Product and Services Provided by Commercial Banks

Type of Deposit Account: Types of deposits, process of opening bank accounts, pay in slip, Cheque book, pass book, ATM cum Debit card, Credit Card, advantages of bank account, Loan and Advances: Introduction, classification of loans, principles of good lending, loan procedure followed by banks, evaluating consumer and commercial loans; core banking solution, Capital Adequacy, Non-Performing Assets

Module:: III

Bank Performance and Evaluation

Financial statements of commercial banks, evaluation of bank performance measures, valuation of bank stocks

Bank Management: Credit Management, Investment Management, Liquidity Management, Liabilities Management, Capital Management, Management of Off-Balance Sheet Activities.

Module: IV

Asset/Liability Management

An Overview of Asset/Liability Management (ALM), Risk in bank: credit risk, interest rate risk, market risk, operational risk, liquidity risk, solvency risk, legal risk

Techniques of Asset/Liability Management: Liquidity: gaps analysis, sensitivity analysis, duration analysis and use of derivatives in ALM.

Text Books:

- Banking Theory and Practice by K.C. Shekhar &LekshmyShekar : Vikas Publishing House (P) Ltd., 21st Edition 2013.
- Risk Management In Indian Banks by Dr. K.M. Bhattacharya: Himalaya Publishing House Pvt. Ltd.

Security Analysis and Portfolio Management

Course Code	**Course Title**	**Credits**	**Type (T+P+P)**

	Security Analysis and Portfolio Management	4	1+0+3

Course Rationale:
This course will acquaint the students with the working of security markets. It will develop the skills required for portfolio management. It will identify, interpret and analyze the varied technical patterns and indicators presented on the real-life stock charts. Students will be able to understand basics of balancing risk and rewards using portfolio management.

Course Objectives:
1. To understand the fundamentals of investment
2. To develop the skills required for portfolio management
3. Identify, interpret and analyze the varied technical patterns and indicators presented on the real-life stock charts.

Course Outcomes:
After completion of the course students
1. Will be able to calculate risk and return of the investment.
2. Will be able to do the fundamental analysis for making investment decision
3. Can Identify, interpret and analyze the varied technical patterns and indicators presented on the real-life stock charts.
4. Can manage portfolios of the investors
5. Will be able to do portfolio revision and evaluation for the investors.

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3										3	3	3
CO2	3	3	3										3	3	3
CO3	3	3	3										3	3	3
CO4	3	3	3										3	3	3
CO5	3	3	3										3	3	3

Course contents:
Module: I
Fundamentals of investment: Investment avenues: stocks, debentures, mutual funds, over view of stock market, primary and secondary market, risk and return: types of risk, measurement of risk and return, calculation of beta, capital asset pricing model (CAPM).

Module: II

Fundamental analysis: Economic analysis, industry analysis, company analysis, bond valuation, equity valuation, Technical Analysis: technical indicators like; moving averages, Pivot point, support and resistance, candlestick chart, line charts, Efficient market hypothesis.

Module: III

Portfolio analysis: Calculation of expected return and risk of a portfolio, diversification of risk, capital market line, security market line. Portfolio revision: Passive management, active management, formula plan

Module: IV

Portfolio evaluation: Sharpe's Performance Index, Treynor's performance Index, Jensen's Performance Index

Text Books:

- Security Analysis and Portfolio Management, Pandian, Vikash
- Security Analysis and Portfolio Management, Kevin, PHI

Reference Books:

- Security Analysis and Portfolio Management, Fischer and Jordan, PHI
- Security Analysis and Portfolio Management , V.A. Avadhani, Himalaya Publishing house. http://www.himpub.com/documents/Chapter1155.pdf
- Security Analysis and Portfolio Management, D.Khatri, Macmillan.

Project Appraisal & Financing

Course Code	Course Title	Credits	Type (T+P+P)
	Project Appraisal & Financing	4	1+0+3

Course Objective:

- To provide students an understanding of the commercial, financial, and socio-economic aspects of a new project and/or a business.
- To understand the sources of finance and financial appraisal required for a project
- To prepare business plan and DPR for a project

Course Outcomes:

On successful completion of the course, students

1. Will able to do project appraisal for a project
2. Can prepare business plan and DPR for a project

3. Will be able to do financial appraisal of any project
4. Can do social cost benefit analysis for the project
5. Will be able to do project risk analysis

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3										3	3	3
CO2	3	3	3										3	3	3
CO3	3	3	3										3	3	3
CO4	3	3	3										3	3	3
CO5	3	3	3										3	3	3

Course Syllabus

Module I:

Project appraisal: Project: Definition, characteristics, types, Appraisal: Marketing, Technical, Political, Financial, Social, Project Identification, project Preparation, Pre-feasibility study, Feasibility study, Preparation of detailed project report.
Licensing/clearances: type of licenses, clearances involved, Procedure and documentation required for getting a license in India.

Module II:

Financial Analysis: Estimation of cost of project & Means of financing, Arrangement of Funds, Traditional sources of financing: Equity shares, preference shares, Debentures/bonds, loan from Financial institutions, Alternative sources of financing: FDI & FII, Private Equity, Securitization, Venture Capital, Different business/project support government schemes in India, Government funding for projects, Startup schemes of government, Projected cash flows of project, Appraisal Criteria, NPV,IRR, PI, PBP, ARR.

Module: III

Social Cost Benefit Analysis: Rationale, UNIDO, Little and Mirrlees Approach, Public Private Partnerships (PPP): Forms, Guidelines, Problems and Issues.

Module: IV

Project Risk analysis: Types of risk, External stakeholders-related risks: customers, consumers, suppliers, Internal risks: project team members, top-management, Project-related risks: technological or logistic risks, Event-related risks: economic (e.g. financial crisis), sociopolitical, Simple estimation of risk: Sensitivity Analysis, Monte Carlo Simulation, Decision Tree Analysis.

Books Recommended:

1. Projects: Planning, Analysis, Financing, Implementation & Review, Prasanna Chandra
2. Introduction to Project Finance: An Analytical Perspective, H R Machiraju

3. Project Management, Maylor
4. Project Management : By Jeffery Pinto
5. Project Management, K.Nagarajan, New Age International Publisher

Current Asset Management

Course Code	Course Title	Credits	Type (T+P+P)
CUFM 2350	Current Asset Management	4	2+1+1

Course Rationale:
This course will enable the students to understand how to manage Current Assets, working capital financing policies, increasing profits through working capital management and how to estimate working capital requirements of the company.

Course Objectives:
- The objective of this course is to provide students with a comprehensive understanding of working capital management, focusing on efficient management of current assets and current liabilities to optimize liquidity, profitability, and risk.
- The course aims to equip students with the skills and techniques needed for effective short-term financial decision-making in businesses.
- The course also discusses the cash conversion cycle, Cash budgeting and credit policy and credit variables.
- Students are expected to be familiar with any organization's Current Asset Management policy. They are expected to get hands on experience on any Organisation (e.g. Gram Tarang).

Course Outcomes:
- Understand the concept of working capital and its importance in financial management.
- Analyze and evaluate the working capital requirements of a business.
- Develop strategies for managing current assets (inventory, receivables, and cash) and current liabilities.
- Apply techniques to optimize the trade-off between profitability and liquidity.
- Assess the impact of working capital decisions on the overall financial performance of a business.

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3			3				3			3	3	3
CO2	3	3	3			3				3			3	3	3

CO3	**3**	**3**	**3**			**3**				**3**			**3**	**3**	**3**
CO4	**3**	**3**	**3**			**3**				**3**			**3**	**3**	**3**
CO5	**3**	**3**	**3**			**3**				**3**			**3**	**3**	**3**

Course Contents:

Module: I

Concept & Significance: Concept of working capital, Significance of working capital, Determinants of working capital, Operating cycle, Estimation of working capital, Risk-return trade-off of working capital, Working capital policies: Current asset policy and financing policy, Working capital financing,

Module: II

Inventory management:meaning, Tools and technique of inventory management, EOQ, Various levels of inventory, inventory control (ABC and VED analysis);

Module: III

Cash Management: Cash management: Meaning, Objectives/Motives of holding cash, Determinants of cash needs and method for determining cash needs (Baumol Model and Miller-Orr Model).

Module: IV

Receivables management: credit policy variables, evaluation of alternative receivable policy, collection policy, cost of receivables.

Text Books:

- I M Pandey-Financial Management-Vikash
- Prasanna Chandra- Financial Management-TMH

Reference Books:

- Khan and Jain-Financial Management-TMH
- Sudhindra Bhatt- Financial Management-Excel

Financial Analysis and Visualization

Course Code	Course Title	Credits	Type (T+P+Pj)
	Financial Analysis and Visualization	4	3+0+1

Course Rationale:

With the growing amount of data available to businesses, decision-makers must translate strategy into accountability, measure progress against goals, and leverage data for business decision making. Dashboards are used to present and analyzing enterprise performance data, both strategic and operational, and to perform business analysis easily and quickly. This course will teach dashboards and financial data visualization

technologies, using an approach that will include practice as well as a significant hands-on live project. Students will learn how to design and build dashboards, as well as create content of different types of financial analysis that can be incorporated into dashboards.

Course Objectives:

- To equip the students with various concepts, tools and techniques Data Visualization Principles for Dashboard Design.
- To provide thorough understanding and techniques of visualization of financial analysis for dashboard design in excel and tableau based on financial data that can meet managerial and business needs.
- Create compelling, interactive dashboards to combine several visualizations into a cohesive for financial analysis.

Course Outcomes

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

- Analyse and prepare dashboard for different financial parameter
- Create reports, data visualizations, and dashboards of various foinancioal indices in Excel and Tableau
- Perform financial statement analysis (profitability, liquidity, solvency, and efficiency analysis) and evaluate company performance.
- Use advanced data visualization tools to present financial insights effectively.
- Develop dashboards and reports for financial decision-making using industry-standard software.
- Apply financial analysis techniques to case studies based on Indian markets and industries.

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3			3				3			3	3	3
CO2	3	3	3			3				3			3	3	3
CO3	3	3	3			3				3			3	3	3
CO4	3	3	3			3				3			3	3	3
CO5	3	3	3			3				3			3	3	3

Course Contents:

Module: I

Data Visualization Principles for Dashboard Design:

Data Visualization: Principles and Types of Data Visualization

Dashboard: Meaning, purpose and benefits of dashboards, understanding dashboard design principles, layout, colour and display, common issue when building dashboards,

choosing the right data visualization to communicate information effectively, displaying trends with charts. CFO Scorecard**,** Types of Dashboards: Business Dashboards, Management Dashboard, Strategic Dashboard, Analytical Dashboard, Operational Dashboard. Create a Dashboard based on real-time data: Practice Dashboard Design in Excel and Tableau with Graphs.

Module: II

Visualization of Financial Statement Analysis for Dashboard Design:

Preparation of different Dashboard with visualization of Financial Statement Analysis: Financial Key Performance Indicators (KPI) Dashboard, Profit and Loss Dashboard, Accounts Receivable & Accounts Payable Dashboard, Financial Performance Dashboard, Balance Sheet Dashboard, The Right Business Dashboards for every Users**.** Preparation of Dashboard for Financial Data Comparison Analysis: Development Trend Analysis and Key Financial Analysis**.** Project on preparation of the above with Excel and Tableau

Module: III

Visualization of Corporate Finance for Dashboard Design:

Preparation of different Dashboard with visualization of Corporate Finance: Financial Investment Dashboard, Funds Raising Dashboard, Components of Working Capital Dashboard, Dividend Dashboard, Cash Management Dashboard, CFO Dashboard, Project on preparation of the above with Excel and Tableau

Module: IV

Visualization of Stock Market for Dashboard Design: Visualizing Company Profits, Visualizing by Sector, Financial results by business segment in a Small Multiples Dashboard, KPI & Sparkline in Stock dashboard, Top PerformerStock Performance dashboard, PE ratio, Investment Returns, Investment Summary, Investment Comparisons, Stock Dividend Tracker, Stock Market Dashboard - Trend Analysis of Stock Performance, Dashboard for comparing Rates of Return, Security's Rate of Return, Portfolio of Securities' Rate of Return, Security's Risk, Project on preparation of the above with Excel and Tableau.

Text Book:

- Visualizing Financial Data by Julie Rodriguez and Piotr Kaczmarek, Wiley Publication

Reference Book:

Storytelling with Data: A Data Visualization Guide for Business Professionals by Cole NussbaumerKnaflic: Wiley Publication

Digital Finance

Course Code	**Course Title**	**Credits**	**Type (T+P+Pj)**

CUBB3006	Digital Finance	4	3+0+1

Course Objectives

- To comprehensively understand digital finance concepts, technologies, and applications in the financial ecosystem.
- To explore the impact of digital finance on financial inclusion, especially in India.
- To analyze the regulatory framework and challenges associated with digital finance in the Indian context.
- To equip students with knowledge of emerging trends, tools, and technologies in the digital finance domain.

Course Outcomes

Upon successful completion of this course, students will be able to:

- Understand the fundamental principles and components of digital finance.
- Assess the role of digital finance in promoting financial inclusion in India.
- Analyze the regulatory and ethical issues in digital finance.
- Apply digital finance tools and technologies in real-world scenarios.
- Evaluate emerging trends such as blockchain, cryptocurrency, and fintech innovations.

Course Outcome to Program Outcome Mapping:

COs	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**	**PSO3**
CO1	**3**	**3**	**3**			**3**				**3**			**3**	**3**	**3**
CO2	**3**	**3**	**3**			**3**				**3**			**3**	**3**	**3**
CO3	**3**	**3**	**3**			**3**				**3**			**3**	**3**	**3**
CO4	**3**	**3**	**3**			**3**				**3**			**3**	**3**	**3**
CO5	**3**	**3**	**3**			**3**				**3**			**3**	**3**	**3**

Syllabus

Module 1: Introduction to Digital Finance

Definition, scope, and importance of digital finance.
Evolution of digital finance in India and global perspective.
Components of digital finance: Mobile banking, digital payments, wallets, and e-banking.
Impact of digital finance on traditional banking systems.

Module 2: Digital Payment Systems

Overview of digital payment systems: UPI, NEFT, IMPS, RTGS, and mobile wallets.
Aadhaar-enabled payment systems (AEPS).
Role of NPCI in India's digital payment ecosystem.
Case studies on Paytm, PhonePe, Google Pay, and BharatPe.

Module 3: Financial Inclusion through Digital Finance
Importance of financial inclusion in India.
Role of digital finance in bridging the rural-urban divide.
Government initiatives: Jan Dhan Yojana, Digital India, and PMGDISHA.
Challenges and opportunities for financial inclusion via digital platforms.
Module 4: Regulatory and Ethical Framework
RBI guidelines for digital payments and fintech.
Data privacy laws and cybersecurity concerns in India.
Digital frauds and risk management strategies.
Ethical considerations in digital finance.

Module 5: Emerging Trends in Digital Finance
Fintech and Insurtech: Concepts and applications.
Blockchain technology and cryptocurrency: Bitcoin, Ethereum, and CBDCs.
Artificial Intelligence and Machine Learning in digital finance.
Green finance and sustainable digital finance solutions.
Module 6: Digital Finance in Practice
Case studies: Success stories in digital finance (e.g., Paytm, Zerodha, M-Pesa).
Practical applications: Designing digital finance solutions.
Research project: Analysis of a fintech innovation or digital finance trend.

Textbooks

- Digital Finance: Financial Inclusion in the Digital Age – Gomber et al.
- The FinTech Book – Susanne Chishti & Janos Barberis.
- India's Digital Revolution in Finance – Ratan K. Sinha.
- Digital Payment and Banking Technology – Indian Institute of Banking & Finance (IIBF).

Reference Materials

- RBI publications and reports on digital finance.
- Government of India reports on financial inclusion and digital economy.
- Journals: Journal of Financial Innovation, Digital Finance.
- Online resources: NPCI website, RBI guidelines, and fintech blogs.

Marketing Elective

Rural Marketing

Course Code	Course Title	Credits	Type (T+P+Pj)
CUMM2360	Rural Marketing	4	2+1+1

Course Rationale:

This course gives emphasis on rural markets and emerging perspectives of rural marketing, thus imparting managerial initiatives and relevant frameworks used by business managers for rural markets. It will help students in applying the knowledge at work front to enhance performance and make organizations work more effectively in rural sector. This course will expose students to the marketing challenges in rural sector and ways to overcome them.

Course Objectives:

- To familiarize participants with environment, challenges, opportunities, strategies and methodology for emerging markets.
- To sensitize the students towards the needs and behavior of rural consumers and strategies implemented to fulfill them.
- To utilize the understanding on peculiarities of rural markets and the decision making process involved.

Course Outcomes:

After the completion of the course, the students

- Will be able to apply the concepts and techniques of marketing management and their application in rural marketing environments.
- Will be able to understand and apply the rural marketing mix (4 A's) to meet the needs of rural consumers which will help the students in achieving employment in FMCG companies.
- Will get the clarity who wants to become an entrepreneur and he/she wants its product to enter the rural market for promotion of his products and services.

Course Outcome to Program Outcome Mapping:

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO1	3	3		3									3	3	3

CO2	**3**	**3**		**3**									**3**	**3**	**3**
CO3	**3**	**3**		**3**									**3**	**3**	**3**
CO4	**3**	**3**		**3**									**3**	**3**	**3**
CO5	**3**	**3**		**3**									**3**	**3**	**3**

Course contents:

Module: I

Rural Marketing Overview: Introduction to Rural Markets Rural India- a promising Market place, Rural Economy- A reality check, Issues and Challenges in marketing in rural India, Understanding 'Fortune at the bottom of Pyramid', Rural Market Environment: Rural Market Structure and Importance of Rural Markets, Factors of market environment, Rural Producers & Rural Consumers, Rural Consumer Behavior:Factors affecting consumer behavior, Characteristic of rural consumer, Opinion leadership process, Consumer buying process.

Module: II

Rural Marketing Strategy: Rural Market Segmentation, Conditions for Effective Market Segmentation, Approaches for Segmenting the Rural Market, Targeting and Selection of Segments, Positioning Rural Products, 4Ps of Marketing Mix and 4As of Rural Marketing mix. Rural Marketing Research:Process of Research in Rural Markets, Sources and Methods of Data Collection, Data Collection Approaches in Rural Markets.

Module: III

Rural Product Strategy: Market for Agricultural Inputs, Consumable inputs, Capital inputs, marketing of agricultural produce, Regulated markets, Cooperative Marketing & ProcessingSocieties, Corporate Sector in Agri-Business: Cultivation, Processing & Retailing, Rural Marketing of FMCGs, Durables & Financial Services. **Rural Pricing:** Production costs, Finalization of price, Rural pricing strategies and rural competition and pricing.

Module: IV

Rural Distribution: Distribution Patterns for Consumer and Industrial Goods, Customer Convenience Buying, Village retailers, rural haats and fairs, Public distribution system (PDS), Cooperative societies, and prevalent distribution models (corporate). Rural Promotion:Rural Advertising, Advertising Mix Factors and Media Planning, Public Relations, Direct Marketing, Folk media, Melas. Innovations in rural markets:Role of innovations in rural markets, Importance of ICT, ICT initiatives in rural markets, Emergence of organized retailing.

Text Book:

- The Rural Marketing Book, Text and Practices- Pradeep Kashyap & Siddhartha Raut, Biztantra

Reference Books:

- The Fortune at the Bottom of the Pyramid – Dr. C K Prahalad, 2005 Edition, Wharton School.
- Rural Marketing- Ramakrishnan.L, Krisnamacharyullu.C.S.G, Pearson Education.

Sales and Distribution Management

Course Code	Course Title	Credits	Type (T+P+Pj)
CUMM2361	Rural Marketing	6	2+2+2

Course Rationale:

Sales is a vital function for any firm that needs to generate a surplus out of its activities by satisfying needs and wants of customers. It has the ultimate responsibility to convert a firm's investments into returns. It involves managing a firm's own sales force, if it has one, and the channel partners to achieve the business goals. The success of any organizational strategy boils down to the success of the sales and the distribution function.

Course Objectives:

- To develop an understanding of concepts, which are helpful in designing sound programs for organizing and managing the sales force and enhance their productivity
- To give practice of winning salesmanship
- To give insight into the practice of organizing and gearing up the sales force to maximize sales
- To explain how to design, develop and manage a distribution channel that delivers business goals
- To expose the learner to the function of modern distribution/fulfillment centers and the practice of omni channels

Course Outcomes:

After completion of the course students
CO1: Plan and implement an effective sales strategy for their organizations
CO2: Develop, handle and grow key accounts
CO3: Manage and enhance the sales force productivity and performance
CO4: Apply specialized knowledge of distribution management to get the desired results from the channel participants
CO5: Review the functions of a distribution center and the design features which cater for specific types of products

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3		3									3	3	3
CO2	3	3		3									3	3	3
CO3	3	3		3									3	3	3
CO4	3	3		3									3	3	3
CO5	3	3		3									3	3	3

Course contents:

Module: I

Personal selling process: The Selling Process and different theories of selling, Qualities and skills of an effective salesperson, Setting personal selling objectives, Determining sales related marketing policies, Formulating personal selling strategy, Selling in the age of Social Media.

Module: II

Planning and Organizing the Sales Function: Sales Planning,forecasting and budgeting, Managing sales territories &quotas, Organizing the sales force – recruiting, training and compensating, Gearing up the sales force for superior performance – motivating, evaluating and controlling the sales force.

Module: III

Planning and Organizing the Distribution Function: Distribution objective/strategy and different channel formats, Designing and developing the distribution channels, Recruiting reseller channel partners, Interface and coordination between sales force and the channel partners,Managing the Channel Members – motivating, managing channel power and conflict, evaluating.

Module: IV

Omni Channel Distribution: Pros and cons, Difference between multi-channel and omni channel, Managing multi-channel and omni channel distribution, Channel

Conflicts, Functioning of a distribution/fulfillment center – Use of Industry 4.0 technologies.

Text Book:

- Sales and distribution Management- by Tapan K Panda, Sunil Sahadev, Oxford University Press

Reference Book:

- Havaldar,K.K& Cavale,V.M(2007).Sales and Distribution Management:Text and Cases.New Delhi:Tata-McGraw-Hill

Services & Financial Services Marketing

Course Code	Course Title	Credits	Type (T+P+Pj)
CUMM2362	Services & Financial Services Marketing	4	2+1+1

Course Rationale:

This course shall acquaint the students to the uniqueness of the services characteristics and its marketing implications associated with it. The intent of the course is to discuss measure and analyze several facets in the area of services marketing essential for the success of a service sector firm particularly in context to financial services.

Course Objectives:

- To supplement basic marketing and marketing strategy courses by focusing on problems and strategies specific to marketing of services with special focus on financial services.
- Problems commonly encountered in marketing services -- such as inability to inventory, difficulty in synchronizing demand and supply, difficulty in controlling quality -- will be addressed.
- To understand the financial services like banking, insurance, mutual funds, venture capitals and the digitization of financial services.
- To understand the strategies used by successful services marketers with reference financial services to overcome these difficulties will be discussed through case studies.

Course Outcomes:

- Explain the unique challenges of services marketing, including the elements of product, price, place, promotion, processes, physical evidence, and people.

- Evaluate the roles played by employees and customers during service delivery of financial services.

- Explain service blueprinting and its application across various service sectors particularly the financial services.

- Design service quality measurements to build customer loyalty and evaluate the effectiveness, efficiency of customer service offerings.

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3		3									3	3	3
CO2	3	3		3									3	3	3
CO3	3	3		3									3	3	3
CO4	3	3		3									3	3	3
CO5	3	3		3									3	3	3

Course Contents:

Module: I

Marketing of Services: Introduction - Growth of the Service Sector - The Concept of Service - Characteristics of Services, Classification of Services, Service Marketing Mix (Additional Dimensions in Services Marketing - People, Physical Evidence and Process), Internal Marketing of a Service - External versus Internal Orientation of Service Strategy, Service Encounter, Service Failure and Service Recovery, learning from customer feedback.

Module: II

Delivering Quality Financial Services: Causes of Service-Quality Gaps, Key Factors and Strategies for closing all the Gaps, SERVQUAL and its application to financial services, Designing the Service – Blueprinting, Service blueprint of financial services like banking, insurance etc, Role of employees' and customers' in service delivery in the delivery of financial services.

Module: III

Banking and Insurance Services: Retail Financial Services: Retail banking, Meaning of banking business, introduction to various bank products, Selling bank products, concept of cross selling, Impact of technology on bank marketing (Internet banking, mobile banking and UPI) Insurance-Meaning, advantages various types of insurance, financial planning process, Risk management –Strategy to cover risk, introduction to IRDAI, selling of insurance plans, Banc assurance- Bank as a distribution channel for insurance services.

Module: IV

Mutual Funds and Venture Capital: Mutual funds-Meaning and Types of mutual funds, advantages and disadvantages. Debt funds and types of Debt schemes, Types of equity funds /Growth funds, concept of hybrid funds, Mutual funds Vs. Other investment like gold, equity etc. Mutual Fund Structure, sales and distribution channels. Introduction to Venture Capital Funds, Structure of Venture Capital Funds, Role of Venture Capital Funds in Start-ups and MSME, Merchant Banking.

Text Books :

- Zeithaml, Bitner, Gremler & Pandit: SERVICES MARKETING, McGraw Hill.
- V.A.Avdhani: Marketing of Financial services, HPH.

Reference Book:

- P.K. Gupta: Insurance and Risk Management, HPH.

Brand Management & Consumer Behaviour (84 hours)

Course Code	Course Title	Credits	Type (T+P+Pj)
CUMM2363	Brand Management & Consumer Behaviour	4	2+2+0

Course Objectives:

- To provide the learners cutting edge knowledge on key concepts of brand management and their implications in formulating branding strategies.
- To enable the learners to understand major factors underlying consumer behavior and develop the ability to efficiently predict consumers' response to marketing actions.
- To build the learners capacity to formulate and implement brand management strategies in the context of consumer's behaviour.

Course Outcomes:

After the completion of the course students will be able to:

- **CO1:** examine and implement key brand concepts in the context of real-life consumers, business products and services operating in various markets and in the digital space.
- **CO2:** formulate effective branding strategies and interpret brand audits.
- **CO3:** enumerate, explain and apply the concepts of consumer behaviour to real world strategic marketing management decision making.

- **CO4:** comprehend, discuss and elaborate the changing consumer and organizational buying behaviour and their implications in marketing decisions.
- **CO5:** implement branding strategies in the context of consumer's behaviour.

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2		2		2	1		3	2	2	3	3	2	
CO2	2	3		3		3	1		2	3	3	2	2	3	
CO3	3	2		2		2	1		3	2	2	3	3	2	
CO4	2	3		3		3	1		2	3	3	2	2	3	
CO5	3	2		2		2	1		3	2	2	3	3	2	

***High-3, Medium-2, Low-1**

Course Syllabus:

Module 1: Concepts of Brand (07 hours)

Theory

- Brand Elements, Products vs. Brands, Branding Challenges and Opportunities, Strategic Brand Management Process,
- Brand Architecture, Designing and Implementing Brand Architecture Strategies,
- Brand Identity, Brand Personality, Brand Positioning and Repositioning, Brand Positioning vs. Product Positioning, Brand Awareness,
- Brand Image, Brand Equity, Introducing New Brands and Brand Extensions.

Practice (14 Hours)

- Thrust Area for Practice Session 01 & 04 : Core Concepts of Branding
- Thrust Area for Practice Session 02 & 5 : Strategic Brand Management Process
- Thrust Area for Practice Session 03 & 6 : Brand Architectural System

Module 2: Brand Strategy and Brand Evaluation (07 hours)

Theory

- Customer Based Brand Equity (CBBE), Brand Resonance and Brand Value Chain,
- Designing and Implementing Brand Marketing Programs, Role of Integrated Marketing Communications,

- Leveraging Secondary Brand Associations, Measuring and Interpreting Brand Performance, Managing Brands Over Time, Managing Brands Over Geographic Boundaries and Market Segments.

Practice (14 Hours)

- Thrust Area for Practice Session 07 & 10 : CBBE
- Thrust Area for Practice Session 08 & 11 : Brand Value Chain
- Thrust Area for Practice Session 09 & 12 : IMC

Module 3: Introduction to Consumer Behaviour (07 hours)

Theory

- Individual Determinants of Consumer Behaviour including Motivation, Personality, Perception, Learning, Attitude, Reference Group, Family, Social Class, Culture, Digitalization etc.,
- Segmentation and Brand Positioning

Practice (14 Hours)

- Thrust Area for Practice Session 13 & 16 : Determinants of Consumer Behavior
- Thrust Area for Practice Session 14 & 17 : Perceptual Impact on Consumer Behaviour
- Thrust Area for Practice Session 15 & 18: Salesmanship

Module 4: Consumer Decision Making Process (07 hours)

Theory

- Problem Recognition, Search & Evaluation, Purchasing Process, Post-purchase Evaluation & Behaviour, Consumer Decision Models
- Organizational Buying Behaviour: Characteristics, Pattern & Factors Influencing Organizational Buying Behaviour, Organizational Buying Roles & Decision Process

Practice (14 Hours)

- Thrust Area for Practice Session 19 & 21 : Case Analysis
- Thrust Area for Practice Session 20 & 22 : Case Analysis

Digital Marketing & Marketing Communications (84 hours)

Course Code	Course Title	Credits	Type (T+P+Pj)
CUMM234	Digital Marketing & Marketing Communications	4	2+0+2

Course Objectives:

- To understand various concepts and importance of digital marketing and to visualize its various application in diverse areas of sales & marketing.
- To gain knowledge about advertisement and its application in real world
- To build the learners capacity to formulate and implement marketing communication strategies in today's digital world.

Course Outcomes:

After the completion of the course students will be able to:

- **CO1:** examine and implement digital marketing concepts for achieving sales and marketing goals of the organization.
- **CO2:** formulate effective digital marketing campaigns for different organizations.
- **CO3:** enumerate, explain and apply the concepts of advertising and marketing communications for achieving sales and marketing goals of the organization.
- **CO4:** formulate effective advertising campaigns for different organizations.
- **CO5:** implement communication strategies in a digital world.

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2		2		2	1		3	2	2	3	3	2	
CO2	2	3		3		3	1		2	3	3	2	2	3	
CO3	3	2		2		2	1		3	2	2	3	3	2	
CO4	2	3		3		3	1		2	3	3	2	2	3	
CO5	3	2		2		2	1		3	2	2	3	3	2	

***High-3, Medium-2, Low-1**

Course Syllabus:

Module 1: Digital Marketing Planning and Structure (07 hours)

Theory

- Understanding traffic, leads, domains, website and flow,
- Strategic design of homepage, pricing page, portfolio, gallery and contact us page and other pages, SEO,
- use of Google Analytics, website auditing, wordpress website,
- Facebook Marketing: Designing profiles and pages, Creating facebook ads, targeting audience for facebook ads, budgeting for facebook ads.

Project (14 Hours)

- Thrust Area for Project Session: Social Media Marketing of a Production Unit at campus

Module 2: Google Adwords & Youtube Marketing (07 hours)

Theory

- Google Adwords: Understanding Adwords, Keyword planning and control, Creating ad campaigns, text ads, ad groups, bidding strategy on location, schedule and devices, Linking Google Analytics to Adwords.

- Youtube Marketing: Google pages for youtube channels, managing a youtube channel, branding watermarks, channel analytics.

Project (14 Hours)

- Thrust Area for Project Session: Social Media Marketing of a Production Unit at campus

Module 3: Advertising Design (07 hours)

Theory

- Advertising Design: Appeals, Message Strategies & Execution Framework: Advertising Design, Advertising Theory, Types of Advertising Appeals, Structure of an Advertisement, Message Strategies, Cognitive strategies, Execution Strategies, Creating an Advertising, Advertising Effectiveness.

- Copywriting: Meaning and Definition of Copywriting, The Copywriter, Copywriting for Print, Copywriting, guidelines, Radio Copywriting, TV Copywriting, Writing for the Web, Tips for writing good web content.

Project (14 Hours)

- Thrust Area for Project Session: Social Media Marketing of a Production Unit at campus

Module 4: Media Planning and Strategy (07 hours)

Theory

- Media Planning and Strategy: Growth and Importance of Media, Meaning and Role of Media Planning, Media, Plan, Market Analysis, Media Objectives, Developing and Implementing Media Strategies, Evaluating the effectiveness.

- Print media and Outdoor Media: Characteristics of the press, Basic media concepts, Newspapers, Magazines, Factors to consider for magazine advertising, Packaging, Out-of-home Advertising, Directory Advertising.

- Broadcast Media: Meaning of Broadcast Media, Radio as Medium, Television as Medium

Project (14 Hours)

- Thrust Area for Project Ses

Retail & Etail Management (84 hours)

Course Code	Course Title	Credits	Type (T+P+Pj)

CUMM2365	Retail & E-Tail Management	4	2+0+2

Course Objectives:

- To learn the meaning of Retail, Retailing and its significance in the Indian scenario.
- To provide emphasis on Retail Market Strategy and customer service in retail.
- To facilitate the understanding towards the meaning, process and tools of e-retailing.

Course Outcomes:

After the completion of the course students will be able to:

- **CO1:** understand the concepts and develop the knowledge of various retail formats.
- **CO2:** explain the strategies of retail business and its applications across various formats in modern trade.
- **CO3:** examine the changing role of intermediaries, changing nature of supply chain, payment systems and promotion in the online and offline retailing.
- **CO4:** independently manage a retail outlet.
- **CO5:** use digital platforms for promoting retail sales.

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2		2		2	1		3	2	2	3	3	2	
CO2	2	3		3		3	1		2	3	3	2	2	3	
CO3	3	2		2		2	1		3	2	2	3	3	2	
CO4	2	3		3		3	1		2	3	3	2	2	3	
CO5	3	2		2		2	1		3	2	2	3	3	2	

***High-3, Medium-2, Low-1**

Course Syllabus:

Module 1: Introduction to Retailing (07 hours)

Theory

- Introduction to world of Retailing: its economic significance and opportunities. Retail theories and store types:Various retail stores and retail formats, theories of retail development- Environmental Theory, Cyclical Theory and Conflict Theory.Consumer behavior in retailing: Population demographic and geographic analysis, Consumer buying behavior.

Project (14 Hours)

- Thrust Area for Project Session: Retail Project in a Production Unit at campus

Module 2: Retail Market Strategy (07 hours)

Theory

- Retail Strategic planning process and situational analysis.
  Merchandise anagement:Merchandise planning: category management, sales forecasting, assortment planning process. Buying merchandise: branding strategies, sourcing decision, vendor development and management, Retail pricing and promotion strategies, selecting promotional mix and planning retail communication process.

Project (14 Hours)

- Thrust Area for Project Session: Retail Project in a Production Unit at campus

Module 3: Retail Location and Supply Chain (07 hours)

Theory

- Store location decisions, location theories, supply chain, retail logistics, physical distribution, inventory and warehouse management and e-logistics. Retail Operations:POP displays, visual merchandising, store layout, customer service and application of IT in retail.

Project (14 Hours)

- Thrust Area for Project Session: Retail Project in a Production Unit at campus

Module 4: E-Tail (07 hours)

Theory

- B2C Electronic Retailing, Characteristics, Advantages, Limitations, E-Tailing Business Models, Classification of Models by Distribution Channel, Malls with Shared Services.Social Shopping: Concept and Benefits, Social Shopping
  Aids Recommendations, Reviews, Ratings, and Marketplaces, Real-Time Online Shopping. The Online versus Off-Line Competition, Click-and-Brick models, Product and Service Customization.

Project (14 Hours)

- Thrust Area for Project Session: Retail Project in a Production Unit at campus

B2B Marketing

Course Code	Course Title	Credits	Type (T+P+Pj)
CUMM2366	B2B Marketing	4	2+2+0

Course Rationale:

The understanding and skills required to succeed in Business-to-Business (B2B) Markets is markedly different from that in the Business-to-Consumers (B2C) markets. The B2B market size is not only almost double that of the B2C market, it has also been growing at

a faster pace than the latter. Therefore, this course has been designed to equip the students with the additional understandings and skills required to succeed in the challenging role of Business Marketing.

Course Objectives:

- To understand the B2B marketing situations and the characteristics of the B2B markets
- To develop understanding and skills required to manage B2B relationships
- To explain how to organize the B2B marketing functions
- To develop the analytical and decision-making skills required to succeed in the B2B marketing roles
- To give an idea of B2B Marketing in the age of Social Media and the opportunities and challenges in Industry 4.0

Course Outcomes:

After completion of the course students

- Appreciate the unique characteristics of the markets and customers in the B2B context
- Apply the conceptual and practical insights gained from this course to develop and manage B2B relationships
- Suggest formulate and implementation of marketing programs for new as well as existing B2B markets for products and services
- Demonstrate analytical and decision-making skills required for business success in the B2B context
- Develop an insight into the changing shape of B2B marketing in the era of social media and Industry 4.0

Course Outcome to Program Outcome Mapping:

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO1	3	3		3									3	3	3
CO2	3	3		3									3	3	3
CO3	3	3		3									3	3	3
CO4	3	3		3									3	3	3

CO5	**3**	**3**		**3**								**3**	**3**	**3**

Course Contents:

Module: I

Fundamentals of B2B Marketing: Types of B2B goods and services, Characteristics of B2B markets and marketing, Understanding B2B buyers and buying process, Managing B2B key accounts, Managing customer relationships and rxperiences, Delivering solutions.

Module: II

B2B Market Analysis and Strategy: Researching B2B markets and environments, Segmenting B2B markets, Estimatingdemand

Module: III

Organizing B2B Marketing Functions: Managing product / pervice portfolios – developing and launching new products, managing B2B brands, Pricing for B2B markets, Communicating with B2B markets, Delivering value through channel partners and sales force

Module: IV

Social Media, Industry 4.0 and B2B Marketing: Leveraging the power of social media for B2B marketing, Industry 4.0 and B2B marketing.

Text Book :

- Business Marketing Management B2B by Michael D. Hutt and Thomas W. Speh, Cengage Learning

Reference Book:

- Business Market Management (B2B): Understanding, Creating, and Delivering Value by James C. Anderson, Das Narayandas, James A. Narus and D.V.R. Seshadri

Designing User/Customer Experience (UX/CX)

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM 1207	Designing User/ Customer Experience (UX/ CX)	2	1+0+1

Course Rationale:

This course will developthe students' knowledgeabout the fundamentals of Designing User/Customer Experience.

Course Objective:

- To develop an understanding about the fundamentals of Designing User/Customer Experience

Course Outcome:

After completion of the course students

1. Improved User Engagement: A well-designed UX can increase user engagement by making the product more intuitive and easier to use, leading to higher levels of user satisfaction and repeat usage.

2. Increased Product Adoption: A product with a positive UX is more likely to be adopted by users, as it provides a more enjoyable and efficient experience.

3. Enhanced Customer Satisfaction: A product with a good UX can lead to increased customer satisfaction, as users are more likely to recommend the product to others and continue to use it in the future.

4. Better User Retention: A product with a positive UX can lead to better user retention, as users are more likely to continue using the product and be less likely to switch to a competitor.

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12	PSO1	PSO2	PSO 3
CO1	**3**	**3**		**3**									**3**	**3**	**3**
CO2	**3**	**3**		**3**									**3**	**3**	**3**
CO3	**3**	**3**		**3**									**3**	**3**	**3**
CO4	**3**	**3**		**3**									**3**	**3**	**3**
CO5	**3**	**3**		**3**									**3**	**3**	**3**

Course contents:

Module: I

Converging on a common definition for Designing User/Customer Experience (UX/CX):Examine Branding activities through the lens of Customer Experience, Classify the diversity of CX and Branding profiles in an organization, Overcome the common pitfalls when mapping your Customer Journey.

Module: II

Branding and Customer Experience:Apply Customer Journeys to map out Branding Activities, Align brand guidelines across all customer touchpoints, Analyze and quantify your Customer Experience, Examine how, why and where branding efforts can break down during a Customer Journey, Evaluate the Brand's reflection in Purchase, Use and Customer Service, Using Behavioral Economics concepts to prioritize your efforts to align CX, Apply the Value Proposition Canvas to build empathy with Colleagues, Show the relationship between Employee Experience and a great CX, Analyze and mitigate the risks of outsourcing on CX, Illustrate the impact of ethics on your customer experience.

References:

https://www.mckinsey.com/business-functions/operations/our-insights/designing-and-starting-up-a-customer-experience-transformation

Project/Case Studies:

To create own Customer Journey Map (Details attached)

Human Resource Elective

Performance Management

Course Code	Course Title	Credits	Type (T+P+Pj)
MGHR 2317	Performance Management	4	2+0+2

Course Rationale:
The course will develop a generic understanding of the various human resource management systems and processes in place which coordinates and facilitates the strategic as well as day-to day operations of the organization.

Course Objectives:

- To develop and deploy performance management methods for supporting a strong management team that openly communicates with its employees.
- To explore the area of performance management, a strategic and integrated process that delivers sustained success to organizations by improving the performance of people.
- To provide the students with a firm grasp of the building blocks of performance management and measuring techniques and looks to provide a strong platform to the students for designing performance feedback, development of individuals to be upskilled professionally.

Course Outcomes:

After successful completion of this course, students will be able to

• Design an organization's performance management process that is compliant with law and supports organizational mission and strategy.

• Compare and contrast various organizational performance management programs and best practices and define attributes of effective performance management systems.

• Design job-related performance standards and performance indicators that reflect the employees' range of responsibilities.

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12	PSO1	PSO2	PSO 3
CO1	3	3		3									3	3	3
CO2	3	3		3									3	3	3
CO3	3	3		3									3	3	3
CO4	3	3		3									3	3	3
CO5	3	3		3									3	3	3

Course Contents:

Module: I

Introduction to Performance management: Contrasting performance management with performance appraisals. Strategic performance management system (PMS).Concepts and theoretical understanding of managing performance.

Module: II

Contemporary Methods of Performance Appraisal: Concepts of Self- appraisal. Contemporary Performance Evaluations such as Behavioural Anchored Rating Scales, 360 degree appraisal, MBO, Assessment Center, Score Cards. Issues in PAS - measurement and accuracy.

Module: III

Performance Management: Aims and role of PM system, Characteristics of ideal PMS, Performance Analysis. Performance Management Process.Performance Counselling and Review Discussion. System implementation: Defining performance and choosing a measurement approach, Improving quality of performance ratings (Dealing with rating errors).implementing a performance management system.

Module: IV

Managing Team and Organisational Performance.Potential and Organisational Performance Appraisal.Developing Skills to appraise individuals and teams.Linking Individual and Organisational Performance.

Text Books:

- Performance Management –Herman Aguinis

- Performance Management –Michael Armstrong

Reference Books:
- Performance Management –Robert. L. Cardy
- Performance Management-Prem Chadha
- Effective Performance Management-Costello, Sheila. J.
- High Performance Organisations-HR Perspectives-Raju, P.V.L
- Performance Management and Appraisal Systems-T.V.Rao

Organization Change and Development

Course Code	Course Title	Credits	Type (T+P+Pj)
MGHR 2318	Organization Change and Development	4	2+0+2

Course Rationale:
The course is designed to help the students to develop as potential change agents and organization development professionals.The purpose of this course is to learn to plan and implement change at the individual, group and organizational level.

Course Objectives:
- It is often said that change is the only reality, rest is subject to change. History has time and again proven that the process of change is inevitable in the progress of mankind.
- The ability of the human race to innovate has brought about radical transformation of society. All the countries of the world are undergoing some kind of change which is especially true in the context of organizations. At the same time we do notice resist to change due to its displacing effect overtime.
- As change in organization is inevitable, it's the primary responsibility of the managers to manage change towards development not deterioration.
- The purpose of this course is to learn to plan and implement change at the individual, group and organizational level.
- The course is designed to help the students to develop as potential change agents and organization development professionals.

Course Outcomes:
1. Apply the diagnostic models to determine the change requirements
2. Develop intervention strategies
3. Implement and lead the changing process in organizations

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12	PSO1	PSO2	PSO 3
CO1	3	3		3									3	3	3
CO2	3	3		3									3	3	3
CO3	3	3		3									3	3	3
CO4	3	3		3									3	3	3
CO5	3	3		3									3	3	3

Course Content:

Module: I

Introduction to Organizational Change, Nature of change, Forces of change, Types of change, Theories of Change (Life cycle, Teleological, dialectical, evolutionary, 'E'& 'O') and Models of Organizational Change (Lewin's change model; Planning model; Action research model; Integrative model).

Module: II

Resistance to change and minimising resistance. Role of change of Agent, Strategic leverages to Change, Managing change: Organizational Culture and leadership

Module: III

Introduction to Organizational Development, Process of organizational development: Entering and Contracting, Diagnosis, Analysis, Feedback, Design of Intervention

Module: IV

OD Interventions: Types- Human Process, Techno-structural, Human Resource Management Intervention, Strategic Change Interventions

Text Books :

- Management of Organizational Change-K. Harigopal, Response Books
- Theory of Organization development and Change- T. G. Cummings & C.G. Worli, Cengage Learning

Reference Books:

- Organisation Design and Development -Dr.Bhupen Srivastava

- Managing Organizational Change -V.Nilakant& S. Ramanarayan
- Change Management -Robert A. Paton & James McCalman
- Organization Effectiveness and Change -A.S.Sudan& Naveen Kumar
- Organization Development Wendwell-L. French & Cecil H.Bell Jr
- Leading change-John P.Kotter.

Human Resource Planning and Sourcing

Course Code	Course Title	Credits	Type (T+P+Pj)
MGHR 2319	Human Resource Planning and Sourcing	4	2+0+2

Course Rationale:

The course is intended to develop the much-required skills of managers in the field of human resource planning, procuring and engaging in an organization

1. Forecast the demand and supply of human resources to the organization
2. Carry out human resource planning in an organization
3. Carry out appropriate Recruitment and selection process

Course Objectives:

- The students will be able to understand the techniques for analysing the requirements & the availability of employees at all times throughout the organization
- To apply principles related to the demand & supply of labour
- To identify the role & responsibility in employee development process

Course Outcomes:

1. Forecast the demand and supply of human resources to the organization
2. Carry out human resource planning in an organization
3. Carry out appropriate Recruitment and selection process

Course Outcome to Program Outcome Mapping:

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2	PSO 1	PSO 2	PSO 3
CO1	3	3		3									3	3	3
CO2	3	3		3									3	3	3
CO3	3	3		3									3	3	3
CO4	3	3		3									3	3	3
CO5	3	3		3									3	3	3

Course Contents:

Module: I

Human Resource Planning: Concept, History of HRP and the emerging context. Activities required for HRP/Manpower Planning, Responsibilities of HR Department. Steps of HRP, Objectives of HRP, Approaches to HRP.

Module: II

HRP Process: HRP process outline, Time-scale of HRP forecasts, Methods and Techniques for Demand Management, Methods and Techniques for Supply Management, Contemporary Trends in managing Demand and Supply

Module: III

Recruitment and Selection: Objectives, factors affecting Recruitment (Internal & External), Recruitment Planning (Job Analysis, Sources and Methods), Yield-Ratio, Contemporary Tools of Recruitment.

Module: IV

Selection process: Models, Selection Tools: Preliminary Screening, Selection Tests (Knowledge, Intelligence, Skill and Personality), Interview, Background and Reference, Reliability and Validity of Selection Tools, Errors of Selection

Text Books :

- Human Resource planning—Dipak Kumar Bhattacharya; Excel Books.
- Human Resource & Personnel Management Text & Case—Aswathapa; TMH

Reference Books:

- Strategic HRP—VivekParanjpee

- Manpower planning—Gordon MC Beath.
- Manpower planning—GaretchStainer
- Gerard V. Mcmahon, Recruitment and Selection: How to Get it Right, Prentice-Hall India.
- Anastasi & S. Urbina, Psychological Testing, Prentice-Hall India

Training and Development

Course Code	Course Title	Credits	Type (T+P+Pj)
MGHR 2320	Training and Development	4	2+0+2

Course Rationale:
This course has focus on the development of human resource to make then adaptive the changing scenario with required training and development process

Course Objectives:
- The course will enable students to understand and appreciate the basic concepts and related terminology associated with training and development.
- The course will enable a comprehensive understanding of training as a strategic stimulator of organization performance.
- The course will enable the students to understand and explain the different stages of the training process and the challenges associated with it.
- The course will enable students to design a training Unit and impart training in selected areas

Course Outcomes:
Upon successful completion of this course, the student will demonstrate the ability to:

Course Outcomes:
1. analyze the training needs of an organization
2. design and implement context specific methods and techniques for imparting training
3. Evaluate the effectiveness of training programs and redesign

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12	PSO1	PSO2	PSO 3
CO1	3	3		3									3	3	3
CO2	3	3		3									3	3	3
CO3	3	3		3									3	3	3
CO4	3	3		3									3	3	3
CO5	3	3		3									3	3	3

Course Contents:

Module: I

Training and development an overview: Training objective and significance in organizations.Knowledge, skills and attitudes Acquiring Competencies via training route.

Module: II

Training Need Assessment:The rationale of conducting a TNA.When to conduct TNA.The process of conducting TNA. A three stage approach.

Module: III

Training design: The importance of setting objectives. Facilitation of Learning: Focus on Trainee. Facilitation of learning: Focus on Training design. Facilitation of Transfer : Focus on Training. Facilitation of Transfer: Focus on Organizational Intervention. Design outcomes. Design theories Gagne –Briggs Theory. Training methodology**:** On the Job training, off the job Training Methodology. Supervisory Training Executive Development

Module: IV

Training Evaluations and Validations: The four levels of Training evaluation and the measures.

Text Books :

- Blanchard,P.Thacker,J.W. (2007)Effective training Systems, strategies and Practices (3rd Edition) PHI New Delhi.
- Goldstein and Ford, (2007) Training in Organization(4th Edition) Cenage Learning, New Delhi.

Reference Books:

- Lynton, R. PareekhUdai (2005) Training and development Sage publications, New Delhi.
- Mello,J.(2001) Strategic Human Resource Management, Cenage Learning ,New Delhi.
- Agochiya,D (2007) Every Trainers Handbook, Sage, New Delhi.

Pharmaceutical Management Elective

Anatomy, Physiology & Health Education

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM 1656	Anatomy, Physiology & Health Education	4	4+0+0

Course Objectives

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

Course Outcome:

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

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3		3									3	3	3
CO2	3	3		3									3	3	3
CO3	3	3		3									3	3	3

CO4	**3**	**3**		**3**									**3**	**3**	**3**
CO5	**3**	**3**		**3**									**3**	**3**	**3**

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

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

Module II: Human body protection, support and movement

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

Module III: Human body control and regulation:

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

Module IV: Circulatory system

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

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

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

Recommended Books (Latest Editions)

1. Essentials of Medical Physiology by K. Sembulingam and P. Sembulingam. Jaypeebrothers medical publishers, New Delhi.
2. Anatomy and Physiology in Health and Illness by Kathleen J.W. Wilson, ChurchillLivingstone, New York
3. Physiological basis of Medical Practice-Best and Tailor. Williams & Wilkins Co,Riverview,MI USA
4. Text book of Medical Physiology- Arthur C,GuytonandJohn.E. Hall. Miamisburg, OH, U.S.A.
5. Principles of Anatomy and Physiology by Tortora Grabowski. Palmetto, GA, U.S.A.

6. Textbook of Human Histology by Inderbir Singh, Jaypee brother's medical publishers, New Delhi.
7. Textbook of Practical Physiology by C.L. Ghai, Jaypee brother's medical publishers, New Delhi.
8. Practical workbook of Human Physiology by K. Srinageswari and Rajeev Sharma, Jaypee brother's medical publishers, New Delhi.

Pharmacology

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM 1662	Pharmacology	4	4+0+0

Course Objectives:

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

Course Outcome:

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

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2		2									3	2	3
CO2	2	3		3									2	3	3
CO3	3	2		2									3	2	3
CO4	2	3		3									2	3	3
CO5	3	2		2									3	2	3

Module: I

1. Introduction to pharmacology, scope of pharmacology, Routes of administration of drugs, their advantages and disadvantage, Various processes of absorption of drugs

and the factors affecting them. Metabolism, distribution and excretion of drugs. General mechanism of drugs action and the factors which modify drugs action.

2. Pharmacological classification of drugs. The discussion of drugs should emphasise the following aspects:

Drugs acting on the central nervous system:

General anaesthetics, adjunction to anaesthesia, intravenous anesthetics.

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

Module-II

3. Drugs acting on autonomic nervous system.

(a) Cholinergic drugs, anticholinergic drugs, anticholinesterase drugs.
(b) Adrenergic drugs and adrenergic receptor blockers.
(c) Neurone blockers and ganglion blockers.
(d) Neuromuscular blockers, drugs used in myasthenia gravis.
4. Drugs acting one eye, mydriactics, drugs used in glaucoma.

Module-III

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

g. Antacids, anti ulcer agents

Module -IV

6. Chemotherapy of microbial disease: urinary antiseptics, sulfonamides, penicillins, streptomycin, tetracyclines and other antibiotics, antitubercular agents, antifungal agents, antiviral drugs, antileprotic drugs.

7. Chemotherapy of protozoal diseases, anthelminitc drugs.

8. Chemotherapy of cancer.

RecommendedBooks:

1. Essentials of Medical Pharmacology by K.D.Tripathy
2. Pharmacology and pharmacotherapeuticsbySatoshkar and Bhandarkar Pharmacology by Prasun K Das, S.K.Bhattacharya and P.Sen.
3. Text book ofPharmacology by S.D. Sethi

4. The Pharmacological basis of Therapeutics by Goodman and Gilman Pharmacology by Rang, Daleand Ritter.
5. Basic and Clinical Pharmacology by B.G.Katzung

Basic Epidemiology

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM 1663	Basic Epidemiology	2	2+0+0

Learning Objectives:

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

Course Outcome:

1.Measurement of health related data, their analysis and re-presentation is major contents of this course.

2. Course is useful to understand basic tools used for estimation health related data.

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2		2									3	2	3
CO2	2	3		3									2	3	3
CO3	3	2		2									3	2	3
CO4	2	3		3									2	3	3
CO5	3	2		2									3	2	3

Module: I

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

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

Module: III Epidemiological study designs, types of studies:

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

Module: IV Experimental Study- Drug Trials and Community Trails

Books Recommended:

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

Selling and Reporting Skills of Pharmaceutical Product

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM 1664	Selling and Reporting Skills of Pharmaceutical Product	4	4+0+0

Course Objectives:

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

Course Outcome:

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

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2		2									3	2	3
CO2	2	3		3									2	3	3
CO3	3	2		2									3	2	3

CO4	2	3		3									2	3	3
CO5	3	2		2									3	2	3

Module: I

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

Module: II

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

Module: III

- Pharmaceutical marketing channels: Designing channel, channel members, selecting the appropriate channel, conflict in channels, physical distribution management: Strategic importance, tasks in physical distribution management.

- Professional sales representative (PSR): Duties of PSR, purpose of detailing, selection and training, supervising, norms for customer calls, motivating, evaluating, compensation and future prospects of the PSR.

Module: IV

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

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

Reference:

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

Pharmaceutical Brand Management

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM 1669	Pharmaceutical Brand Management	4	4+0+0

Course Objectives:

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

Course Outcome

1. This course enables students to learn about the basics of brand and development of brand of a product.
2. This course enables students to learn about the channel of pharmaceutical marketing, effects of promotional strategies, and physician's prescriptions.

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2		2									3	2	3
CO2	2	3		3									2	3	3
CO3	3	2		2									3	2	3
CO4	2	3		3									2	3	3
CO5	3	2		2									3	2	3

Module: I
Fundamentals of Brand Management

Product: Concept, classification, levels, Product Mix.

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

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

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

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

Brand Strategy: Introduction and type of strategies.

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

Module: II Consumer Behaviour in Pharmaceutical Marketing

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

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

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

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

Module III: - Pharmaceutical Product Management

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

History of Product Management: from CAMAY to COREX

What is a Brand: Brand Name, Brand Image, Brand Value and Brand Awareness, Concept of Brand Equity, difference with brand valuation, Five dimensions of Brand Equity, key influencers of each dimension, prescription loyalty, prescriber coverage frequency, brand exposure through field-force promotion, Quality indicators, Promotional-mix, Benefits of building Brand Equity.

Brand Management as a strategic marketing function: role of a Pharmaceutical Brand Manager, the 'Little CEO' concept, 'Science meets Commerce' concept; Essential

differences between managing Pharmaceutical Brands and Consumer Brands, types of Pharmaceutical Brand Management organization structures, challenges of a Brand Manager; relation of Product Management Teams vis-à-vis Sales Force in Pharmaceutical companies;

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

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

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

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

Module V: International Marketing

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

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

Module VI: M&A in Pharmaceutical Industry

Objectives and Types of M&A

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

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

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

Text Books Recommended:

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

Pharmaceutical Sales and Distribution Management

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM 1670	Pharmaceutical Sales and Distribution Management	4	4+0+0

Course Objectives:

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

Course Outcome

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

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3

CO1	3	2		2									3	2	3
CO2	2	3		3									2	3	3
CO3	3	2		2									3	2	3
CO4	2	3		3									2	3	3
CO5	3	2		2									3	2	3

Module: I

Fundamentals of Sales Management

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

Roles and responsibilities of Medical Representatives (MR) and Managers

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

Module: II

Sales Force Decisions

Organization Structure - Field-strength, Managerial hierarchy, Field-force deployment Recruitment & selection of MRs and Managers, Field-force training, Induction Programme Performance Appraisal of Field-force

Module: III

Territory Management

Role of Planning, Analysis and Control

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

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

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

Module IV:

Distribution Management

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

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

Sales Tax, Form 'C', Form 'F', Road Permit/Way Bill, Online facilities

Recent Developments in the Pharmaceuticals Business World (Project-based Learning)

Text Books Recommended

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

Business Analytics

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM 1671	Business Analytics	4	4+0+0

Course Objectives:

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

Course Outcome :

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

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2		2									3	2	3
CO2	2	3		3									2	3	3
CO3	3	2		2									3	2	3
CO4	2	3		3									2	3	3
CO5	3	2		2									3	2	3

Module:I

Overview of Business Analytics:

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

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

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

Module 3: Data Issues:

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

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

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

Module 6: Decision Modelling and Forecasting:

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

Module 7: Fundamentals of R Language:

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

Text Books Recommended

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

Drug Regulatory Affairs & Intellectual Property Rights

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM 1672	Drug Regulatory Affairs & Intellectual Property Rights	4	4+0+0

Course Objectives:

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

Course Outcome

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

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2		2									3	2	3
CO2	2	3		3									2	3	3
CO3	3	2		2									3	2	3
CO4	2	3		3									2	3	3
CO5	3	2		2									3	2	3

Module: I

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

Module: II

National & International Drug Regulations:

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

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

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

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

Module V: Intellectual Property Rights & Regulations:

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

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

Text Books Recommended

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

Manufacturing Management

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM 1673	Manufacturing Management	2	2+0+0

Course Objectives:

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

Course Outcome

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

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2		2									3	2	3
CO2	2	3		3									2	3	3
CO3	3	2		2									3	2	3
CO4	2	3		3									2	3	3
CO5	3	2		2									3	2	3

Module:I

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

Module:II

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

Module: III

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

Module IV

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

Text Books Recommended

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

Financial Reporting & Analysis

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM 1674	Financial Reporting & Analysis	2	2+0+0

Course Objectives:

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

Course Outcome:

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

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2		2									3	2	3
CO2	2	3		3									2	3	3
CO3	3	2		2									3	2	3
CO4	2	3		3									2	3	3
CO5	3	2		2									3	2	3

Module:I

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

Module: II

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

Module III

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

Module IV

Effect of changes in accounting principles – sustainable earnings – recurring vs nonrecurring – operating vsnon operating

– continuing vs discontinued Effect of discontinuing operations – comprehensive income – revenue recognition – various forms of sales growth – internally-generated growth, growth from acquisitions. Ratio Analysis

– Financial statements forecasting – accounting policies, changes in accounting estimates and errors – events afterthe balance sheet date

Text Books Recommended

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

Pharmaceutical Advertising & Service Management

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM 1675	Pharmaceutical Advertising & Service Management	2	2+0+0

Learning Objectives:

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

Course Outcome

1. This course is designed to impart basic knowledge on managerial process designed to oversee and control the various advertising activities involved in a program to communicate with a firm's target market and which is ultimately designed to influence the consumer's purchase decisions.
2. This course enables students to know pharmaceutical service marketing, promotion of drugs, marketing plan market segmentation, scope of advertising, Marketing of Pharmaceutical and Hospital services

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2		2									3	2	3
CO2	2	3		3									2	3	3
CO3	3	2		2									3	2	3
CO4	2	3		3									2	3	3
CO5	3	2		2									3	2	3

Module:I

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

Module: II

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

Module III

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

Module IV

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

Text Books Recommended

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

Healthcare Management Elective

Hospital Administration

Course Code	Course Title	Credits	Type (T+P+Pj)
	Hospital Administration	4	3+0+1

Course Rationale: This course is intended to provide the basic knowledge of Hospital Administration

Course Objective:

- Acquire knowledge on various types hospitals and their role in health care
- Gain competency on roles and responsibilities to be carried out as a hospital administrator
- Management of different clinical and para clinical services
- Knowledge on audits and disaster management

Course Outcome:

On successful completion of the course the learner will be able to

- Analyze the structure and interdependence of healthcare system elements and issues using critical thinking to formulate innovative system designs.
- Create policy and processes and execute decisions in compliance with the legal, regulatory and ethical considerations inherent in managing healthcare systems and organizations
- Integrate concepts of ethics, privacy, law and regulation to achieve optimal organizational effectiveness

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3		3									3	2	3
CO2	2	3		3									2	3	3
CO3	3	3		3									3	2	3
CO4	2	3		3									2	3	3
CO5	3	3		3									3	2	3

Course Content

Module I:

Introduction to the hospital field: Definitions- hospital and medical care, types, control; Functions- medical care, prevention, professional education and research; Role of hospital in health spectrum; Hospitals in India: Classification & Accreditation- number, type, size, distribution, ownership, utilization, rations, trends, problems.

Module II:

Hospital Administration- Responsibilities, Roles & Functions of Hospital Administrator, Expected qualities of a good Hospital Administrator. The governing authority of administrator: business aspects; clinical aspects; channels of authority and communication. Importance of qualified v/s non-qualified, Medical v/s non-Medical Hospital Administrator.

Module III:

Problems of hospital administration and their expected solutions. Management of different clinical, para clinical, and support service departments and hospital hazards. Administration of Government (Rural, District & Municipal) Hospitals, private hospitals, corporate hospitals, voluntary & charitable hospitals. Role of Administration in Medical & Paramedical Education and Research. Disaster Management Programs.

Module IV:

Hospital Audits: Financial Audit, Clinical Audit, Tissue Audit Nosocomial Infection, Management of Biomedical Waste in Hospitals (Law & the Reality), Health Education in Hospital, Responsibilities of the hospital to the general public, Methods of Health Education in hospital and their importance. Patient Education through I.T. (CAPE), Inquiries and Disciplinary Actions. Recent trends in hospital administration in India and abroad

References

1. Hospital Administration by D.C.Joshi & MamtaJoshi, Publisher Jaypee Brothers
2. Hospital Administration Principles & Practices by Yashpal Sharma & R K Sharma, Publisher Jaypee Brothers

Digital Healthcare

Course Code	Course Title	Credits	Type (T+P+Pj)
	Digital Healthcare	5	3+0+2

Course Rationale: This course intends to provide knowledge on the use of digital platform to reframe healthcare facilities.

Course Objective:

Through this course, the digital reconstruction of healthcare for efficient patient care from hospitals and clinics to virtual settings can be understood.

Course outcome:

After completion of the course students will be able

- To conceptualize digital health and EHR
- To handle Big Data Analytics
- To manage the current digital health policy

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3		3									3	2	3
CO2	2	3		3									2	3	3
CO3	3	3		3									3	2	3
CO4	2	3		3									2	3	3
CO5	3	3		3									3	2	3

Course content

Module 1

Introduction to digital health and electronic health records (EHR): Components of an EHR system; applications of EHR to improve quality and safety of care; challenges and limitations of using EHR as a tool; Software used in healthcare system.

mHealth: mHealth and its relationship to eHealth and health informatics**;** potential benefits and challenges for mHealth; different types of mHealth and its applications.

Module 2

User-Centred Design: Value of using user-centred design; key components of a HCD (Human Centred Design) approach.

Artificial Intelligence: Key concepts of artificial intelligence, deep learning and machine learning; Understand the basic scientific principles of machine learning; Identifying specific cases for machine learning in healthcare; ethical and governance issues of machine learning in healthcare.

Module 3

Data Registries, Electronic Data Collections and Datasets: Digital datasets and its importance; importance of collating data to create a global registry.

Big Data Analytics and Digital Development: Key principles of healthcare data; key terminologies; current trends and approaches related to healthcare data; needs of stakeholders in relation to the analysis of healthcare data.

Module 4

Digital health policy, regulation and governance: Drivers to improve patient engagement in healthcare; challenges in engaging patients using digital technology; policy barriers in the adoption of patient facing technologies; value of data and the importance of cybersecurity.

Module 5

Digital Mental Health: Role of digital health in supporting mental health; benefits and challenges of providing mental health care digitally; emerging evidence for digital mental health care; evaluate and endorse digital mental health interventions; impact of digital health interventions.

Suggested Readings:

Paul Cerrato and John Halamka. The Digital Reconstruction of Healthcare: Transitioning from Brick and Mortar to Virtual Care; CRC Press (2021).

Rajendra Pratap Gupta. Digital Health: Truly Transformational; Wolters Kluwer (2021).

The future of healthcare: our vision for digital, data and technology in health and care - GOV.UK [Internet]. London; 2018 [cited 2018 Oct 27].

Bauer J (2018). Launching the Empower the Person Road Map.

Tang P, Smith M (2016). Democratization of health care. *JAMA*; 316(16):1663–4.

Chang S. Health Care — A Final Frontier for Design.

Lee J. Patient-Centered Participatory Design.

NHS Digital. Data collections and datasets (2019).

Duggal R, Brindle I, Bagenal J (2018) Digital healthcare: regulating the revolution. BMJ;360:k6.

Management of Quality

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM4104	Management of Quality	2	1+0+1

Course Rationale: Management of quality in health sector is of paramount importance. This course intends to provide knowledge on quality management in health care sector.

Course Objective:

- To provide basic knowledge on the concepts of Healthcare Quality Management
- Carry out continuous improvement of quality patient care.
- Knowledge on quality control measures

Course Outcome:

On successful completion of the course the learner will be able to

- Prepare quality policy and objectives for hospitals
- Plan and organize quality accreditation

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3		3									3	2	3
CO2	2	3		3									2	3	3
CO3	3	3		3									3	2	3
CO4	2	3		3									2	3	3
CO5	3	3		3									3	2	3

Course Content

Module I:

Definition and Basic Concept of Quality Management, Quality Policy and Objectives. Organization for Quality, Quality Circles.

Module II:

Economics of Quality. Quality Assurance, Zero Defect Concept, Quality Specifications.

Module III:

Statistical Aids in Limits and Tolerances. Inspection. Manufacturing Planning for Quality.

Module IV:

Sampling Plans for Attributes and Variables and Various Control Charts. Total Quality Control Accreditation: requirement, procedures, exercises and benefits.

References:

1. Reference Books: Raandi Schmidt J. Trumbo and R. Jonson, Quality in Health Care Sector – ASQC Quality – Press.

2. Quality Improvement in Health Care, 2nd Ed, Nelson Thrones

Legal and Ethical Issues for Hospitals

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM4105	Legal and Ethical Issues for Hospitals	4	3+0+1

Course Rationale:

This course intends to acquaint the students with various legal aspects concerning type and character of the health care organizations and its duties towards patients and its employees. To familiarize the students in matters of liability of hospital medical negligence and medical malpractice in diagnosis, administration of drugs, surgery etc.

Course Objective:

- To provide knowledge on establishment, registration and regulations of healthcare organizations
- Appreciation and implementation of Hospitals and Labour Enactments
- Acquainted with hospital services and laws
- Awareness about medico-legal issues and liability of hospitals

Course Outcome:

On successful completion of the course the learner will be able to

- Handle medico-legal issues effectively

- Ensure appropriate patient relationship
- Handle employee unions

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3		3									3	2	3
CO2	2	3		3									2	3	3
CO3	3	3		3									3	2	3
CO4	2	3		3									2	3	3
CO5	3	3		3									3	2	3

Course Content

Module I:

Establishment, Registration and Regulation of Health Care Organization: Registration and Regulation of Healthcare organization under Central Act; Formation of Health care Organization under Partnerships and Corporate basis (private and public) and compliance with Medical Council of India Act.

Module II:

Hospitals and Labour Enactments: Hospital as an Industry – Unrest in Hospitals – Dispute Settlement Mechanism, Arbitration, Conciliations and Adjudication of Disputes; Role of Trade Unions, Unfair Labour Practices and Victimization – Disciplinary Actions – Requisitions of a valid disciplinary enquiry – Service Conditions – Retrial benefits – Social Security and Insurance.

Module III:

Hospital Services and Law: Contractual obligations in Hospital Services – Requisites of a valid contract – Hospital as a 'bailee' – Physicians – Patient relations – duties towards patients by medical and Para-medical staff – medical ethics and code of conduct to be observed in rendering hospital services, MCI Guidelines, OATHS.

Module IV:

Medico Legal Issues: Police Investigation – Giving evidence – Court deliberations organ transplantation – Euthanasia (mercy killing) – Diagnosis, prescriptions and administration of drugs – Post treatment serves – Anaesthesia, Surgery and sale of drugs.

Liability of Hospitals: Contractual liability – Award of damages and principles relating thereto, criminal liability and defences available to hospitals and medical staff. Tortuous liability and vicarious liability. Legal remedies available to patients. Remedies under contract law, tort, criminal law and consumer protection act. CP Act, RTI.

References:

1.Anoop Kaushal K, Medical negligence and legal remedies, 3rd edition, universal law Pllblishcr.5. New Delhi, 2004.

2.Avtar singh, company law, 13th edition, Taxmann publishers, Lucknow, 2001.

3.Commercial Laws – N.D.Kapoor.

Marketing of Hospital Services

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM4106	Marketing of Hospital Services	4	2+0+2

Course Rationale:

This course will provide insight into the application of marketing principles in hospital industry. Marketing of services provided by a hospital is required to growth and sustainability of health care organization.

Course Objective:

- Provide detail knowledge on health care services
- Acquainted with pricing and distribution of health care services
- Promotions of health care services

Course Outcome:

On successful completion of the course the learner will be able to

- Handle challenges in hospital services marketing
- Design new hospital services
- Engage appropriate channels for hospital service marketing
- Use marketing communication with technical knowledge

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3

CO1	3	3		3									3	2	3
CO2	2	3		3									2	3	3
CO3	3	3		3									3	2	3
CO4	2	3		3									2	3	3
CO5	3	3		3									3	2	3

Course Content:

Module I:

Introduction to Marketing of Hospital Services: Concept of Services; Characteristics of Hospital Services, Challenges in Hospital Services Marketing.

Module II:

Hospital Services: Structure of Hospital Services; Service Product Model; Designing new hospital services.

Services Marketing Mix: Introduction to the Hospital Services Marketing Mix

Module III:

Pricing: Role of price in communicating hospital service value and quality; Factors involved in pricing hospital services; Service pricing methods and strategies.
Distribution: Marketing channels for hospital services; Distribution strategies for hospital services; Challenges in distribution of hospital services; Role of Internet in distribution of hospital services.

Module IV:

Promotion: Integrated marketing communications for hospital services; Creating hospital service promises; Using marketing communications tools for hospital service promotion

People: The key role of employees in a hospital service business; Concept of Service encounter – Moment of Truth; Managing hospital service employees.
Physical evidence: Hospital Service Environment; Nature of physical evidence; Importance of physical evidence in hospital services; Managing Hospital Service Clues.
Process: Hospital Service as a process; Different process aspects and managerial challenges; Strategies for managing hospital service process – Blue Printing; Co-creation: Customers as co-producers ; Self Service Technologies, Managing hospital experience.

References:

1. *Services Marketing-People, technology and strategy* by Christopher Lovelock, Jochen Wirtz and Jayanta Chatterjee, Pearson education 2006.
2. *Services Marketing* by K. Rama Mohana Rao, Pearson education 2005
3. *Services Marketing* by S.M. Jha,Himalaya publishers,2006.

Essentials of Healthcare Marketing by Eric N.Berkowitz,Jones& Barrett publishers,2006

Clinical, Diagnostic & Therapeutic Services

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM4107	Clinical, Diagnostic & Therapeutic Services	4	2+0+2

Course Rationale: The primary aim of this course is to acquaint students to Various Clinical Services provided by healthcare organizations.

Course Objective:

- Provide knowledge on systems of medicine
- Making students acquainted with clinical, diagnostic and therapeutic terms
- Understanding on disease and epidemiology

Course Outcome:

On successful completion of the course the learner will be able to

- Design and manage secondary and tertiary systems of medicine
- Maintain hospital records appropriately
- Handle specialist services effectively

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3		3									3	2	3
CO2	2	3		3									2	3	3
CO3	3	3		3									3	2	3
CO4	2	3		3									2	3	3
CO5	3	3		3									3	2	3

Course Content

Module I:

Common Terms of Healthcare Management: Terms related to levels of healthcare; Primary; Secondary and Tertiary – Systems of Medicine – Ayurveda, Siddha, Unani, Homeopathy, Yoga, Naturopathy, Reiki, etc. – Preventive and Curative Medical Care – General and Specialty Hospitals – Pharmacopeia (in patient and out patient)

Module II:

Speciality-wise terminology – Pathology terms of Common Use – Clinical, diagnostic and therapeutic terms – Paediatric services – Dental – Psychiatric.

Module III:

Casualty and Emergency – Neurology – Obstetric and Gynaecology – Dermatology intensive care – Coronary care services.

Module IV:

Medical Records – Admission – Billing – Nursing Records – Diagnostic Records – Infection Control Records – Maintenance of Intensive Care Units Records.

Housekeeping Records – Food Records – Engineering Records – Maintenance Records – Security Records – Fatal Documents – Mortuary Maintenance Records – Transportation – Medico Legal Records.

Module V:

Concepts of Disease: Disease and Epidemiology; Aims of Epidemiology; Principles of Epidemiology; Methods of Epidemiology; Natural History of Diseases; Current Diseases-Concepts; Food and Water Borne Diseases; Concepts of Prevention and Mode of Intervention; Changing Pattern of Diseases

References:

1. Clinical Laboratory Management by Lynne S Garcia

Health Policy and Health Care Management

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM4108	Health Policy and Health Care Management	4	2+0+2

Course Rationale:

The course aims at providing knowledge on Health policies and the concept of health care management

Course Objective:

- Knowledge on health policies and healthcare programs
- Determinants of health and prominent organizations for health

Course Outcome:

On successful completion of the course the learner will be able to

- Implement health policies
- provide health and family welfare services
- Engage appropriately with different health organizations

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3		3									3	2	3
CO2	2	3		3									2	3	3
CO3	3	3		3									3	2	3
CO4	2	3		3									2	3	3
CO5	3	3		3									3	2	3

Course content

Module I:

Demography Trends: World Population Trends; Indian Population Trends; Demographic Structure and Health Implications; Health Policy - Meaning and Need; National Health Policy - Features: Objectives, Current Scenario; Preventive and

Promotive Aspect of Health; National Health Programmes in India; Planning under Five Year Plans and Plan Outlays; Cancer Control Programme.

Module II:

Health Care: Concept of Health Care; Levels: Primary, Secondary and Tertiary; Present Status of Health Care System in India; Structure and Classification of Hospitals; Hospital Services

Module III:

Determinants of Health: Life Style; Socioeconomic Conditions; Economic Status; Heredity; Health and Environment; Regulation; Health and Family Welfare Services

Module IV:

Organizations for Health: Voluntary Health Agencies in India; Indian Red Cross Society; Bharat Sevak Samaj (BSS); Central Social Welfare Board (CSWB); Indian Council for Child Welfare (ICCW); Family Planning Association of India; National Tuberculosis Control Programme; National Programme for Control of Blindness; All India Women's Conference (AIWC); Hind Kusht Nivaran Sangh; International Organisations

References:

1. Peter R. Kongstvedt, Essentials of Managed Health Care, 2007.
2. Sherman Follard, Allen C. Goodman, Mison strw, The Economic of Health and Health Care, 2005.

Planning of Hospital and Core Services

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM4109	Planning of Hospital and Core Services	4	2+0+2

Course Rationale:

The course is intended to provide knowledge on planning and implementations of core services pertaining to the healthcare organizations

Course Objective:

- To understand the management and organization of various departments in the

hospital sector.

- To understand the other clinical services such as surgical and allied services in the hospital sector.

Course Outcome:

On successful completion of the course the learner will be able to

- Students will be able to design and implement overall health care delivery system and
- Adhere to the procedures adopted in the hospital sector.
- Students will be able to manage and organize various departments in the hospital.

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3		3									3	2	3
CO2	2	3		3									2	3	3
CO3	3	3		3									3	2	3
CO4	2	3		3									2	3	3
CO5	3	3		3									3	2	3

Course content

Module I:

Introduction to Patient Care: Meaning of Patient and Patient Care; Hospitals; Important Issues in Patient Care service

Module II:

Planning for General Hospital Service: Transportation Services; Mortuary Services; Communication System

Module III:

Evaluating Resources for Services: Front Office Services; Outpatient Services; Inpatient Services and Ward Services; Accident and Emergency Services; Billing Services

Module IV:

Clinical Support Service: Hospital Services; Nursing and Administration Services; Supportive Services; Clinical Services; Operation Theatre; Intensive Care Units: Radiology; Physical Therapy; Occupational Therapy; Recreational Therapy; Speech and Hearing Therapy; Telemedicine; Virtual Operation Theatre and Robotic Surgery

Module V:

Non- clinical Support Service: Blood Bank and its Management; Pharmacy; Laundry Services; Housekeeping Services

Module VI:

Administrative and other important Services: Staff Health; Nutrition and Dietary Services; Hospital Administration; Teaching and Training Services; Medical Tourism

REFERENCES

1. Arnold D. Kalcizony& Stephen M. Shortell, Health Care Management.
2. Carolyn SemplePiggot& Carolyn S.Piggot, Business Planning for Health Care Management.
3. David E.Cope, Organization Development and Action Research in Hospitals.
4. Perspectives in health care - Nancy North - Macmillan Press, U.K

Hospital Architecture, Planning and Maintenance

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM4110	Hospital Architecture, Planning and Maintenance	4	2+1+1

Course Rationale:

This course is intended to provide basic knowledge on hospital architecture, facility location and hospital maintenance

Course Objective:

- To provide the departmentalization framework of Hospitals
- To provide the information on project formulation

Course Outcome:

On successful completion of the course the learner will be able to

- Design departmentalization of Hospitals based on the service
- Implement hospital pre-commissioning stage - commissioning stage - post commissioning stage

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3		3									3	2	3
CO2	2	3		3									2	3	3
CO3	3	3		3									3	2	3
CO4	2	3		3									2	3	3
CO5	3	3		3									3	2	3

Course content

Module I:

Functional plans for Hospital construction and Site: Planning stage: Role of Architect; working drawings and legal formalities; Hospital Site; Five Steps towards Efficiency; Challenges in Facilities Engineering and Maintenance

Module II:

Facility Location and Layout: Facility Planning; Importance of Location; Global Level; Macro Level; Micro Level; Locations of Different Departments in Hospital; Principles of a Good Layout; Ward Planning; Plant Layout Factors; Types of Layout; Layout facilities in Hospital; Ward Management; Blood Bank; Diagnostic division; Oxygen plant; IPD, OPD

Module III:

Maintenance Information System: Computerized Maintenance Management System; Replacement Policy; Bio-Medical Technology; Calibration Tests

Module IV:

Maintenance Management: Maintenance function; Maintenance Programmers in Hospitals; Need and Significance; Types of Maintenance Systems; Equipment; Concept of Failure; Documentation and Records; Maintenance Planning

Module V:

Hospital Maintenance Items: Spare parts stocking policies for Capital items; Annual Maintenance Contact (AMC); Electrical Maintenance, Fire & Safety, Sanitary

References:

1. Business Planning for health care management - Piggott, Carolyn Semple - U.K Open University Press
2. Health Sector Reform in Developing Countries - Peter Berman, Harvard University Press, 1995.

3. Health and Social organization: Towards a health policy for the 21st century - Blane, David, Brunner, Eric - Calrendon Press
4. Modern Trends in Planning and Designing of Hospitals- Kant Gupta, Shakti Kumar Gupta- Jaypee Brothers Publishers.

Purchase Management and Record keeping

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM4111	Purchase Management and Record keeping	4	2+1+1

Course Rationale:

The course will be providing knowledge on purchasing and store management.

Course Objective:

- To provide the understanding of Hospital Stores operations and its management
- To understand the procedure for Equipment Planning and Procurement
- To provide the details of the record keeping, management and its types

Course Outcome:

On successful completion of the course the learner will be able to

- Implement Purchasing & Logistics Management and its application in the hospital.
- Manage record keeping, control systems in hospital industry.
- Follow the procedures involved in Equipment Planning and Procurement
- Apply the best practices in hospitals.

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3		3									3	2	3
CO2	2	3		3									2	3	3
CO3	3	3		3									3	2	3
CO4	2	3		3									2	3	3
CO5	3	3		3									3	2	3

Course content

Module I:

Hospital Store Organization: Storekeeping**;** Location and Layout of Stores; Relevance and importance of Stores; Store system; Functions and responsibilities of Stores; Duties and responsibilities of storekeeper.

Module II:

Store Organization in Hospital: Organization structure; Structure of Pharmacy services; Staff structure; Policy and procedure; Authorization and delegation; Elements of good store organization; Centralization and decentralization of Stores

Module III:

Stores Accounting and Stock Verification:

Store accounting and records; Merits of proper accounting system; LIFO (Last In First Out); FIFO (First In First Out); Average Price Method Stock Verification; Storage of Special Drugs and Medicines.

Module IV:

Inventory: Manufacturing; Functions of Inventory; Applications of Inventory Syste; Need for Control; Objectives of Inventory Control; Scope and importance; Problems of inventory control; Different types of Hospital Inventories; Hospital Audits; Financial Audit; Clinical Audit; Tissue Audit; Nosocomial Infection; Management of Biomedical wastes in Hospitals (Law and Reality)

Module V:

Record Keeping: Introduction to Medical Record, Types of Medical record, Record maintenance, Medical record Audit.

References

1. Stores management-Second edition - Mr. K S Menon Published by Macmillan India Ltd
2. An Introduction to Documentary Credits - Mr. Rupnarayan Bose Published by MacmillanIndia Ltd
3. Supply Chain Management -Mr. B S Sahay - Published by Macmillan India Ltd
4. Materials Management - Gopalakrishnan & Sunderasan
5. Industrial Engineering - O.P.Khanna

Hospital Support System

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM4112	Hospital Support System	4	3+0+1

Course Rationale:

The course is intended to provide knowledge on hospital support system for effective management of healthcare organizations

Course Objective:

- To provide the concept of management & organization of Clinical Services in the Hospital
- To provide the map of planning and organizing the support services
- To provide the steps in organization and management of utility services
- To provide the understanding of Hospital and Health services evaluation

Course Outcome:

On successful completion of the course the learner will be able to

- Manage the administrative aspects of multiple clinical services in the Hospital
- Handle support services in the Hospital effectively
- Mange services in crisis situation
- Handle disaster management and operations management of utility services in Hospital

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3		3									3	2	3
CO2	2	3		3									2	3	3
CO3	3	3		3									3	2	3
CO4	2	3		3									2	3	3
CO5	3	3		3									3	2	3

Course content

M

odule I:

Introduction to organization of health services in India - Central, States, Defence, Railways and other PSUs- Voluntary agencies- Comprehensive health projects with Rural Development- International organizations related to health services.

M

odule II:

M

anaging Engineering & Utility Services: Organizing and Managing Facility Support Services - Laundry - Housekeeping - Pest control - Managing the Estate (Hospital Security) - Recent trends in Disaster Management - Hospital Engineering Services (Plumbing, Electricity, Civil, A/C, Lifts) - strategies of hospital equipments- planning and Selection- purchase procedure- installation and commissioning-hospital equipment repair and maintenance quality control.

Planning & organizing of Support Services: Imaging - CSSD - Laboratory - Blood Bank - Diet - Medical Records - Mortuary - Pharmacy - Admission & Discharge Procedure - Billing Procedure - Bio Medical Equipments Planning- Ambulance Services.

Module III:

Evaluation of Hospital & Health Services: Accreditation - Setting of Objectives - Health Indicators - Applying Economic Concepts to Service Evaluation - Assessing Patient Satisfaction - Techniques of Hospital Services Evaluation - Indicators of Hospital Efficiency & Effectiveness - Evaluation of Quality of Hospital Services - Management of Hazard & Safety in a Hospital Setup - Nursing Services in a Hospital - Current Issues in Hospital Management - Telemedicine - Bio-Medical Waste Management - Organ Transplantation - Rehabilitation Services - Health Insurance & Managing Health Care - Medical Audit - Hazard and Safety in a hospital Setup.

M

odule IV:

M

anaging Services in Crisis: Epidemiological Triad, Levels of Disease Prevention- Disaster Management/ Disaster Plan- Firefighting- Dealing with crisis situations- Natural disasters -floods, earthquakes etc.- Mob violence against medical establishments- Bomb threat- Terrorist strike- Political agitation- Mass casualties

REFERENCES

1. Arnold D. Kalcizony & Stephen M. Shortell, Health Care Management.
2. Carolyn SemplePiggot & Carolyn S.Piggot, Business Planning for Health Care Management.
3. David E.Cope, Organization Development and Action Research in Hospitals.
4. Perspectives in health care - Nancy North - Macmillan Press, U.K

Introduction to Quality and Patient Safety

Course Code	Course Title	Credits	Type (T+P+Pj)
CUTM4113	Hospital Support System	5	3+0+2

Course Rationale:

The course is intended to provide knowledge on improving the quality of health service pertaining to patient safety.

Course Objective:

- Knowing patient safety
- Report Distribution system
- Laboratory infection control Policy
- Bio-Medical waste management
- Understanding Patient rights
- ISO Policy for medical laboratory

Course Outcome:

On successful completion of the course the learner will be able to

- Adhere to the rights and duties of patient
- Handel the right and duties of lab technician
- Manage lab focusing on various policies
- Implement infection control procedure

Course Outcome to Program Outcome Mapping:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3		3									3	2	3
CO2	2	3		3									2	3	3
CO3	3	3		3									3	2	3

CO4	2	3		3									2	3	3
CO5	3	3		3									3	2	3

Course content

Module-I (11 Hrs)

Human factor Engineering, Patient safety, Health literacy, Report distribution system, Error in reporting system, responding to adverse events, Investigation of error/ Root cause analysis, Medical Error, The science of safety

Practice: Safety precaution in laboratory, Report distribution, Prescription reading

Module-II (11 Hrs)

Team work and communication, Leadership, Quality control policy, Major development and evaluation in diagnostic division, Clinical establishment act policy, National accreditation board of laboratory, ISO Policy for medical laboratory, Fire and safety policy for medical laboratory

Practice: Fire Safety in lab, Documentation for Lab establishment

Module-III (13 Hrs)

Personal protective equipment in the laboratory, AIDS and laboratory safety, Safety protection in lab in STD and other infectious disease., Biomedical waste management, Patient care in medical laboratory, Patient rights., Counselling of patient during phlebotomy, First aid in medical laboratory service.

Practice: PPE, Bio-Medical waste management, First-Aid, Patient Counseling

Suggested Readings:

1. Understanding the patient safety (LANGE clinical medicine)
2. Textbook of Clinical laboratory methods and diagnosis by Gradwohls, Publisher Mosby
3. Medical laboratory technology Vol.1 by K. L. Mukherjee, 2007, Publisher Tata McGrawHill
4. Textbook of medical laboratory technology by Praful B Godkar, Publisher Bhalan

5. Medical laboratory science theory and practice by J Ochei and Kolhatkar, 2002, Tata McGraw- Hill, Publisher TBS

University-wide Domains

Data Analytics- Visualisation

Code: DACU2200 Credit: 0+14+6

Please refer to the Link: http://courseware.cutm.ac.in/courses/data-analytics-visualisation/

Business Analytics

Code: BACU2210 Credit: 0+12+6
Please refer to the Link: http://courseware.cutm.ac.in/courses/business-analytics/

Data Science and Machine Learning

Code: MLCU2000 Credit: 2+9+15

Please refer to the Link: http://courseware.cutm.ac.in/courses/17927/

Gaming and Immersive Learning (AR & VR)

Code: ARCU2060 Credit: 5+5+10
Please refer to the Link: http://courseware.cutm.ac.in/courses/gaming-and-immersive-learning-ar-vr/

GO-TO-MARKET

Code: GMCU2140 Credit: 4+10+8
Please refer to the Link: http://courseware.cutm.ac.in/courses/16600/

Food Processing

Code: FPCU2310 Credit: 3+15+11
Please refer to the Link: http://courseware.cutm.ac.in/courses/food-processing/

Agri-Business Management

Code: ABCU2320 Credit: 2+0+21
Please refer to the Link: http://courseware.cutm.ac.in/courses/agri-business-management/

Commodity and Food Storage

Code: FSCU2330 Credit: 3+15+11
Please refer to the Link: http://courseware.cutm.ac.in/courses/commodity-and-food-storage/

SKII COURSES

Please refer to the Link**:** http://courseware.cutm.ac.in/categories-courses/skill-courses/

Summer Internship

Code: CUTM1224 Credit:0+0+4

Financial Analytics Syllabus

Credits: 24 (8+8 +8)

Course	Credit	T+P+P
Introduction to Business Analytics with Power BI	4	0+2+2
Advanced Data Analytics with Power BI	4	0+2+2
Financial and Statistical Analytics for Decision Making	3	2+1+0
Financial Valuation Modelling and Analytics	3	2+1+0
Financial Data Analytics and Visualization	3	2+1+0
Banking Intelligence, Credit Analysis, and Financial Services Analytics	3	2+1+0
Financial Analyst Capstone Project	4	0+0+4
Total	24	8+8+8

Introduction to Business Analytics with Power BI

Credits: 4 (0+2+2)

Course Objectives

- To introduce students to the role of data analytics in business decision-making.
- To equip learners with the skills to connect, clean, transform, and visualize data using Power BI.
- To foster an understanding of domain-specific applications of Power BI.

Course Outcomes

- Navigate the Power BI interface and load datasets from various sources.
- Clean, transform, and shape raw datasets using Power Query.
- Build basic data models and relationships.
- Develop foundational DAX expressions (measures and calculated columns).
- Design simple, interactive dashboards for business storytelling.

Module 1: Introduction to Power BI and Business Analytics

- Understanding Business Analytics
- Power BI Desktop Interface & Workflow
- Data Connection – Excel, Web, Databases

Module 2: Data Preparation using Power Query

- Cleaning and Formatting Data
- Transforming Rows, Columns, Types
- Data Profiling, Filtering, Merging

Module 3: Modeling and Basic DAX

- Star Schema Design, Relationships

- Calculated Columns & Basic Measures

Module 4: Visual Analytics and Storytelling

- Charts, Slicers, Filters, KPIs
- Visual Design and Storytelling

Project

Design a dashboard and report using domain data (HR/Finance/Marketing/Agri).

Tools

- Power BI
- Excel / CSV Sources
- Kaggle Datasets

References

Microsoft Learn: Power BI Fundamentals

Advanced Data Analytics with Power BI

Credits: 4 (0+2+2)

Course Objectives

- To deepen students' understanding of DAX and advanced modeling.
- To equip learners with the ability to build time-aware analytics.
- To deploy Power BI reports using best practices for governance and security.

Course Outcomes

- Write and troubleshoot complex DAX expressions.
- Apply time intelligence functions to create YTD, MTD, MOM analytics.
- Design optimized, interactive dashboards using bookmarks and tooltips.
- Publish reports and set up refresh schedules and security roles.
- Execute a complete analytics solution from data to insights.

Module 1: Advanced DAX and Data Modeling

- Recap and Deep Dive into Relationships
- IF, SWITCH, CALCULATE
- Variables and Evaluation
- Hierarchies and Dimensions

Module 2: Time Intelligence and Optimization

- YTD, MTD, QTD, MOM Calculations
- Model Optimization and Performance Tuning

Module 3: Domain-Specific Case Studies

- Case Study – HR/Finance/Marketing/Agribusiness

Module 4: Report Interactivity and Deployment

- Bookmarks, Drillthroughs, Tooltips
- Power BI Service – Publishing, Workspaces
- Implementing Role-Level Security

Project

Build and publish an enterprise-grade analytics dashboard with full interactivity and security.

Tools

- Power BI
- Excel / CSV Sources
- Kaggle Datasets

References

Microsoft Learn: PL-300

Financial and Statistical Analytics for Decision Making

Credits: 3 (2+1+0)

Course Objectives

1. To enable students to acquire financial and statistical data analysis skills using Power BI and Excel for decision-making in real-time business scenarios.
2. To equip learners with capabilities to visualize, model, and forecast financial performance using stock market and derivative datasets.
3. To train students in creating interactive dashboards and storytelling for communicating financial insights and risk factors effectively.

Course Outcomes

By the end of this course, students will be able to:

1. Identify, collect, and clean financial datasets from multiple sources using Power BI and Excel.
2. Perform exploratory and time-series analysis on stock and derivative data to uncover actionable insights.
3. Apply predictive and statistical models to forecast asset prices and portfolio performance.
4. Develop interactive financial dashboards to communicate key metrics and decision insights.
5. Execute capstone projects involving risk modeling and financial reporting using dashboards.

Module 1: Foundations of Financial Data and Analytics (Theory + Practice)

- Introduction to Financial and Statistical Data Analytics
- Types of Financial Data: Stock Prices, Derivatives, Indexes, NAVs
- Overview of Financial Instruments (Stocks, Bonds, Options, Futures)
- Efficient Frontier and Portfolio Theory
- Risk-Return Measures: Sharpe Ratio, Treynor Ratio, Jensen's Alpha
- Data Collection Techniques: APIs, Excel Plugins, Web Scraping

Practice:

- Collecting data from NSE/BSE, Yahoo Finance, using Excel plugins and Power BI connectors
- Importing datasets from Kaggle (Global Stock Market, Options Chain, Crypto Prices)
- Structuring data tables for analysis (price, volume, volatility)

Module 2: Exploratory Data Analysis, Cleaning and Visualization

- Data Cleaning Techniques: Handling missing values, duplicates, outliers
- Time-Series Structuring: Aggregating financial data (daily/weekly/monthly)
- EDA Techniques: Summary Statistics, Correlation Analysis, Volatility Measures
- Visualization Best Practices: Designing Financial Dashboards in Power BI
- Visualizing Trends: Moving Averages, Bollinger Bands, Volatility

Practice:

- Power BI Dashboards: Sectoral volatility, implied volatility trends
- Visual Exploration: Price bands, trends, historical price movements
- EDA and data transformation using Power BI Query Editor and DAX

Module 3: Statistical & Predictive Modelling for Financial Decision Making (Theory + Practice)

- Descriptive Statistics: Mean, Median, Mode, SD, Z-scores, Skewness, Kurtosis
- Statistical Analysis: Hypothesis Testing, Distribution Fitting
- Regression Models: Simple, Multiple (Beta Estimation, ROI Models)
- Time Series Forecasting: Stationarity, ARIMA, Holt-Winters
- Volatility Modeling: ARCH, GARCH Models
- Introduction to Monte Carlo Simulation for Risk Assessment
- Basics of Option Pricing Models: Black-Scholes

Practice:

- Forecasting Option Premiums and NAV using ARIMA
- Volatility modeling using GARCH with Power BI integration via Excel
- Regression Analysis using Excel ToolPak/Real Statistics
- Create predictive dashboards in Power BI

Module 4: Financial Storytelling, Risk Analysis and Capstone Project (Project Focused)

- Principles of Data-Driven Decision-Making
- KPI Communication and Dashboard Storytelling
- What-If Analysis: Data Tables, Scenario Manager, Goal Seek
- Portfolio and Derivative Risk Dashboards
- Reporting Risk-Adjusted Performance (Sharpe, VaR)
- Interactive Reporting using Power BI Bookmarks, Tooltips
- Capstone Project Planning and Execution

Practice:

- Develop sector-wise portfolio dashboards
- Create stock forecast model (ARIMA) and volatility analysis (GARCH)
- Risk dashboards showing VaR, Beta, and Sharpe Ratios
- Final Capstone Project: From data sourcing to dashboard storytelling with decision insights

Suggested Datasets & Sources

- Kaggle: Global Stock Market Data, NSE Option Chain, Mutual Fund NAVs
- Yahoo Finance: RELIANCE, NIFTY50, INFY, HDFC stock and derivative data
- Moneycontrol: Sector-wise financial ratios, Option Greeks, F&O Data
- Excel Add-ins: ToolPak, Real Statistics, NumXL for advanced modeling

Financial Valuation Modlling and Analytics

Credits: 3 (2+1+0)

Course Objectives

1. To develop student expertise in building complete financial models and valuations using real company data.
2. To integrate Power BI for visualization of financial insights and key performance metrics.
3. To train students in conducting financial analysis, valuation, scenario building, and interpretation using interactive dashboards.

Course Outcomes

By the end of the course, students will be able to:

1. Analyze financial reports and extract strategic data for modeling.
2. Build historical and projected financial statements.
3. Perform valuation using DCF, relative, and precedent transaction methods.
4. Visualize financial insights and scenarios using Power BI.
5. Communicate valuation findings through data storytelling and dashboards.

Module 1: Introduction to Valuation and Company Analysis

- Overview of financial valuation: Intrinsic vs. Relative
- Common valuation techniques:
    - Discounted Cash Flow (DCF)

- Comparable Company Analysis (CCA)
- Business model understanding and strategic analysis
- Introduction to Financial Modeling using Excel
- Key assumptions and sensitivity analysis
- Key components of an annual report
- Identifying financial and non-financial value drivers

Practice:

- Visualize business segments and revenue split using Power BI

Module 2: Historical Financial Modelling and Visualization

- Income Statement, Balance Sheet, and Cash Flow linkages
- Common-size financial statements
- Financial ratios and interpretation:
  - Profitability (ROA, ROE, Net Margin)
  - Efficiency (Asset Turnover, Inventory Days)
  - Liquidity (Current Ratio, Quick Ratio)
  - Solvency (Debt/Equity, Interest Coverage)

Practice:

- Build a 5-year historical model using Excel
- Create a ratio analysis dashboard using Power BI
  - Charts: Trendlines, KPI Cards, Decomposition Tree
  - Filters: Year, Segment, Product
- Data connection from Excel to Power BI

Module 3: Forecasting and Valuation Modelling

- Projected financial statement
- Revenue forecasting techniques: CAGR, Top-down, Bottom-up
- Forecasting operating margins and costs
- Working capital and capital expenditure estimation
- Free Cash Flow to Firm (FCFF) and to Equity (FCFE)
- Cost of Capital (WACC):
  - Risk-free rate
  - Equity risk premium
  - Beta
  - Cost of debt and tax impact
- Terminal value methods (Perpetuity Growth and Exit Multiple)
- DCF valuation formula and interpretation

Practice:

- Forecast 5 years of financials (IS, BS, CF) in Excel
- Build the FCFF model and calculate the firm value
- Conduct a sensitivity analysis for key assumptions (growth, WACC)

- Visualize DCF valuation output in Power BI:
  - Sensitivity tables and charts
  - Valuation waterfall chart
  - Interactive scenario slicer (Growth %, WACC, Terminal Value)

Module 4: Valuation Analytics and Scenario Analysis

- Comparable Company Valuation:
  - EV/EBITDA, P/E, P/B, Price/Sales multiples
  - Sector benchmarking and peer comparison
- Scenario and sensitivity analysis:
  - Base Case, Best Case, Worst Case
  - Dynamic variables: cost inflation, demand growth, FX
- Valuation triangulation and final recommendation
- Investor presentation and storytelling

Practice:

- Compare valuation multiples across 3 peer companies
- Build interactive scenario dashboard in Power BI:
  - Dropdowns for assumption switching
  - Cards for valuation summary
  - Line and bar charts for case comparison
- Draft a final valuation summary report

Financial Data Analytics and Visualization

Credits: 3 (2+1+0)

Course Objectives:

1. To provide a foundation in data visualization principles and dashboard design techniques relevant to financial analysis.
2. To develop proficiency in using tools like Power BI for visualizing financial statements, performance metrics, and corporate finance data.
3. To enable students to create customized dashboards and financial storytelling visuals for various business stakeholders.

Course Outcomes:

By the end of this course, students will be able to:

1. Understand and apply the principles of effective financial data visualization.
2. Create a wide range of financial dashboards using Power BI.
3. Compare and analyze financial data trends, ratios, and metrics visually.
4. Develop customized dashboards for strategic, operational, and financial decision-making.
5. Present financial insights with clarity through data storytelling and visual narratives.

Module 1: Foundations of Financial Visualization and Dashboard Design

- Principles of effective data visualization
- Types of data visualizations: tables, bar/line charts, heatmaps, sparklines, gauges, etc.
- Dashboard design principles: layout, color, typography, interactivity
- Financial decision-making dashboard: Strategic (Long-Term, High-Level Planning), Operational (Day-to-Day Financial Activities), Analytical (Data-Driven Financial Insights), Tactical (Medium-Term Planning and Execution)
- Common challenges in dashboard creation

Practice: Build a basic multi-page dashboard using financial statement data

Module 2: Financial Dashboard Development with Power BI

- Creating KPI dashboards: Profit margin, Expenses, and Revenue growth, ROA/ROE
- Profit & Loss dashboards with drill-down capabilities
- Balance Sheet dashboards: Asset-Liability visualization
- Cash Flow and cash management dashboards: Opening balance/closing balance, inflows/outflows
- Accounts Receivable/Payable dashboards
- Real-time dashboards: data refresh, connectors, live KPIs
- CFO dashboard

Practice: Create an interactive P&L and balance sheet dashboard in Power BI

Module 3: Corporate Finance Analysis and Strategic Decision Dashboards

- Visualizing corporate finance metrics: Fundraising, Application of funds, WACC, EBITDA
- Working Capital & Dividend dashboard: Inventory, Receivables, Payables, Dividend (DPS, EPS, DPR)
- Financial Ratio analysis and trend analysis (key indicators for capital structure, profitability, liquidity, solvency, efficiency)
- Budget management dashboards and forecasting
- Budget vs. Actual Performance dashboards and templates

Practice: Build an Excel-based dashboard to monitor actual vs. forecast

Module 4: Storytelling with Financial Data and Stakeholder Communication

- Financial storytelling: converting numbers into narratives
- Choosing the right visualization to match stakeholder goals
- Using dashboards to support strategic financial decisions
- Customizing dashboards for different users (e.g., investors, CFOs, auditors)
- Integrating dashboards into presentations: export to PDF, PowerPoint, Teams
- Comparative analysis dashboards: peer benchmarks, trendlines, and YoY growth

Practice: Create a storyboard for a financial performance presentation of various companies

Dataset:

- Collecting data from NSE/BSE, Yahoo Finance, Moneycontrol using Excel plugins and Power BI connectors
- Importing datasets from Kaggle (Global Stock Market, Options Chain, Crypto Prices)

Banking Intelligence, Credit Analysis and Financial Services Analytics

Credits: 3 (2+1+0)

Course Objectives

1. To enable students to extract, analyze, and visualize key banking and financial services data using Power BI.
2. To equip learners with analytical tools for credit appraisal, portfolio management, fraud detection, and strategic financial decision-making.
3. To integrate banking operations, risk assessment, customer intelligence, and performance analytics through dashboards and live insights.

Course Outcomes

By the end of this course, students will be able to:

1. Understand and interpret key data sources in banking and financial services.
2. Build Power BI dashboards for credit risk scoring, loan portfolio analysis, and borrower profiling.
3. Apply customer analytics and fraud detection models using banking data.
4. Conduct project appraisal and financial ratio analysis for lending decisions.
5. Generate actionable insights and visual reports to support strategic decisions in banking.

Module 1: Banking Analytics Ecosystem and Data Landscape

- Introduction to Banking Analytics and Use Cases
- Overview of Banking Data (Deposits, Loans, Transactions, Customer Profiles)
- Banking data sources: transaction records, credit history, borrower profiles
- KPIs in Retail, Corporate & Investment Banking
- Understanding Business Models and Banking Products
- Introduction to Dun & Bradstreet, CIBIL, Experian, CRIF Highmark
- Power BI: Importing banking datasets, building data models

Practice Activities:

- Create data models for banking KPIs in Power BI
- Dashboard to analyze transaction trends and regulatory compliance metrics

Module 2: Credit Risk Analytics and Project Appraisal with Power BI

- Credit Scoring Models and Creditworthiness Assessment
- Credit analysis: Customer integrity, industry risk, repayment ability
- Credit scoring models: Probability of Default (PD), Loss Given Default (LGD), Exposure at Default (EAD)
- Loan Portfolio Analysis and NPA Tracking
- Data preparation for credit risk modeling
- Logistic regression, decision trees, scorecard models
- Portfolio risk monitoring and early warning systems
- Inter-firm comparison, group exposure, and internal/external ratings
- Loan proposal creation, borrower profile evaluation, financial statement integration

Practice Activities:

- Build a dynamic credit scorecard using Power BI
- Create visualizations for credit risk assessment and early warning alerts
- Generate borrower background and sector risk dashboards

Module 3: Customer Analytics and Fraud Detection in Banking

- KYC policies and borrower profiling
- Customer segmentation using clustering models (Power BI with DAX & custom visuals)
- Behavior-based cross-selling analytics
- Real-time fraud detection and alert dashboard
- Negative list analysis, banking arrangement visualization

Practice Activities:

- Segment customers by credit behavior, demographic profile, and product usage
- Build anomaly detection reports with custom fraud metrics
- Power BI drill-down report: Account performance by product and customer type

Module 4: Strategic Insights and Reporting for Financial Decision-Making

- Design of credit proposal templates
- Dashboard design for banking KPIs and operational metrics
- Visualization of credit limit tables, group exposure matrices
- Portfolio performance analytics (loan accounts, CC, BG, LC facilities)
- Integration of internal and external ratings for risk monitoring
- Final project: End-to-end dashboard on credit analysis and borrower appraisal

Software & Tools Used

- Power BI Desktop (mandatory throughout)
- Use of DAX, Power Query, and Custom Visuals for modelling and analytics

Financial Analyst Capstone Project

Credits: 4 (0+0+4)

Capstone Project 1: Sector-Wise Portfolio Risk Dashboard and Performance Forecasting

Title: "Financial Risk Dashboard and Return Forecasting of NIFTY Sectoral Portfolios Using ARIMA and GARCH Models"

Objectives:

- To analyze and visualize historical risk-return performance of NIFTY sector indices.
- To forecast returns using ARIMA models and estimate volatility through GARCH modeling.
- To build a risk dashboard showing metrics like Sharpe Ratio, VaR, Beta, and drawdowns for decision-making.

Capstone Project 2: Stock Performance Modeling and Interactive Option Risk Dashboard

Title: "Valuation and Option Risk Analysis Dashboard for Blue-Chip Stocks Using Regression and Monte Carlo Simulation"

Objectives:

- To evaluate historical performance and forecast premium of stock options.
- To build a dashboard showcasing price simulation and risk metrics for informed derivative trading decisions.

Capstone Project 3: DCF-Based Valuation and Scenario Dashboard of a Listed Company

Title: “Valuation of various companies Using DCF and Scenario Modeling with Power BI”

Objective:

- To build a comprehensive valuation model of a listed Indian company using Discounted Cash Flow (DCF) method, and visualize valuation results, assumptions, and sensitivity scenarios using Power BI.

Capstone Project 4: Credit Risk Scoring and Loan Portfolio Analysis Dashboard

Title: “Credit Risk Scoring and Loan Portfolio Analysis Dashboard of a Listed Company”
Objective:

- Develop a comprehensive credit risk scoring model and visualize the loan portfolio quality using Power BI.

Digital Marketing Syllabus

Credits: 24 (6+6+12)

Course	Credit	T+P+P
Introduction to Business Analytics with Power BI	4	0+2+2
Advanced Data Analytics with Power BI	4	0+2+2
Foundations of digital marketing & e-commerce	2	1 +1+0
Content marketing & Customer engagement	4	2 +0+2

Digital marketing analytics	2	1 +1+0
Social media & E-mail marketing	4	2 +0+2
Digital Marketing Internship	4	0+0+4
Total	24	6+6+12

Introduction to Business Analytics with Power BI

Credits: 4 (0+2+2)

Course Objectives

- To introduce students to the role of data analytics in business decision-making.
- To equip learners with the skills to connect, clean, transform, and visualize data using Power BI.
- To foster an understanding of domain-specific applications of Power BI.

Course Outcomes

- Navigate the Power BI interface and load datasets from various sources.
- Clean, transform, and shape raw datasets using Power Query.
- Build basic data models and relationships.
- Develop foundational DAX expressions (measures and calculated columns).
- Design simple, interactive dashboards for business storytelling.

Module 1: Introduction to Power BI and Business Analytics

- Understanding Business Analytics
- Power BI Desktop Interface & Workflow
- Data Connection – Excel, Web, Databases

Module 2: Data Preparation using Power Query

- Cleaning and Formatting Data
- Transforming Rows, Columns, Types
- Data Profiling, Filtering, Merging

Module 3: Modeling and Basic DAX

- Star Schema Design, Relationships
- Calculated Columns & Basic Measures

Module 4: Visual Analytics and Storytelling

- Charts, Slicers, Filters, KPIs
- Visual Design and Storytelling

Project

Design a dashboard and report using domain data (HR/Finance/Marketing/Agri).

Tools

- Power BI
- Excel / CSV Sources
- Kaggle Datasets

References

Microsoft Learn: Power BI Fundamentals

Advanced Data Analytics with Power BI

Credits: 4 (0+2+2)

Course Objectives

- To deepen students' understanding of DAX and advanced modeling.
- To equip learners with the ability to build time-aware analytics.
- To deploy Power BI reports using best practices for governance and security.

Course Outcomes

- Write and troubleshoot complex DAX expressions.
- Apply time intelligence functions to create YTD, MTD, MOM analytics.
- Design optimized, interactive dashboards using bookmarks and tooltips.
- Publish reports and set up refresh schedules and security roles.
- Execute a complete analytics solution from data to insights.

Module 1: Advanced DAX and Data Modeling

- Recap and Deep Dive into Relationships
- IF, SWITCH, CALCULATE
- Variables and Evaluation
- Hierarchies and Dimensions

Module 2: Time Intelligence and Optimization

- YTD, MTD, QTD, MOM Calculations
- Model Optimization and Performance Tuning

Module 3: Domain-Specific Case Studies

- Case Study – HR/Finance/Marketing/Agribusiness

Module 4: Report Interactivity and Deployment

- Bookmarks, Drillthroughs, Tooltips
- Power BI Service – Publishing, Workspaces
- Implementing Role-Level Security

Project

Build and publish an enterprise-grade analytics dashboard with full interactivity and security.

Tools

- Power BI
- Excel / CSV Sources
- Kaggle Datasets

References

Microsoft Learn: PL-300

Foundations of Digital Marketing & E-Commerce

Credits: 2 (1 +1+0)

Course Objectives:

1. To introduce students the world of digital marketing and e-commerce.
2. To equip learners with the ability to use digital marketing tools and market their products in e-commerce platforms.

Course Outcomes:

Upon successful completion of this course, students will be able to:

- Identify the roles and functions that digital marketing and e-commerce play within an organization.
- Understand the customer journey and the function of journey maps and explain the concept of marketing funnel.
- Know how companies can use digital marketing to build their brands
- Understand the practice of performance marketing and its goals.
- Understand the importance of data for e-commerce.

Module 1: Introduction to digital marketing & e-commerce: Difference between digital marketing & e-commerce, Job roles and responsibilities, career-path, transferable skills of a digital marketing & e-commerce specialist, Agency roles Vs. In-house roles, Careers in digital marketing & e-commerce

Practice:

- A day in the life of an entry-level digital marketer
- A day in the life of an entry-level e-commerce account manager

Module 2: The customer journey & marketing funnel: Digital marketing & e-commerce creating value, the customer journey & journey maps, Meaning of touchpoint, The marketing funnel, Traditional Vs. digital marketing funnel, The top and & bottom of the funnel

Practice:

- MERSEA structuring its marketing funnel – case study

Module 3: Implications of digital marketing to build brands: Value of brands for digital marketing, Brand safety, Elements of a digital marketing strategy, SMART goals, Paid, owned and earned media, Use of SEO & SEM, Display advertising, Use of social media & e-mail marketing

Practice:
- Building an e-mail campaign for a business unit
- Building a social-media campaign for a business unit

Module 4: Measurement of performance success: Measure progress with performance success, Common metrics for success, Working with data, Data ethics, Attribution models, Data storytelling basics, Story structure

Practice:
- Data storytelling of a business unit

Thrust Area of Project:
- Design digital marketing campaign plan for a business unit

Tools:
For Digital Marketing: Google Digital Garage, HubSpot Academy,
For E-commerce: Shopify, WooCommerce, Razorpay

References:
o Book: Digital Marketing For Dummies by Ryan Deiss & Russ Henneberry
o Google Digital Garage: https://learndigital.withgoogle.com/digitalgarage

Link: Digital Garage - YouTube Channel
Link: The Ultimate Shopify Tutorial for Beginners on How To Start Dropshipping

Content marketing & Customer Engagement

Credits: 4 (2 +0+2)

Course Objectives:
1. To introduce students how to optimize website content for SEO and use SEM for the benefit of business.

2. To equip learners with the ability to create and market contents for social media handles including Facebook, YouTube and Instagram and measure measure and analyse content creation and marketing campaign results.

Course Outcomes:
Upon successful completion of this course, students will be able to:

- Explain the purpose of SEO and the essential SEO terms to know.
- Use Google Search Console and its reports to monitor a site's presence in Google Search results.
- Recognize the benefits of SEM and why to do it, understand the fundamentals of Google Ads and targeting audiences.
- Able to create and market contents for social media handles including Facebook, YouTube and Instagram even considering Generative AI.
- Analyse content performance and optimize for greater reach and engagement

Module 1: Introduction to attract and engage customers with digital marketing: Customer personas for targeting customers, Awareness, Consideration, Conversion, Loyalty, Learn to create customer personas.
Understand SEO: Working of Google search engine, Google determining website rankings, Breakdown of the Google search engine results pages (SERPs), Importance of SEO, Implementing SEO, Keyword research and recommendations, Organization of website pages, SEO terms

Assignments:

- Okabashi uses marketing strategies to attract customers and build interest – case study
- Marketing funnel stages and corresponding strategies
- Structure an e-commerce website

Module 2: Application of SEO: Optimization of website's contents, images, Crafting effective titles and meta descriptions, Creating structured data markup, Google search console, reports and metrics, Promoting a website, Making a mobile-friendly website, Bing Webmaster Tools.
SEM and display advertising: Benefits of SEM, SEM ad formats in Google Ads, Working of Google Ads, Identification of keywords and understand the ad auction, Display advertising, Optimization of responsive display ad

Assignments:

- Create an effective responsive search ad for a business unit

Optimize responsive display ads

- SEO do's and don'ts

Module 3: Visual storytelling: Video pre-production – Identifying equipment & software, developing ideas, comparing narratives & storyboarding
Video production-process – Operating prosumer camcorder, camera moves & shots, Shoot sequencing.
Video post-production – Professional editing workflow, performing basic editing, Editing patterns & transitions.
Creating Engaging Content for Facebook: Creating engaging written posts, visual content, and videos optimized for Facebook's algorithm, Building and managing active

Facebook communities through Groups and interactive features, Planning and executing successful Facebook Live broadcasts that foster real-time engagement, Developing efficient content scheduling workflows using Meta Business Suite, Analyzing content performance using Facebook Insights to refine your approach, Implementing platform-specific SEO and hashtag strategies to increase content discoverability

Assignments:

- Create engaging content for Facebook using CANVA

Module 4: Creating Engaging Content for YouTube: Creating professional-quality videos optimized for YouTube's platform and algorithm, Mastering video production techniques using smartphones and basic editing software, Channel creation & channel branding, Analyzing channel performance and optimize content using YouTube Analytics, YouTube monetization policy.

Creating Engaging Content for Instagram: Create visually compelling photos, Stories, and Reels using Instagram's native tools, Writing engaging captions that drive audience interaction, Implementing effective hashtag strategies to increase content discoverability, Analysing content performance using Instagram Insights to optimize your strategy

Content Creation with Generative AI: Choosing GenAI tools for high impact content, leveraging GenAI, enhancing creativity, innovation and best practices.

Assignments:

- Create engaging content for YouTube using CAMTASIA or Adobe-Pro
- Create engaging content for YouTube using Renderforest
- Create engaging content for Instagram using CANVA

Thrust Area of Project:
Participate and explain the Google Ads auction process
Prepare and execute a content creation and marketing campaign for one of the business unit.

Tools:
Google Ads, Search Console, SEMrush
Canva, Grammarly, Mailchimp, Renderforest, CAMTASIA, Adobe-Pro

References:

- Blog: Moz Beginner's Guide to SEO
- Google Skillshop: https://skillshop.withgoogle.com
- HubSpot Content Marketing Certification

Link: SEMrush Academy | SEO Course for Beginners

Link: HubSpot Academy | Content Marketing Course (Full Course)

Digital Marketing Analytics

Credits: 2 (1 +1+0)

Course Objectives:

1. To introduce students how to Evaluate metrics against performance goals and make adjustments to a marketing budget or strategy.
2. To equip learners with the ability to Create presentations and reports to update stakeholders on the progress or success of a marketing campaign and important insights.

Course Outcomes:

Upon successful completion of this course, students will be able to:

- Describe the unique role of performance goals and key performance indicators (KPIs) in marketing campaigns.
- Describe how tools like Google Analytics and Google Ads are used to measure website and ad campaign performance.
- Describe how to determine the return on investment (ROI) or return on ad spend (ROAS) of a marketing project.
- Prepare, conduct, and analyze the results from an A/B test to optimize a marketing campaign.
- Apply spreadsheet features like sorting, filtering, and pivot tables to prepare data to be shared.

Module 1: Marketing analytics and measurement: Media plans and goals, Setting performance goals, Introduction to Google Analytics, Big data for marketing analytics and automation

Practice:

- Set performance goals
- Familiarize students with Google Analytics

Module 2: Metrics for Google Analytics & Google Ads: Global site tagging and Google Tag Manager, Google Analytics: Monitor metrics, Google Analytics: Create Explorations, Google Analytics Explorations, Google Ads metrics, Dashboards, scorecards, and reports in Google Ads, View and apply recommendations in Google Ads, Link Google Ads to Google Analytics

Practice:

- Create an Exploration in Google Analytics
- Review and apply recommendations

Module 3: Measuring the success of digital marketing campaigns: Indicators of a successful marketing campaign, ROI and ROAS calculations, Perform A/B tests in Google Ads, Monitor A/B test results in Google Ads

Practice:

- How Good Boy Studios improves customer acquisition with A/B tests and analytics – case study
- Make digital marketing campaign budget decisions

Module 4: Presentation of metrics & insights to stakeholders: Key stakeholders & their expectations, preparing data in spreadsheets – sorting, filtering, pivot tables, charts, data visualization, Creating effective presentation

Practice:

- Sort and filter spreadsheet data
- Analyze data using pivot tables
- Create data visualizations for a presentation
- Present data insights to stakeholders

Thrust Area of Project:
Prepare and Interpret A/B test results of a business unit

Tools:
GA4, Tag Manager, Hotjar

References:
o Book: Measure What Matters by Katie Delahaye Paine

Link: Google Analytics 4 Tutorials by MeasureSchool (Playlist)

Social media & e-mail marketing

Credits: 4 (2 +0+2)

Course Objectives:

1. To introduce students how to identify core pillars of social media marketing: strategy, planning and publishing, listening and engagement, analytics and reporting, advertising.
2. To equip learners with the ability to write effective email copy, subject lines, and preview text to optimize an e-mail marketing campaign, measure and analyse email campaign results.

Course Outcomes:
Upon successful completion of this course, students will be able to:

- Identify the five core pillars of social media marketing: strategy, planning and publishing, listening and engagement, analytics and reporting, and advertising.
- Learn how to write, design, and repurpose engaging content for social media and recognize how to use the data gathered from social media analytics as a decision-making tool.
- Learn best practices for presenting a social media report and achieve specific marketing goals through the use of paid social media.
- Write effective preview text and subject lines using best practices, create email marketing automation and workflows.

- Conduct contact management and list segmentation, measure and analyze email campaign results.

Module 1: Online interaction with customers: Benefits of social media marketing, Five core pillars of social media marketing, Earned, owned, and paid social media, The social media marketing funnel.
Social media strategy, planning & publishing: Defining goals of a social media strategy, identifying social media target audience, choosing social media platforms, Types of contents in social media, Determine the frequency and timing of posts, Use a social media calendar

Assignments:
- Create a social media calendar

Module 2: Social media engagement: Importance of social listening, Social listening strategies, Use of YouTube to grow audience, Increasing followers on Twitter, Writing for social media, Developing brand voice on social media, Repurpose content on social media
Social media analytics & reporting: Understanding social media analytics, Metrics to track with social media analytics, Use of social media data to drive marketing strategy, understanding social media reports, Presenting a social media report

Assignments:
- Respond to customer comments in a social media handle
- Design a social media post
- Analyze social media performance of a business unit
- Report on social media performance of a business unit

Module 3: Introduction to e-mail marketing: Entry level e-mail marketing jobs and tasks, Conducting PESTEL & SWOT, Do's and Don'ts in e-mail marketing, Ethical e-mail language.
Types of & useful tools for e-mail marketing: Types - Acquisition emails, Welcome emails, Newsletters, Promotional emails, Retention emails, Building and segmenting mailing list, writing effective mails, identifying helpful tools and selecting the best one.

Assignments:
- Write an Acquisition email for a business unit
- Write a Welcome email for a business unit
- Write a Promotional email for a business unit
- Write a Retention email for a business unit
- Create a mail in HubSpot
- Set up a Mailchimp campaign

Module 4: Collecting & analysing email campaign data: Useful concepts in email marketing results, Common email marketing metrics, Creating an email marketing report, Presentation tips.
Running email campaigns: Preparation for an email marketing, Aligning SMART goals with email campaign, Segmenting email list, Crating presentation for stakeholders, Reflecting and connecting with peers

Assignments:

- Present email marketing data to stakeholders
- Create SMART goals for an email campaign for a business unit
- Segment an email list for a business unit
- Analyze email campaign metrics for a business unit
- Create a presentation for stakeholders for a business unit

Thrust Area of Project:
Prepare social media campaign of a business unit
Prepare and execute an email campaign for a business unit

Tools:
Meta Ads Manager, Hootsuite
Mailchimp, HubSpot, Zoho Campaigns

References:

- Book: Jab, Jab, Jab, Right Hook by Gary Vaynerchuk
- HubSpot Email Marketing Certification

Link: Meta Blueprint: Learn How to Create Effective Facebook & Instagram Ads

Link: Mailchimp Tutorial for Beginners 2024 - Create Email Marketing Campaigns

Digital Marketing Internship

Credits: 4 (0+0+4)

Duration	Course Title	Credits	Type (T+P+Pj)
4 Weeks	Digital Marketing Internship	4	0+0+4

HR ANALYTICS

Credits: 24 (8+8 +8)

Course	Credit	T+P+P
Introduction to Business Analytics with Power BI	4	0+2+2
Advanced Data Analytics with Power BI	4	0+2+2
Talent acquisition and Development analytics	3	2+1+0
Workforce Planning and Talent Sourcing Analytics	3	2+1+0
Talent Engagement Analytics	3	2+1+0
Talent Retention Analytics	3	2+1+0
Project: HR Analytics Capstone	4	0+0+4
Total	24	8+8+8

Talent Acquisition & Development Analytics

Credit: 1+2+0

Course Objectives:

Students will be able to

- Understand and Evaluate Key Determinants of Quality of Hire
- Apply Predictive Analytics in Talent Acquisition
- Measure and Interpret Hiring and Performance Metrics
- Link Training and Development Initiatives to Performance Outcomes
- Develop and Communicate Data-Driven HR Insights

Course Outcome:

By the end of this course, students will be able to:

- Identify and track key hiring metrics
- Apply basic predictive analytics in hiring decisions
- Analyze training ROI and support talent strategy using data

Module 1: Foundations of Quality of Hire and Selection Metrics

Understanding “Quality of Hire” (QoH): Definition, Importance, and Organizational Impact, Key Selection Tools: Cognitive Tests, Structured Interviews, Work Samples, Role of Job Descriptions and Competency Frameworks, Validity and Reliability in Selection

Practice Session 1: Job Fit Analysis

Task: Students are given 3 job descriptions and sample candidate profiles. They must:

- Identify key selection criteria
- Recommend suitable assessment tools
- Justify the quality indicators to be tracked post-hiring

Deliverable: 1-page report + brief group presentation

Suggested Readings:

- Schmidt & Hunter (1998) – Validity of Selection Methods
- LinkedIn Talent Solutions (2020) – Global Talent Trends Report

Module 2: Predicting Performance and Acquisition Effectiveness Using Analytics

Predictive Analytics in HR, Tools and Techniques: Regression, Logistic Models, Decision Trees, KPIs in Hiring: Cost-per-Hire, Time-to-Fill, Source Effectiveness, Building and Interpreting a Quality of Hire Dashboard

Practice Session 2: Predictive Modelling with Sample Data

Task: Using a dataset (e.g., Kaggle HR dataset), students must:

- Run a simple regression to predict performance scores
- Identify which features (e.g., education, assessment scores) influence quality of hire
- Create visualizations in **Excel/Power BI**

Deliverable: Data analysis worksheet + 5minute data interpretation pitch

Tools Used: Excel / Power BI / Google Sheets

Suggested Readings:

- Pease (2015) – Optimize Your Greatest Asset
- Boudreau & Ramstad (2007) – Beyond HR

Module 3: Training Effectiveness and Employee Development Analytics

Linking Training to Business Outcomes (Kirkpatrick Model & ROI), Post-Hire Evaluation: Performance Ratings, Promotions, Retention, Analytics for Learning Effectiveness: Course Completion, Skill Gain, Engagement, Talent Lifecycle Dashboard (Recruit → Train → Retain)

Practice Session 3: Training Impact Simulation

Task: Given a company training dataset, students will:

- Analyze pre- and post-training performance
- Calculate ROI on training investment
- Recommend changes for higher learning retention or impact

Deliverable: Slide deck showing training KPIs + insights

Suggested Readings:

- Phillips (2012) – Measuring ROI in Learning & Development
- Deloitte Human Capital Trends Reports

Workforce Planning and Talent Sourcing Analytics

Credit: 1+2+0

Course Overview

This course develops the ability to analyze, plan, and optimize human capital through workforce planning and job analytics. Students will gain skills in predictive modeling, job analysis, job evaluation, and redesign — with a strong focus on metrics, tools, and real-world application.

Course Objectives

By the end of the course, students will be able to:

- Explain the strategic role of workforce planning and sourcing.
- Apply workforce forecasting models like Markov Chains and trend analysis.
- Conduct job analysis and prepare competency-based job descriptions.
- Evaluate jobs using structured, measurable techniques.
- Design job roles and analyze the outcomes of redesign interventions.

Course Outcomes:

- Explain the strategic importance of workforce planning and talent sourcing in aligning human capital with organizational goals
- Apply quantitative models such as Markov Chains, scatter plots, and trend analysis to forecast workforce supply and demand.
- Conduct comprehensive job analyses and develop competency-based job descriptions and specifications.
- Evaluate job roles using structured job evaluation methods and interpret relevant metrics to support fair compensation decisions.

Module 1: Introduction to Workforce Planning and Talent Sourcing

Meaning & Scope of Workforce Planning, Strategic Alignment with Business Objectives, Types of Talent Sourcing: Internal, External, Boomerang, Gig, Data-Driven Talent Planning & Supply Chains

Practice Session 1:
Title: *"Build a Basic Talent Sourcing Strategy"*
Activity: Students select a company and develop a sourcing plan for a specific function.
Include:

- Talent demand
- Candidate personas
- Sourcing channels

Deliverable: 2-page sourcing strategy brief + 5-minute pitch

Module 2: Workforce Planning Process & Forecasting Tools

The 5-Step Workforce Planning Process, Forecasting Tools: Markov Chains (Transition Probability Matrix), Trend Analysis (using past HRIS data), Scatter Plot (performance vs. tenure/skills)

Practice Session 2:
Title: *"Forecast Talent Demand Using a Markov Model"*
Activity: Use provided HR data to:

- Build a Markov matrix
- Predict next year's internal movement and shortages
- Recommend action plans for gaps
  Tools: Excel
  Deliverable: Excel file + written interpretation

Module 3: Job Analysis and Job Description Development

Purpose and Methods of Job Analysis (PAQ, interviews, observations), Competency Frameworks, Difference Between JD and Job Specification, Using Job Analysis for Recruitment, Training, and Performance Management

Practice Session 3:
Title: *"Conduct a Job Analysis and Draft a JD"*
Activity: Students analyze a real or assigned job role using PAQ/interviews. Create:

- A Job Description
- A Job Specification
  Deliverable: JD/JS Document + competency mapping table

Module 4: Job Evaluation – Concepts, Methods, and Metrics

Purpose of Job Evaluation, Evaluation Methods: Ranking, Classification, Point-Factor, Factor Comparison, Internal Equity and Compensation Grading, Key Metrics: Equity Index, Market Comparison Ratios

Practice Session 4:
Title: *"Apply Point-Factor Method for Job Evaluation"*
Activity:

- Assign point values to compensable factors (e.g., skills, effort) for 3 sample jobs
- Rank jobs and suggest pay band alignment

Tools: Excel templates
Deliverable: Job Evaluation Matrix

Module 5: Job Redesign – Concepts and Metrics

Why Job Redesign? Technology, Productivity, Engagement, Redesign Methods: Job Enlargement, Enrichment, Rotation, Simplification, Job Characteristics Model (Hackman & Oldham), Metrics: Job Satisfaction Index, Productivity, Role Overlap, Burnout Rate

Practice Session 5:
Title: *"Propose a Job Redesign Plan"*
Activity:

- Identify a high-stress or repetitive job role (real or case)
- Recommend a redesign strategy using enrichment or rotation

- Predict impact using engagement and productivity metrics
  Deliverable: Redesign Report + before/after role chart

Talent Engagement Analytics

Credit: 1+2+0

Course Overview

This course equips students with the concepts, tools, and techniques to measure and analyze employee engagement using data-driven approaches. It explores the psychological and organizational factors influencing engagement, examines measurement methodologies like surveys and pulse checks, and applies analytics to identify variations across time, teams, and organizational levels. Students will gain practical experience in interpreting engagement data and making strategic HR recommendations.

Course Objectives

By the end of this course, students will be able to:

1. Understand the strategic importance of employee engagement in talent retention and performance.
2. Identify key drivers and barriers to engagement across functions and levels.
3. Design and interpret employee engagement surveys and feedback mechanisms.
4. Analyze temporal and team-based variations in engagement data.
5. Use data analytics tools to generate actionable insights for engagement strategies.

Course Outcomes:

- Identify and explain the major causes of employee attrition using organizational data and behavioral models.
- Analyze workforce data to recognize patterns and predictors of turnover across job roles, departments, and demographics.
- Evaluate the effectiveness of current retention initiatives using KPIs such as retention rate, turnover cost, and stay duration curves.
- Apply predictive analytics techniques (e.g., regression, clustering, survival analysis) to forecast potential attrition and inform decision-making.

Module 1:

Importance of Employee Engagement: Definitions and Evolution of Employee Engagement, Engagement vs. Satisfaction vs. Commitment, Link to Retention, Performance, and Customer Experience, Engagement Analytics in HR Strategy

Practice Session 1:

Title: *"Analyze the ROI of Engagement Programs"*
Activity: Case-based group analysis of a company's engagement strategy (e.g., Gallup or Google case).
Deliverable: ROI estimation table + brief presentation
Tool: Excel or Power BI

Module 2: Major Drivers of Employee Engagement

Psychological Meaning, Safety & Availability (Kahn, 1990), Gallup Q12 Drivers, Organizational Culture, Recognition, Leadership Style, Growth, Inclusion, Communication, and Well-being as Drivers, Engagement across Life Cycle Stages

Practice Session 2:
Title: *"Map Engagement Drivers in Your Workplace/Case Study Firm"*
Activity: Use qualitative and quantitative tools (like focus group feedback + hypothetical survey)
Deliverable: Driver mapping diagram + insight brief
Tool: Google Forms, Excel
Reading:

- **Kahn, W. A. (1990). *Psychological conditions of personal engagement and disengagement.***
- **AON Hewitt Engagement Model**

Module 3: Employee Engagement Surveys

Role of surveys in talent analytics, differences between pulse vs. annual surveys, eNPS, and employee lifecycle feedback, Types: Annual Surveys, Pulse Surveys, eNPS, Question Design & Survey Fatigue, Designing a Valid & Reliable Engagement Survey, Psychometric Considerations: Likert Scales, Bias, Benchmarks, Survey Analytics: Response Rate, Sentiment, Heatmaps

Practice Session 3:
Title: *"Design and Analyze an Engagement Survey"*

Activity Flow:

Step 1: Design a 10-question pulse survey around a real or fictional company scenario

Step 2: Distribute within peer groups or simulate 50+ responses

Step 3: Analyze using Excel/Power BI – Calculate Engagement Index, identify top drivers

Step 4: Recommend two targeted interventions based on data

Reading:

- **Saks, A. M. (2006). *Antecedents and consequences of employee engagement*.**
- **SHRM Survey Design Toolkit**

Module 4: Variations in Engagement Across Time

Day-of-the-Week Engagement Patterns, Engagement Trends: Morning vs. Evening Shifts, Fatigue, Burnout, and Temporal Variation, Using Time-Series Data and Dashboards

Practice Session 4:
Title: *"Temporal Analysis of Engagement Trends"*
Activity: Use sample time-series survey data (Mon–Sun) to chart engagement patterns
Tool: Excel Pivot Charts / Power BI
Deliverable: Line graph + Root cause insight + Recommendations
Reading:

- **Ramesh, G. (2021).** ***Measuring daily engagement using pulse data*****.**
- **Gallup Workplace Reports**

Module 5: Engagement Analytics at the Team Level

Team Dynamics and Manager Influence, Team-Level Engagement Index, Psychological Safety, Peer Relationships, Comparison of High-Performing vs. Low-Performing Teams, Interventions at Team Level

Practice Session 5:
Title: *"Compare Engagement Scores Across Teams"*
Activity: Analyze data for 5 fictional teams with different engagement drivers
Tool: Excel Heatmap or Power BI Matrix
Deliverable: Team engagement dashboard + Actionable team-wise interventions
Reading:

- **Google's Project Aristotle (Team Effectiveness & Engagement)**
- **Edmondson, A. (1999).** ***Psychological Safety and Learning Behavior in Work Teams***

References:

- Harter, J. K., Schmidt, F. L., & Hayes, T. L. (2002). *Business-unit-level relationship between employee satisfaction, engagement, and performance*. Journal of Applied Psychology.
- SHRM Research: The Business Case for Employee Engagement

Talent Retention Analytics

Credit: 1+2+0

Course Overview

This course explores the key drivers behind employee attrition and how analytics can be applied to design, implement, and track effective talent retention strategies. Students will learn to identify warning signs of disengagement and turnover, analyze data trends, and propose data-driven interventions for improving retention.

Course Objectives:

By the end of the session, students will be able to:

- Understand the common causes of employee attrition.
- Identify patterns and predictors of turnover using data.
- Evaluate various talent retention strategies across industries.
- Apply relevant metrics to monitor and track retention outcomes.
- Use HR analytics tools to generate insights from retention data.

Course Outcomes:

- Explain the organizational and behavioral factors contributing to employee attrition and disengagement.
- Analyze workforce data to identify patterns and predictors of employee turnover.

- Evaluate the effectiveness of various talent retention strategies using industry benchmarks and best practices.
- Apply quantitative metrics and models—such as turnover rate, retention rate, and survival analysis—to monitor and assess employee retention.
- Use HR analytics tools and dashboards to generate actionable insights that support retention decision-making and policy development.

Module 1: Employee Turnover

Voluntary vs. Involuntary Turnover, Push Factors (toxic culture, poor management, stagnation), Pull Factors (better pay, flexibility, career growth), Stay Interviews vs. Exit Interviews, Generational differences in attrition drivers

Key Insights:

- The Cost of Attrition
- "Regrettable vs. Non-regrettable Turnover"
- SHRM Report (2022): "Why Employees Leave – Top 5 Predictors of Voluntary Turnover"
- Harvard Business Review (2018): "Why People Really Quit Their Jobs"

Module 2: Talent Retention Approaches/Strategies

Engagement-Based Retention: Culture, Inclusion, Belonging, Reward and Recognition Programs, Career Growth and Internal Mobility, Leadership Development and Coaching, Personalized Retention Tactics (based on employee life stage), High Potential (HiPo) Retention Models, Stay Interviews and Predictive Exit Surveys

Module 3: Measures to Track Retention and Predict Attrition

Attrition Rate, Tenure Analysis, Turnover Cost, Retention Rate by Department, Demographic, Role, Survival Analysis & Kaplan-Meier Curves, Predictive Modeling of Attrition, Early Warning Systems (flight risk scoring), Sentiment Analysis of Exit Interview Data, Stay Duration Curve

Tools Introduced:

- Excel / Power BI dashboards
- Logistic Regression / Python-based churn prediction (basic intro)
- HRIS Reports (simulated)

Practice Session:

Practice Task Title: ***"Detecting and Solving Retention Risk Using Analytics"***

Activity Flow:

1. Case Scenario: Students are given simulated HR data for a company experiencing high attrition in a specific unit. The dataset includes variables like department, tenure, age, satisfaction score, manager rating, training hours, and exit reasons.
2. Tasks:
    - Perform exploratory analysis to identify patterns (Excel/Power BI)
    - Identify high-risk employee segments
    - Recommend 3 customized retention strategies based on insights

Deliverable:

- Short presentation of key findings
- Retention dashboard or heatmap
- Retention strategy memo (1-pager)

Session Wrap-Up and Assessment

Quick Quiz Topics:

- Metrics: Retention vs. Attrition
- Leading vs. Lagging Indicators
- Application of predictive retention tools

Reference:

- Bersin by Deloitte: *High-Impact Talent Retention*
- Gallup: *Retaining the Right Employees: Engagement & Development*
- Fitz-Enz, J. (2010). *The New HR Analytics*
- IBM HR Analytics Case: Predictive Attrition Modeling

Reference:

1. HR Analytics: Data-Driven Decision-Making in Human Resource Management Courseera:
HR Analytics: Tools, Types, and Benefits

2. Data Analysis using Advanced Excel- Excel for HR Analytics

3. Data Visualization using Power BI- Coursera- Data Visualization using Power BI

4. Data analytics to People Analytics- Coursera- People Analytics

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