

Program Curriculum
BS Quality & Performance Management
BSQPM
(4 years)



Institute of Quality & Technology Management
University of the Punjab
Lahore

Programme	BS Quality & Performance Management				
Duration	4 Years	Semesters	8	Credit hours	130
Department	Institute of Quality & Technology Management				
Faculty	Faculty of Quality & Industrial Systems Engineering				
Department Introduction					
In order to meet the challenges of globalization in the world’s economy and of 21st century, in 2002, University of the Punjab decided to start a Quality Management Division to help the industry to produce goods and services which are acceptable all over the globe. Courses offered at the Institute of Quality & Technology Management are BS Quality & Performance Management 5 th Semester (QPM), MS Total Quality Management, Ph.D. in Total Quality Management and PGD in TQM. These courses have been designed for students and professionals with the objective to prepare them for administrative and technical positions in business organizations.					
Department Vision					
Dedicated to advancing knowledge and fostering a quality-driven culture, IQTM empowers industries to achieve global standards through high-quality education, impactful research, and service-oriented graduates committed to societal betterment and competitiveness in a globalized market.					
Department Mission					
The IQTM has three fold education mission:- The teaching mission is to provide high quality undergraduate and postgraduate courses in the field of TQM. The research mission is to advance knowledge in the area of Total Quality Management to strengthen and support manufacturing and service sectors. The service mission is to participate in the faculty governance, in the broader community of the professionals, and in the mission of the university.					
Department Goals					
1. To train professionals of various areas in the field of TQM 2. To meet the specific needs of Industrial/Commercial/Business, Services and Public sector organizations. 3. To ensure the arrangements for standardization, testing and certification of national products. 4. To give a quality orientation to the education, training and human resource development activity in the country.					
Program Introduction					
The Bachelor of Science in Quality & Performance Management (BS QPM) is a four-year undergraduate program designed to prepare students for careers in quality assurance, performance improvement, and organizational excellence. The program integrates concepts of management sciences, operations, and modern performance frameworks to enable graduates to meet the growing demands of industry, services, and global supply chains. Grounded in management, operations, and analytics, the program develops skills in quality management systems, performance measurement, process improvement, compliance, and decision-making. It emphasizes practical applications through case studies, simulations, projects, and industry linkages, ensuring that graduates are capable of applying both traditional quality tools and modern digital/AI-enabled approaches.					
Program Mission Statement					
The BS Quality & Performance Management program prepares students to improve how organizations					

work by making processes smarter, systems more reliable, and decisions more data-driven. The program trains the professionals who can connect management principles with technology, lead performance improvement, and apply quality thinking to solve real-world business and industrial challenges.

Program Objectives

1. To provide students with a strong foundation in management, operations, and quality sciences.
2. To equip graduates with tools and techniques for quality assurance, process optimization, and performance measurement.
3. To develop analytical and problem-solving skills for decision-making in complex industrial and service environments.
4. To integrate sustainability, compliance, and global standards into performance management practices.
5. To prepare graduates for leadership roles in manufacturing, services, supply chains, and project-based organizations.

Market Need / Rationale of the Program

a) **Potential Students for the program:**

The **BS Quality & Performance Management** program is designed for students interested in business, operations, and analytical problem-solving who aspire to build careers in **quality assurance, performance improvement, compliance, and organizational excellence**. It is ideal for intermediate/A-level graduates seeking **practical, industry-focused management education** leading to roles in manufacturing, services, and supply chains.

b) **Potential Employers:** Public, private, NGOs, required skill set such as

- Process Improvement Techniques: Proficiency in Lean, Six Sigma, Total Quality Management (TQM), and continuous improvement methodologies.
- Data analysis & Statistical Skills: Ability to analyze data, interpret statistical results, and use tools like SPC (Statistical Process Control) and R, Python as well as Minitab for decision-making.
- Problem solving & Critical Thinking: Strong problem-solving skills to identify root causes and apply systematic approaches for process optimization.
- Project Management: Skills in project planning, resource allocation, and timeline management to lead improvement initiatives effectively.
- Quality Standards & Compliance: Knowledge of ISO standards, regulatory requirements, and quality management systems to ensure adherence to industry norms.
- Change Management: Proficiency in change management strategies to guide teams through process changes and foster a culture of continuous improvement.
- Communication & leadership: Effective communication skills for cross-functional collaboration and leadership abilities to drive quality initiatives within teams.
- Analytical Tools & Software: Familiarity with software like Excel, Power BI, and Tableau systems for data visualization, tracking metrics, and reporting insights.

Now a days, Pakistani and International industries require Quality Experts under various positions such as Production Controllers, Business Insight & Operations, Planning & Performance Analyst, Business Process Re-engineering, Quality manager, Process improvement managers, lean and six sigma (green and black belt) managers.

c) **Academic Benchmarking**

Universities that have launched the similar program

1. **National Universities:**

- Superior University, and Pakistan Institute of Quality Control • National Textile University

2. **International Universities:**

- The Hong Kong Polytechnic University (<https://www.polyu.edu.hk/en/>)

- Heriot-Watt University (<https://www.hw.ac.uk/>)
- Eastern Michigan University (<https://www.emich.edu/>)
- Tarleton state University (<https://www.tarleton.edu/>)
- Illinois State University (<https://illinoisstate.edu/>)

f) **Faculty:** 7 PhD and 3 MS/MPhil Faculty members

g) **Physical Facilities:** Computer Labs and library facilities are available

Admission Eligibility Criteria

- Years of Study completed: **12 Years of Education or Equivalent**
- Study Program/Subject:
- Percentage/CGPA: As per Punjab University criteria
- Entry requirement: **12 years of Education**
- **Any other (if Applicable) NA**

Categorization of Courses as per HEC Recommendation and Difference

Semester	Courses	Category(Credit Hours)					
		Major Courses	General/Indisplinary Courses	Major Electives	Minor Electives	Any Other	Semester Load
1	8	3	4			1	17
2	7	2	4			1	15
3	7	4	2			1	18
4	7	4	2			1	17
5	7	4	2			1	16
6	6	3	2			1	16
7	7	6				1	16
8	6	5				1	15
PU							130
HEC Guideline							
Difference (HEC &) PU							

*Core: Compulsory, Basic: Foundation, Major Electives: Professional Minor Electives: Specialization

Note: The course/column heads are customizable according to nature and level of the program.

Scheme of Studies / Semester-wise workload

#	Code	Course Title	Course Type	Prerequisite	Credit hours
Semester I					
1.	GE-101	Computer Application for Management	General		2
2.	GE-102	Business Communication	General		3
3.	GE-103	Civics & Community Engagement	General		2
4.	GE-104	Islamic Studies/Ethics	General		2
5.	QPM-101	Principles of Management	Major		3
6.	QPM-102	Accounting & Financial Management	Major		3
7	QPM-103	Artificial Intelligence Applications	Major		2
8	HQ-001	Fehm-e-Quran-	Quran		0
Total Credit Hours: 17					
Semester II					
1.	GE-105	Philosophy	General		2
2.	GE-106	Statistics	General		3
3.	GE-107	Environmental Sciences	General		2
4.	GE-108	Ideology of Pakistan	General		2
5.	QPM-104	Quality & Reliability Management	Major		3
6.	QPM-105	Organizational Behavior	Major		2
7	HQ-002	Fehm-e-Quran-	Quran		1
Total Credit Hours: 15					
Semester III					
1.	GE-209	Business Mathematics	General		3
2.	GE-210	Expository Writing	General		3
3.	QPM-206	Operations Management	Major		3
4.	QPM-207	Quality Management System & Auditing	Major		3
5.	QPM-208	Principles of Marketing	Major		3
6	QPM-209	Database Systems and Languages	Major		3
7	HQ-003	Fehm-e-Quran	Quran		0
Total Credit Hours: 18					
Semester IV					
1.	GE- 211	Entrepreneurship	General		3
2.	GE- 212	Labor & Social Compliance	General		3
3.	QPM- 210	Business Intelligence & Dashboard Reporting	Major		3
4.	QPM- 211	Metrology & Quality Control	Major		3
5.	QPM- 212	Lean Management	Major		2

#	Code	Course Title	Course Type	Prerequisite	Credit hours
6.	QPM- 213	R for Analytics	Major		2
7.	HQ-004	Fehm-e-Quran	Quran		1
Total Credit Hours: 17					
Semester V					
1	INT- 301	Economics	Intrdis		3
2	INT- 302	Industrial Psychology	Intrdis		3
3	QPM-314	Python for Data Analysis	Major		2
4	QPM-315	Production Planning & Control	Major		3
5	QPM-316	Six Sigma Performance Improvement	Major		3
6	QPM-317	Business Ethics	Major		2
7	HQ-005	Fehm-e-Quran	Quran		0
Total Credit Hours: 16					
Semester VI					
1	INT-303	Sociology	Intrdis		3
2	INT-304	Critical Thinking	Intrdis		3
3	QPM-318	Machine Learning	Major		3
4	QPM-319	Research Methods	Major		3
5	QPM-320	Decision making and analytics	Major		3
6	HQ-006	Fehm-e-Quran	Quran		1
Total Credit Hours = 16					
Semester VII					
1	CP-401	Internship	FW		3
2	QPM-421	Supply Chain Management	Major		3
3	QPM-422	Strategic Management	Major		3
4	QPM-423	Environment & Health Safety	Major		3
5	QPM-424	Project Management	Major		3
6	HQ- 007	Fehm-e-Quran	Quran		0
7	CP- 402	Project	CP*		1
Total Credit Hours = 16					
Semester VIII					
1	CP-403	Project	CP*	2	2
2	QPM-425	Human Resource Management	Major	3	3
3	QPM-426	Energy & Sustainability Management	Major	3	3
4	QPM-427	Logistics Management	Major	3	3
5	QPM-428	Service Management	Major	3	3

#	Code	Course Title	Course Type	Prerequisite	Credit hours
6	HQ- 008	Fehm-e-Quran	Quran	1	1
*CP = Capstone Project Total Credit Hours = 15					
Total Credit Hours: 130					

- Type of course may be core (compulsory), basic (foundation), major elective (professional), minor elective (specialization) etc.

General Education: 30 Major: 81 Interdisciplinary: 12 Internship: 3
Project: 3 Quran: 4

Research Thesis / Project /Internship		
Fieldwork/Internship: 7 th Semester 3 credit hours Research Thesis/Capstone Project: 7 th semester 1 Credit Hours 8 th Semester 2 Credit Hours		
Award of Degree		
Degree awarding criteria stating: CGPA percentage required to Qualify: As per University Rule. Thesis /Project/Internship: Compulsory requirement Any other requirement, e.g. Comprehensive examination (if applicable)		
NOC from Professional Councils (if applicable)		
Provide the status of NOC from the concerned Professional Council(s), if applicable, depending on nature of the program being propose NA		
Faculty Strength		
Degree	Area/Specialization	Total
PhD	- Total Quality Management TQM - Operation & Supply Chain Analytics - Total Quality Management & Chemistry) - TQM & Standards - TQM & Analytics	7
MPhil	- Management - TQM & Information Technology - TQM	3
Total		10
Present Student Teacher Ratio in the Department		
Total Faculty	10	Total Students 110 Ratio 1:11

Course Outlines separately for each course

Institute of Quality & Technology Management
Faculty of Quality & Industrial Systems Engineering
University of the Punjab, Lahore
Course Outline



Programme	BSQPM	Course Code	GE-101	Credit Hours	2
Course Title	Computer Applications for Management				
Course Introduction					
This course familiarizes the student with effective use of computer and its applications with the core focus on the Microsoft Office applications					
Learning Outcomes					
On the completion of the course, the students will: 1. Demonstrate proper file management techniques to manipulate electronic files and folders in a local and networked environment 2. Use basic and advance features of MS Word 3. Use MS PowerPoint to make effective presentations 4. Use business productivity software to manipulate data such as MS Excel and find solutions to business problems. 5. Explain the concepts and terminology used in the operation of application systems in a business environment.					
Course Content			Assignments/Readings		
Week 1	Basic components: CPU. Memory Peripheral devices, structure and their addressing.		Assignment 1: Label and describe components of a computer system with diagrams.		
	I/O devices and data storage devices, Motherboard and devices				
Week 2	Microsoft Word Document Creating, Formatting and Editing.		Practical 1: Create a formatted Word document (cover page, headings, tables, images).		
	Practical: Microsoft Word Document				
Week 3	Network hardware devices,		Assignment 2: Draw and explain different types of network topologies.		
	Topology				
Week 4	Microsoft power point		Practical 2: Create a PowerPoint presentation with animations and transitions.		
	Microsoft power point Practical				
Week 5	Other operating systems (Linux, Unix, etc).		Quiz 1: Basic OS functions.		
	Other operating systems (Linux, Unix, etc).				
Week 6	Microsoft power point		Practical: Create a spreadsheet with formulas and charts.		
	Class Activity Microsoft power point				
Week 7	Application software, Operating systems,		Practical : Explore and demonstrate key features of Microsoft Windows operating system.		
	General features of Microsoft Windows operating		Assignment Short report — “Importance of Operating Systems in Application Software Management.”		

Week 8	Internet and Networking, Servers and clients network hardware devices	Quiz: Internet and networking fundamentals — identify servers, clients, and hardware components.
	Mid Term	
Week 9	Data Organization, File storage	Practical: Data organization and file storage — create, name, and manage files and folders using different storage methods.
	Practical: Data Organization, File storage	Practical : MS Excel — perform basic data entry, formatting, and formula calculations.
Week 10	Introduction to MS Excel	Task & Quiz: Complete Excel-based exercises and short quiz on spreadsheet functions
	Practical: MS Excel	Task And Quiz
Week 11	Physical and logic storage, Number systems	Worksheet — convert between number systems and explain physical vs. logical storage.
	Physical and logic storage, Number systems	
Week 12	Introduction to data base management system. • Concept of data, information, and database • Need for databases (limitations of file-based systems) • Advantages of DBMS over traditional file systems • Database users and their roles (DBA, end users, designers) • Database applications in different fields	Task: Create a simple database using SQL; perform data entry and basic queries.
	Database Management Systems in Practice • Overview of popular DBMSs: MySQL, Oracle, SQL Server, PostgreSQL, MS Access • Introduction to database connectivity (ODBC/JDBC concepts) • Creating simple databases and queries using SQL	Assignment: Short report: “Why databases are important in modern organizations.”
Week 13	Proxy software • Types of Proxy Servers	Assignment: Proxy servers — types, uses, and role in network security and management.
	• Usage of Proxy software in network management, cybersecurity, and educational institutions	Quiz
Week 14	Microsoft Access	
	Practical: Microsoft Access	Practical: Create a database and input data in Access tables.
Week 15	Generate Tables, Forms, queries, reports	Task: Create a database and input data in Microsoft Access tables.
	Practical	
Week 16	All working on Google Doc.	Task: Generate tables, forms, queries, and reports using Microsoft Access.

	Final Term		
Textbooks and Reading Material			
1. Textbooks. i. Microsoft Office 2019 Step by Step; Joan Lambert and Curtis Frye ii. MS – Office ; Elaine Marmel, Latest Edition iii. Microsoft Excel Data Analysis and Business Modeling; Wayne Winston, Latest Edition			
2. Suggested Readings i. 1. O. Leary "Computing Essentials 2012", McGraw-Hills, 22nd Edition, ii. A. J. Herbert, R.M. Needham, "Computer Systems", Springer iii. G.H. MacEwen,"Introduction to Computer Systems", McGraw-Hill. iv. J.A Aseltine, "Introduction to Computer Systems". Wiley			
Teaching Learning Strategies			
1. Lectures using multimedia and whiteboard 2. Interactive discussions and exercises 3. Case studies and simulations 4. Group Projects and Presentations			
Assignments: Types and Number with Calendar			
1. Assignment 1 (Week 7): Short report – “Importance of Operating Systems in Application Software Management.” 2. Assignment 2 (Week 11): Worksheet – Convert between number systems and explain physical vs. logical storage. 3. Assignment 3 (Week 12): Short report – “Why Databases Are Important in Modern Organizations.” 4. Assignment 4 (Week 13): Research task – “Types and Uses of Proxy Servers in Network Security and			
Assessment			
Sr. No.	Elements	Weightage	Details
1.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
2.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
3.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

Programme	BSQPM	Course Code	GE-102	Credit Hours	3
Course Title	Business Communication				
Course Introduction					
This course develops the communication competence necessary for professional success in the business world. It focuses on the principles, techniques, and practices of effective written, oral, and non-verbal communication. Students learn to craft professional correspondence, deliver persuasive presentations, and engage in team and cross-cultural communication. The course emphasizes clarity, precision, tone, and ethics in all forms of business communication while integrating modern technological tools to meet the demands of the contemporary workplace.					
Learning Outcomes					
By the end of the course, students will be able to:					
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Week 8	Midterm Exam – Covers Units I–IV.	—
Week 9	Unit V: Non-Verbal and Interpersonal Communication – The importance and types of non-verbal communication; interpreting body language, facial expressions, and professional appearance.	Reading: Guffey & Loewy (Ch. 11) Exercise: Observe and interpret non-verbal cues in workplace interactions.
Week 10	Continuation of Unit V – Active listening skills and developing empathy for effective interpersonal communication.	Reading: Bovee & Thill (Ch. 12) Assignment 4: Reflection on active listening techniques.
Week 11	Unit VI: Cross-Cultural and Ethical Communication – Understanding cultural dimensions of communication; addressing communication challenges in multicultural settings; principles of ethical and corporate communication.	Reading: Guffey & Loewy (Ch. 13) Case Study: Communication challenges in multicultural teams.
Week 12	Unit VII: Employment Communication – Writing résumés and cover letters; the job application process and effective follow-up communication.	Reading: Bovee & Thill (Ch. 14–15) Assignment 5: Draft a résumé and cover letter for a professional role.
Week 13	Continuation of Unit VII – Interview preparation and techniques; verbal and non-verbal cues in interviews.	Reading: Guffey & Loewy (Ch. 15) Activity: Conduct mock interviews in pairs.
Week 14	Unit VIII: Contemporary Issues in Business Communication – Communication through social media platforms; managing corporate communication during crises.	Reading: Bovee & Thill (Ch. 16) Discussion: The role of social media in shaping corporate reputation.
Week 15	Continuation of Unit VIII – Communication for leadership and teamwork; enhancing team effectiveness through clear and motivating communication.	Reading: Guffey & Loewy (Ch. 17) Assignment 6: Evaluate communication effectiveness in a team setting.
Week 16	Course Review and Final Exam – Integration of written, oral, and non-verbal communication in professional contexts; preparation for the final exam.	Final Exam covering Units V–VIII.
Textbooks and Reading Material		
1. Textbooks i. Bovee, C. L., & Thill, J. V. <i>Business Communication Today</i> (Latest Edition). Pearson. ii. Guffey, M. E., & Loewy, D. <i>Essentials of Business Communication</i> (Latest Edition). Cengage Learning. 2. Suggested Readings i. Lehman, C. M., DuFrene, D. D., & Walker, R. P. <i>Business Communication</i> (Latest Edition). Cengage Learning. ii. Locker, K. O., & Kaczmarek, S. K. <i>Business Communication: Building Critical Skills</i> (Latest Edition). McGraw-Hill.		
Teaching Learning Strategies		
5. Lectures using multimedia and whiteboard 6. Interactive discussions and exercises 7. Case studies and simulations 8. Group Projects and Presentations		
Assignments: Types and Number with Calendar		

1. Assignment 1 (Week 1–2): Identifying communication barriers and solutions 2. Assignment 2 (Week 4): Writing a business memo and persuasive letter 3. Assignment 3 (Week 7): Simulated business meeting role-play 4. Assignment 4 (Week 10): Active listening reflection exercise 5. Assignment 5 (Week 12): Résumé and cover letter writing 6. Assignment 6 (Week 15): Team communication evaluation report			
Assessment			
Sr. No.	Elements	Weightage	Details
4.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
5.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
6.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

Programme	BSQPM	Course Code	GE-103	Credit Hours	2
Course Title	Civics and Community Engagement				
Course Introduction					
Civics and Community Engagement focus on understanding our roles, rights, and responsibilities as members of a community and a nation. This course explores the structure of government, the importance of civic participation, and how individuals can make a positive impact. Through learning about civic duties, volunteerism, and community involvement, you'll gain the tools to actively contribute to society.					
Learning Outcomes					
On the completion of the course, the students will: 1. Understand the foundations of government and citizen rights. 2. Recognize the importance of civic responsibility and community service. 3. Develop skills for effective participation in democratic processes. 4. Learn ways to get involved in community projects and social issues.					
Course Content				Assignments/Readings	
Week 1	Introduction to Civics and Citizenship Concepts of civics and citizenship			Reflection Task: Write a short paragraph on why civic education is important in your community.	
	Importance of civic education in modern society				
Week 2	Civic Engagement Meaning and significance of civic engagement			Task: Identify one example of civic engagement in Pakistan and discuss its impact.	
	Role of citizens in a democratic state				
Week 3	Foundations of Modern Society and Citizenship Historical development of citizenship			Reading: Article on the evolution of citizenship in modern societies.	
	Social and political foundations of modern citizenship				
Week 4	Types of Citizenship - Active citizenship - Participatory citizenship			Short Quiz: Identify and differentiate between types of citizenship.	
	Digital citizenship and emerging forms				
Week 5	Government Structure in Pakistan Structure and functions of government			Task: Create a visual chart explaining the structure and functions of the Government of Pakistan — federal, provincial, and local levels. Purpose: Reinforce understanding of governance through creativity.	
	Federal, provincial, and local levels				
Week 6	Democracy and Civil Society Relationship between democracy and civil society			Task: Write a short note on how civil society strengthens democracy.	

	Importance of civil participation in democratic systems	
Week 7	Political Participation and Representation Right to vote in Pakistan	Class Discussion: Why is youth participation important in elections?
	Importance of political representation and participation	
Week 8	Fundamental Rights under the 1973 Constitution - Overview of citizens' fundamental rights and liberties - Legal protection of human rights	
	Mid Term Revision and Exam	
Week 9	Civic Responsibilities and Duties Duties of citizens towards the state and society	Quiz: List three key civic responsibilities of citizens in Pakistan.
	Promoting active and responsible citizenship	
Week 10	Ethics in Civic Engagement Accountability, transparency, and integrity	Students select a local NGO, welfare organization, or community project (e.g., Edhi Foundation, Akhuwat, Saylani) and write a 2–3-page report analyzing its impact and challenges. Purpose: Connect theory with real-world civic engagement
	Non-violence, peaceful dialogue, and civility	
Week 11	Understanding Communities Concepts, nature, and characteristics of community	Task: Interview a local community leader and summarize their role in development.
	Role of communities in social development	
Week 12	Community Engagement and Development Approaches to effective community engagement	Task: Participate in a small community service (e.g., cleaning a public place, visiting an orphanage, tree plantation, or awareness drive). Prepare a short reflection report or photo journal. Apply learning to real-life civic action.
	Community development and social cohesion	
Week 13	Case Studies of Civic Success Analysis of successful community-driven initiatives	Group Discussion: Share one successful civic initiative in Pakistan and lessons learned.
	Lessons for Pakistan	
Week 14	Digital Citizenship Role of technology in civic engagement	Task: Students analyze their social media use and write a short essay on ethical online

	Cyber ethics and responsible social media use	behavior , misinformation, and responsible digital engagement. Purpose: Link technology with civic ethics.
Week 15	Digital Divide and Inequalities Access, usage, and socioeconomic/geographic disparities	Short Quiz: Identify major causes and effects of digital divide in Pakistan.
	Impact of digital divide on citizenship	
Week 16	Diversity, Inclusion, and Social Justice - Understanding diversity (ethnic, cultural, political) - Youth, women, and minorities in social development - Promoting inclusive citizenship and equal rights	Group project — propose and present an idea for promoting diversity, inclusion, or equality in Pakistan.
	Final Term Revision & Exam	
Textbooks and Reading Material		
<u>Textbooks.</u> - Feldpausch, B. J., & Omilian, S. M. (Latest Edition). <i>Community engagement: Principles, strategies, and practices</i>. Wiley. - Desjardins, R. & Wiksten, S. (Latest Edition). <i>Handbook of Civic Engagement and Education</i>. Edward Elgar <i>Civics & Community Engagement For ADP/BS</i> by Dr Arfan Latif — covers civic responsibilities & community participation in the Pakistani context. <i>Civics & Community Engagement</i> by Prof Abdul Aziz Taga — exam-oriented guide with short answers and MCQs for Pakistani syllabus. <u>Suggested Readings</u> - Honey: <i>A Textbook of Civics & Community Engagement (Urdu Translation)</i> — bilingual (English & Urdu) version tailored for students in Pakistan. Multan Kitab Ghar+1 <i>Political Education and Civic Engagement in Pakistan: A Critical Analysis of Curriculum, Pedagogy, and Youth Participation</i> — looks at how youth participation and civic education are handled in Pakistan's curriculum. qjssh.com.pk <i>Undergraduate Students Community Service Participation for Promoting Civic Engagement in Universities of Rawalpindi and Islamabad</i> — a study on how community service fosters civic engagement among students. ojs.jerssr.org.pk <i>Promoting Civic Engagement of Youth through New Media and Information Literacy</i> — examines how youth in Pakistan use digital media for civic engagement. alqantarajournal.com <i>Assessing the Effect of Public Participation on Policy Effectiveness and Citizen Compliance: The Mediating Role of Civic Engagement</i> — explores how public participation and civic engagement impact policy effectiveness in Pakistan. policyresearchjournal.com		
Teaching Learning Strategies		
- Lectures using multimedia and whiteboard - Interactive discussions and exercises - Case studies and simulations - Group Projects and Presentations		

Assignments: Types and Number with Calendar			
1. Assignment 1 (Week 2): write a short (500–700 words) reflection describing their understanding of citizenship and their role as a citizen of Pakistan. To develop personal awareness of civic identity. 2. Assignment 2 (Week 5): Groups presentation to debate whether Pakistan’s democracy effectively supports civic engagement and social justice. It will develop critical thinking, teamwork, and communication skills. 3. Assignment 3 (Week 11): Quiz on Fundamental Rights in the Constitution of Pakistan., Short essay on “The Role of Women and Youth in Nation Building.” Create a social media post raising awareness about an issue like corruption, voting, or waste management. 4. Assignment 4 (Week 15): Participate in a small community service (e.g., cleaning a public place, visiting an orphanage, tree plantation, or awareness drive). Prepare a short reflection report or photo journal. Apply learning to real-life civic action.			
Assessment			
Sr. No.	Elements	Weightage	Details
1.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
2.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
3.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

Programme	BSQPM	Course Code	GE-104	Credit Hours	2
Course Title	Islamic Studies/Ethics				
Course Introduction					
Islamic Studies and Ethics explores the teachings, values, and practices of Islam, emphasizing ethical principles and character development. This course covers fundamental Islamic beliefs, the life of the Prophet Muhammad (PBUH), and moral teachings derived from the Qur'an and Sunnah. The course also encourages reflection on how these values guide ethical decision-making and respectful interactions with others.					
Learning Outcomes					
On the completion of the course, the students will: 1. Understand basic information about Islamic Studies. 2. Enhance understanding of Islamic Civilization. 3. Improve skills of performing prayers and other acts of worship. 4. Develop abilities to understand issues related to faith and religious life					
Course Content				Assignments/Readings	
Week 1	Introduction to Quranic Studies: Basic Concepts of Quran: History of Quran; Uloom-ul -Quran			Write a short paper (800–1000 words) on “The Process of Revelation and Compilation of the Holy Quran.”	
	Study of Selected Text of Holy Quran: Verses of Surah Al-Baqra Related to Faith (Verse No-284-286)			How does understanding the history of the Quran strengthen faith in its authenticity?	
Week 2	Verses of Surah Al-Hujrat Related to Adab Al- Nabi (Verse No-1-18),				
	Verses of Surah Al-Mumanoon Related to Characteristics of faithful (Verse No-1-11)			Short quiz on vocabulary and meaning of the chosen verses.	
Week 3	Verses of Surah al-Furqan Related to Social Ethics (Verse No.63-77)				
	Verses of Surah Al-Inam Related to Ihkam (Verse No-152-154)			Short quiz on vocabulary and meaning of the chosen verses.	
Week 4	Verses of Surah Al-Ihزاب Related to Adab al-Nabi (Verse No.6,21,40,56,57,58.),				
	Verses of Surah Al-Hashar (18,19,20) Related to thinking, Day of Judgment,				
Week 5	Verses of Surah Al-Hashar (18,19,20) Related to thinking, Day of Judgment,				

	Verses of Surah Al-Saf Related to Tafakar,Tadabar (Verse No-1,14)	
Week 6	Seerat of Holy Prophet (S.A.W) in Makka: Life of Muhammad Bin Abdullah (Before Prophet Hood)	Essay: <i>“Five Lessons from the Makkan Period and Their Relevance Today.”</i>
	Life of Holy Prophet (S.A.W) in Makkah; Important Lessons Derived from the life of Holy Prophet in Makkah;	
Week 7	Seerat of Holy Prophet (S.A.W) in Madina: Life of Holy Prophet (S.A.W) in Madina:	
	Important Events of Life Holy Prophet in Madina; Important Lessons Derived from the life of Holy Prophet in Madina;	
Week 8	Introduction to Sunnah: Basic Concepts of Hadith; History of Hadith; Kinds of Hadith; Uloom –ul- Hadith; Sunnah & Hadith; Legal Position of Sunnah	Class Discussion: Debate – “Can Islamic Law be fully understood without Hadith?”
	Mid Exam	
Week 9	Introduction to Islamic Law & Jurisprudence: Basic Concepts of Islamic Law & Jurisprudence; History & Importance of Islamic Law & Jurisprudence;	
	Sources of Islamic Law & Jurisprudence; Nature of Differences in Islamic Law; Islam and Sectarianism;	
Week 10	Islamic Culture & Civilization: Basic Concepts of Islamic Culture & Civilization; Historical Development of Islamic Culture & Civilization;	Discussion Post: Compare Islamic civilization with another ancient civilization (Greek, Roman, Chinese).
	Characteristics of Islamic Culture & Civilization; Islamic Culture & Civilization and Contemporary Issues;	
Week 11	Islam & Science: Basic Concepts of Islam & Science;	Research Task: Write about a Muslim scientist (e.g., Ibn Sina, Al-Biruni, Ibn al-Haytham) and his contribution.
	Contributions of Muslims in the Development of Science; Quran & Science	
Week 12	Islamic Economic System: Basic Concepts of Islamic Economic, System; Means of Distribution of wealth in Islamic Economics;	Case study — <i>“The Concept of Riba and Its Modern Financial Implications.”</i>

	Islamic Concept of Riba; Islamic Ways of Trade & Commerce;	
Week 13	Political System of Islam; Basic Concepts of Islamic Political System;	Short essay — “ <i>The Concept of Sovereignty in Islam and Its Role in Modern Governance.</i> ”
	Islamic Concept of Sovereignty; Basic Institutions of Govt. in Islam;	
Week 14	Islamic History: Period of Khlaft-E-Rashida;	
	Islamic History: Period of Umayyads;	
Week 15	Islamic History: Period of Abbasids;	MCQ Quiz: On political and cultural highlights of the Umayyad and Abbasid eras.
	Social System of Islam; Basic Concepts of Social System of Islam, Elements of Family, Ethical Values of Islam	Group Discussion: How can Islamic ethical values solve today’s social problems?
Week 16	Revisions class	
	Revision Class Final exam	
Textbooks and Reading Material		
1.Textbooks. <i>Islamic Ethics: A Handbook</i> by M.A. Ansar, Latest Edition <i>In the Footsteps of the Prophet: Lessons from the Life of Muhammad</i> by Tariq Ramadan, <i>‘Uloom-ul-Qur’an</i>” by M. M. Azami – A standard English reference on compilation, revelation, and preservation of the Quran. <i>“An Introduction to the Sciences of the Qur’an”</i> by Ahmad Von Denffer – Clear, concise, and well-organized. <i>“The History of the Qur’anic Text: From Revelation to Compilation”</i> by M. M. Al-Azami <i>“Al-Itqan fi Ulum al-Qur’an”</i> by Jalaluddin Al-Suyuti – Classical Arabic source (translated versions also available). 2. Suggested Readings <i>“Tafheem-ul-Quran”</i> (Selected volumes) by Syed Abul A’la Maududi <i>“Tafsir Ibn Kathir”</i> (for the selected surahs) <i>“Al-Quran: A Contemporary Translation”</i> by Abdullah Yusuf Ali (with commentary)		
Teaching Learning Strategies		
- Lectures using multimedia and whiteboard - Interactive discussions and exercises - Case studies and simulations - Group Projects and Presentations		
Assignments: Types and Number with Calendar		
Assignment 1 (Week 1): Reflection — “<i>How does understanding the history of the Quran strengthen faith in its authenticity?</i>” Assignment 2 (Week 3): Short quiz on vocabulary and meanings of selected verses from Surah Al-Furqan and Surah Al-An’am. Assignment 3 (Week 7): Reflection paper — Lessons derived from the Prophet’s (S.A.W) life in Madina and their application in modern life.		

4. Assignment 4 (Week 10): Discussion post — Compare Islamic civilization with another ancient civilization (e.g., Greek, Roman, or Chinese). 5. Assignment 5 (Week 12): Case study — “<i>The Concept of Riba and Its Modern Financial Implications.</i>” 6. Assignment 6 (Week 14): Timeline creation — Major political and cultural achievements during the Khilafat-e-Rashida and Umayyad periods. 7. Assignment 7(Week 15):Quiz: MCQs on political and cultural highlights of the Umayyad and Abbasid eras.			
Assessment			
Sr. No.	Elements	Weightage	Details
7.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
8.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
9.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

Programme	BSQPM	Course Code	QPM-101	Credit Hours	3
Course Title	Principles of Management				
Course Introduction					
This course provides a comprehensive overview of key management functions and their significance within organizations and society. It equips students with essential analytical, managerial, and technical skills for effective management practice. Topics include planning, organizing, leading, and controlling, along with modern management theories, ethics, globalization, and innovation.					
Learning Outcomes					
By the end of the course, students will be able to:					
1. Understand and apply core management concepts and theories to real-world business situations. 2. Develop communication, teamwork, problem-solving, and decision-making skills for managerial roles. 3. Explain the interrelated functions of planning, organizing, leading, and controlling. 4. Analyze different organizational structures and their impact on management and operations. 5. Evaluate the importance of control, performance measurement, and corrective managerial actions in organizations.					
Course Content				Assignments/Readings	
Week 1	Unit I: Introduction to Management – Definition, importance, and levels of management; roles and functions of managers.			Reading: Eichhorn & Towers (Ch. 1–2). Assignment 1: Write a short note on the importance of management in business success.	
Week 2	Unit II: Traditional and Contemporary Issues in Management – Historical perspectives and evolving trends.			Reading: Mitra (Ch. 3). Discussion: Compare classical and modern management approaches.	
Week 3	Continuation of Unit II – Management theories and perspectives: classical, behavioral, quantitative, and systems approaches..			Reading: Robbins (Ch. 2–3). Exercise: Identify real-world examples of each theory.	
Week 4	Unit III: The Environment and Culture of Organizations – Internal/external environments; the role of culture in shaping management practices.			Reading: Eichhorn & Towers (Ch. 4). Assignment 2: Analyze an organization’s culture and its impact on employee performance.	
Week 5	Unit IV: Planning and Strategy – Nature and purpose of planning; strategic planning process; decision-making tools.			Reading: Mitra (Ch. 5–6). Exercise: Prepare a brief strategic plan for a small business.	
Week 6	Continuation of Unit IV – Decision making and problem solving; rational decision-making model; barriers to effective decisions.			Reading: Robbins (Ch. 7). Class Activity: Case study on managerial decision making.	
Week 7	Unit V: Organizing – Principles of organization, departmentalization, span of control, delegation, and authority.			Reading: Eichhorn & Towers (Ch. 8). Assignment 3: Design an organizational structure for a company..	

Week 8	Midterm Exam – Covers Units I–IV.	—
Week 9	Unit VI: Leadership and Motivation – Leadership styles and theories; motivational techniques and their applications.	Reading: Mitra (Ch. 9–10). Role-play: Demonstrate effective leadership communication.
Week 10	Unit VII: Communication and Team Management – Developing communication and teamwork for managerial success.	Reading: Robbins (Ch. 11). Assignment 4: Reflective essay on teamwork challenges.
Week 11	Unit VIII: Controlling Process – Meaning, steps, and techniques of managerial control; performance standards.	Reading: Eichhorn & Towers (Ch. 12). Exercise: Create a control chart for a business process.
Week 12	Unit IX: Managing Change and Innovation – Causes of organizational change; resistance management; innovation process.	Reading: Mitra (Ch. 13). Case Study: Managing change during digital transformation.
Week 13	Unit X: Globalization and Managers – The impact of globalization on management practices; global strategy.	Reading: Robbins (Ch. 14). Discussion: Global leadership skills for modern managers.
Week 14	Unit XI: Ethics and Corporate Social Responsibility – Ethical decision-making and stakeholder management.	Reading: Eichhorn & Towers (Ch. 15). Assignment 5: Analyze an ethical dilemma faced by a company.
Week 15	Unit XII: Management and New Ventures – Entrepreneurship, innovation, and start-up management.	Reading: Mitra (Ch. 16). Project: Develop a brief business plan for a new venture.
Week 16	Course Review and Final Exam – Integration of management concepts and functions.	Final Exam covering Units VI–XII.

Textbooks and Reading Material

1. Textbooks

1. Peter Eichhorn & Ian Towers. Principles of Management: Efficiency and Effectiveness in the Private and Public Sector. Springer, Latest Edition.
2. J.K. Mitra. Principles of Management. Oxford University Press, Latest Edition.
3. Stephen Robbins. Principles of Management. Latest Edition.

2. Suggested Readings

4. Koontz, H., & Weihrich, H. Essentials of Management: An International Perspective. McGraw-Hill, Latest Edition.
5. Classic reference for management theories and principles.
6. Ricky W. Griffin. Management: Principles and Practices. Cengage Learning, Latest Edition.
7. Covers both traditional and contemporary management concepts with case studies.
8. Daft, R. L. Management. South-Western College Publishing, Latest Edition.
9. Great for understanding leadership, innovation, and organizational change.
10. Stoner, J. A. F., Freeman, R. E., & Gilbert, D. R. Management. Prentice Hall, Latest Edition.

11. Excellent for foundations of planning, organizing, and control. 12. Drucker, P. F. The Practice of Management. Harper Business. 13. A management classic introducing the concept of “management by objectives.” 14. Mintzberg, H. Managers Not MBAs. Berrett-Koehler Publishers. 15. Challenges traditional views of management and promotes real-world thinking. 16. Harvard Business Review (HBR) Articles. Especially: “What Makes a Leader?” by Daniel Goleman “Managing Oneself” by Peter Drucker “The Balanced Scorecard—Measures that Drive Performance” by Kaplan & Norton			
Teaching Learning Strategies			
1. Lectures using multimedia and whiteboard 2. Interactive discussions and exercises 3. Case studies and simulations 4. Group Projects and Presentations			
Assignments: Types and Number with Calendar			
17. Assignment 1 (Week 1): Importance of management in business 18. Assignment 2 (Week 4): Organizational culture analysis 19. Assignment 3 (Week 7): Designing organizational structure 20. Assignment 4 (Week 10): Reflection on teamwork challenges 21. Assignment 5 (Week 14): Ethical dilemma analysis 22. Project (Week 15): Business plan for a new venture			
Assessment			
Sr. No.	Elements	Weightage	Details
10.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
11.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
12.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

Programme	BSQPM	Course Code	QPM-102	Credit Hours	3
Course Title	Accounting & Financial Management				
Course Introduction					
This course introduces students to the principles and concepts of accounting and financial management. It emphasizes understanding financial statements, accounting cycles, and key financial ratios used in decision-making. Students will also explore financial analysis, working capital management, and the time value of money to develop practical financial literacy and analytical skills.					
Learning Outcomes					
On the completion of the course, the students will: 1. Explain the basic concepts, functions, and scope of accounting and financial management. 2. Record business transactions and prepare basic financial statements. 3. Analyze financial statements using ratio and trend analysis. 4. Apply financial management principles to working capital and investment decisions. 5. Understand and compute time value of money concepts, such as interest and annuities.					
Course Content				Assignments/Readings	
Week 1	Introduction to Organizations & Management • What is an organization; Functions and levels of management; • Roles of financial managers			Assignment 1: Write a short note on how finance supports management goals.	
	• Case study: how financial managers contribute to a company’s success.				
Week 2	Introduction to Financial Management • Goals of financial management, importance of finance in decision-making.			Activity: Class discussion on financial objectives.	
	• Case study: Identify financial goals of a real company and how they increase shareholder value.				
Week 3	Accounting Process Overview • Financial vs. Management accounting, forms of business organizations.			Exercise: Analyze transactions and their effect on the accounting equation.	
	Accounting Cycle (Part 1) • Assets, Liabilities, Owners’ Equity, and The Accounting Equation. • Analyze sample transactions and show their effect on the accounting equation • Identify asset/liability/equity categories.			Assignment 2: Classify given accounts into assets, liabilities, or equity.	
Week 4	Accounting Cycle (Part 2) • The use of accounts, The Journal, Debit and Credit entries. • Understanding of debit/credit rules.			Quiz 1: Debit and Credit identification	
	• Practice questions of Recording transactions in a journal format.				

Week 5	Accounting Cycle (Part 3) - The Ledger, posting entries, and preparing a trial balance. - Post transactions to ledgers and make a trial balance. - Identify steps of the accounting cycle in order.	Assignment 3: Identify and arrange accounting cycle steps in order.
	Practice questions of making ledgers and trial balance	Assignment
Week 6	Financial Statements (Part 1) - Preparing financial statements, Income Statement, Retained Earnings. - Prepare an income statement using provided data.	Exercise: Prepare an income statement using provided data.
	Quiz & practice questions	Quiz 2: Based on income statement structure.
Week 7	Financial Statements (Part 2) - The Balance Sheet and its structure. - Prepare a balance sheet for a sample business. - Match balance sheet items to their correct category.	Practice Questions: Prepare a balance sheet and match items to categories.
	Practice questions	
Week 8	Practice questions and quiz	Quiz
	Mid term	
Week 9	Financial Statement Analysis (Part 1) - Tools of analysis, measures of liquidity and credit risk. - Compute and interpret current ratio and quick ratio.	Practice Questions: Compute and interpret current ratio and quick ratio. Assignment 4: Write a short analysis of a company's liquidity position.
	Practice questions	
Week 10	Financial Statement Analysis (Part 2) - Measures of profitability. - Calculate gross profit margin and net profit margin using data.	Quiz 3: Ratio interpretation questions. Exercise: Analyze real company data using ratios.
	Practice questions	
Week 11	Financial Ratios (Part 1) - Types of financial ratios (liquidity, profitability, solvency, efficiency). - Prepare a summary chart of 4 ratio types and formulas. - Identify which ratio measures what.	Case Study: Significance of capital structure in a business. Assignment 6: Prepare a short report on the importance of working capital.
	Practice questions	Assignment
Week 12	Financial Ratios (Part 2) Interpretation and decision-making using ratios; Problem-solving.	Quiz 3: Ratio interpretation questions. Exercise: Analyze real company data using ratios.

	Solve ratio analysis problems using real company financials.	
	Ratio interpretation questions	Quiz
Week 13	Financial Management (Part 1) - Capital structure and working capital management. - Prepare a short report on the importance of working capital. - Identify capital vs. working capital items	Case Study: Significance of capital structure in a business. Assignment 6: Prepare a short report on the importance of working capital.
	Case study: significance of capital structure	
Week 14	Financial Management (Part 2) - Financial cycle and maximizing shareholder wealth. - Create a diagram showing a company's financial cycle.	Exercise: Create a diagram showing a company's financial cycle. Practice Problems: Solve compound interest calculations.
	Time Value of Money (Part 1) - Interest rates, simple and compound interest, compounding more than once a year. - Solve numerical examples on compound interest.	Assignment 7: Calculate the present value of an annuity and bond price. Practice Questions: Review simple and complex interest problems.
Week 15	Practice questions	
	Time Value of Money (Part 2) - Annuities (ordinary, due, perpetuity), bond valuation, review of simple and complex problems. - Calculate the present value of an ordinary annuity and bond price.	Assignment
Week 16	Quiz: Final review quiz (mixture of all course topics).	
	Practice questions	
Textbooks and Reading Material		
1.Textbooks. - Financial & Managerial Accounting; J. R. Williams, S. F. Haka, M.S. Bettner, J. V. Carcello; Latest Edition - Fundamentals of Financial Management; Van Horn; Latest Edition - Principles of Managerial Finance; Lawrence J Gitman; Latest Edition 2. Suggested Readings - Accounting Made Simple: Accounting Explained in 100 Pages or Less by Mike Piper — a beginner book that gives a quick overview of accounting basics. - The Accounting Game: Learn the Basics of Financial Accounting — As Easy as Running a Lemonade Stand by Darrell Mullis & Judith Orloff — fun and practical way to engage with accounting ideas.		
Teaching Learning Strategies		

1. Lectures using multimedia and whiteboard 2. Interactive discussions and exercises 3. Case studies and simulations 4. Group Projects and Presentations			
Assignments: Types and Number with Calendar			
1. Assignment 1 (Week 1): Role of finance in organizational success 2. Assignment 2 (Week 3): Classification of accounts into assets, liabilities, and equity 3. Assignment 3 (Week 5): Preparing ledgers and trial balance 4. Assignment 4 (Week 9): Liquidity analysis using current and quick ratios 5. Assignment 5 (Week 11): Summary chart of financial ratios and formulas 6. Assignment 6 (Week 13): Report on the importance of working capital 7. Assignment 7 (Week 15): Time value of money – annuity and bond valuation project			
Assessment			
Sr. No.	Elements	Weightage	Details
1.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
2.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
3.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

Program	BSQPM	Course Code	QPM-103	Credit Hours	2
Course Title	Artificial Intelligence Applications				
Course Introduction					
This course provides an overview of Artificial Intelligence (AI) with emphasis on real-world applications rather than deep technical implementation. Students learn fundamental AI concepts and explore how AI techniques are applied across domains such as business, healthcare, finance, transportation, and more. Through case studies and examples, the course demonstrates how AI systems solve practical problems while addressing ethical, social, and organizational challenges. Topics include expert systems, machine learning, natural language processing, robotics, computer vision, and the future of AI in society.					
Learning Outcomes					
On completion of the course, students will be able to:					
1. Describe major AI approaches including knowledge-based systems, machine learning, and neural networks, and differentiate between them at a conceptual level. 2. Identify and analyze AI applications across domains such as business, healthcare, finance, and transportation, assessing their benefits and limitations. 3. Discuss requirements for implementing AI systems such as data needs, computational capacity, and integration with existing processes to evaluate solution feasibility. 4. Recognize ethical and social issues in AI use, including bias, privacy, and job displacement, and explain the importance of responsible and transparent AI practices.					
Course Content				Assignments/Readings	
Week 1	Unit I: Introduction to Artificial Intelligence: Definition, history, and key terminology; the Turing Test and concept of machine intelligence. Unit II: AI Problem:Solving and Intelligent Agents: Intelligent agents and AI in daily life (e.g., virtual assistants, recommendation systems).			Reading: Russell (Ch. 1 – “What Is AI?”)Assignment 1: AI Around Us Essay – Identify an AI application in daily life and explain its working and benefits. (Due Week 2)	
Week 2	Unit III: Knowledge:Based and Expert Systems : Rule:based systems, knowledge representation, and early AI (e.g., MYCIN).Unit IV: AI in Business Decision Support : Use of expert systems in credit approval, configuration systems, and other decision models.			Reading: Negnevitsky (Ch. 2 : “Expert Systems and Knowledge:Based AI”)Assignment 1 Due	
Week 3	Unit V: Machine Learning Overview : Introduction to supervised, unsupervised, and reinforcement learning; conceptual overview of algorithms.Unit VI: AI in Data Analytics : Predictive analytics, anomaly detection, and business applications.			Reading: Liu (Ch. 3 : “Machine Learning Fundamentals”)Suggested: Mitchell (Ch. 1)	
Week 4	Unit VII: Neural Networks and Deep Learning : Artificial neural networks, deep learning, and applications in image/speech recognition. Unit VIII: AI in Vision and Speech : Computer vision and NLP applications (CNNs and RNNs overview).			Reading: Russell (Ch. 18 : Neural Networks); Case Study: Image Recognition Demonstration	
Week 5	Unit IX: Natural Language Processing (NLP) Language translation, sentiment analysis, chatbots. Unit X: AI in Personal Assistants : Understanding Siri, Alexa, and Google Assistant.			Reading: Liu (Ch. 6 : “NLP Applications”)Suggested: Article on chatbot use cases	

Week 6	Unit XI: Robotics and Autonomous Systems : AI in robotics, sensors, control, and perception. Unit XII: Self-Driving Cars : Case examples: Tesla Autopilot, Waymo; technical and ethical perspectives.	Reading: Russell (Ch. 25 : “Robotics”)Case Study: Tesla/Waymo Self-Driving SystemsAssignment 2: <i>AI in Industry Report</i> : Research AI applications in a chosen sector. (Due Week 9)
Week 7	Unit XIII: AI in Business and Finance : Predictive analytics, algorithmic trading, recommendation systems. Unit XIV: AI in Manufacturing and Industry 4.0 : Smart factories, IoT integration, and predictive maintenance.	Reading: Liu (Ch. 8 : “AI in Business and Finance”)Suggested: Industry 4.0 Case Study
Week 8	Midterm Exam : Covers Units I:XIII.	—
Week 9	Unit XV: AI in Healthcare : Diagnostic systems, personalized medicine, drug discovery. Unit XVI: AI in Education and Public Services : Smart cities, predictive policing, and AI tutors.	Reading: Russell (Ch. 28 : “AI in the Open World”)Assignment 2 Due
Week 10	Unit XVII: AI in Transportation and Smart Infrastructure : Route optimization, drone deliveries, and public transit AI. Unit XVIII: AI in Creativity and Media : Generative AI for art, music, and content creation.	Reading: Liu (Ch. 7 : “AI in Transportation and Manufacturing”)Suggested: Article on AI-generated art/music
Week 11	Unit XIX: Ethical and Social Implications of AI : Bias, privacy, and workforce impact. Unit XX: AI Governance and Policy : Regulations, AI ethics boards, explainable AI.	Reading: “ <i>Ethics of AI: A Case Study Approach</i> ” (provided)Case Study: Analysis of AI bias incident
Week 12	Unit XXI: The Future of AI : AGI vs. narrow AI, brain:computer interfaces, quantum computing. Unit XXII: AI and the Future of Work : AI collaboration, future skills, and human:AI synergy.	Reading: Russell (Ch. 27 : “Towards Human-Level AI”); Lee (Ch. 8 : <i>AI Superpowers</i>)Assignment 3: <i>Emerging AI Technology Project</i> : Group research on future AI applications. (Presentations in Week 15)
Week 13	Unit XXIII: Case Studies of AI Applications : Real-world analyses: IBM Watson, DeepMind’s AlphaGo, AI for social good. Unit XXIV: Project Work Session : Group project guidance and in-class collaboration.	Reading: Case Study Materials (provided)
Week 14	Unit XXV: AI Implementation in Organizations : Data management, feasibility, change management. Unit XXVI: Course Recap and Review : Integration of AI concepts and applications; Q&A.	Reading: Marr (selected excerpts on AI implementation)
Week 15	Group Project Presentations and Wrap-Up : Emerging AI technology presentations; reflections on AI’s future.	Assignment 3 Presentations Due
Week 16	Final Exam : Comprehensive exam covering all units.	—
Textbooks and Reading Material		

Textbooks

- i. Russell, S., & Norvig, P. Artificial Intelligence: A Modern Approach (Latest Edition). Pearson.
- ii. Liu, A. C. C., Law, O. M. K., & Law, I. Understanding Artificial Intelligence: Fundamentals and Applications (Latest Edition). Wiley.

Suggested Readings

- i. Mitchell, M. Artificial Intelligence: A Guide for Thinking Humans. Penguin, 2019.
- ii. Lee, K. F. AI Superpowers: China, Silicon Valley, and the New World Order. Houghton Mifflin, 2018.
- iii. Sadalage, P., & Fowler, M. NoSQL Distilled. Addison-Wesley, 2013.

Teaching Learning Strategies

1. Lectures using multimedia and a whiteboard
2. Interactive discussions and exercises
3. Case studies and simulations
4. Group Projects and Presentations

Assignments: Types and Number with Calendar

1. Assignment 1 (Week 1–2): AI in Daily Life Essay – Identify and explain a personal AI experience.
2. Assignment 2 (Week 6–9): AI in Industry Report – Research AI applications in a chosen field.
3. Assignment 3 (Week 12–15): Emerging AI Technology Project – Group research and presentation on an advanced AI application.
4. (Optional) Assignment 4 (Ongoing): Reading Reflections – Short responses on selected case studies for participation/extra credit.

Assessment

Sr. No.	Elements	Weightage	Details
1.	Midterm Assessment	35%	Written Assessment at the mid:point of the semester.
2.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands:on:activities, short tests, projects, practical, reflections, readings, quizzes etc.
3.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

SEMESTER II

Programme	BSQPM	Course Code	GE-105	Credit Hours	2
Course Title	Philosophy				
Course Introduction					
Philosophy is the study of fundamental questions concerning existence, knowledge, values, reason, and human purpose. This course introduces students to the main branches of philosophy—metaphysics, epistemology, ethics, logic, aesthetics, and political philosophy—along with major thinkers from ancient to modern times. Students will explore philosophical arguments, develop critical thinking, and apply philosophical reasoning to real-world issues such as morality, politics, science, and technology. Through readings, discussions, and reflective assignments, students will learn how philosophy shapes human understanding and global thought.					
Learning Outcomes					
On the completion of the course, the students will: 1. Understanding Key Philosophical Concepts 2. Understanding philosophical arguments and evaluating different perspectives. 3. Historical and Cultural Awareness of philosophical ideas across different cultures and historical periods to understand their influence on modern thought. 4. Understanding of Ethical Reasoning 5. Applying Philosophy to Modern Issues					
Course Content			Assignments/Readings		
Week 1	Unit I: Introduction to Philosophy 1.1 Definition and Scope of Philosophy 1.2 Major Branches of Philosophy 1.3 Role of Philosophy in Society		Reading: Perry et al., <i>Introduction to Philosophy</i> , Ch. 1 Reflection: “Why is philosophy important today?”		
Week 2	Unit II: History of Philosophy (I) 2.1 Ancient Philosophy: Socrates, Plato, Aristotle		Reading: Velasquez, <i>Philosophy: A Text with Readings</i> , Ch. 2 Assignment 1: Comparison chart of Socrates, Plato, and Aristotle		
Week 3	Unit III: History of Philosophy (II) 2.2 Medieval Philosophy: Augustine, Aquinas 2.3 Modern Philosophy: Descartes, Kant, Hume m		Reading: Cahn, <i>The Elements of Philosophy</i> , Ch. 3 Exercise: Create a timeline of philosophical evolution		
Week 4	Unit IV: Contemporary Philosophy 3.1 Existentialism, Pragmatism, Postmodernism		Reading: Sartre, <i>Existentialism is a Humanism</i> (excerpt) Assignment 2: Essay – “What does Existentialism mean to me?”		
Week 5	Unit V: Metaphysics (I) 4.1 The Nature of Reality and Being 4.2 The Mind-Body Problem		Reading: Russell, <i>The Problems of Philosophy</i> , Ch. 4 Activity: Group discussion – “What is real?”		

Week 6	Unit VI: Metaphysics (II) 4.3 Free Will vs. Determinism	Reading: Perry et al., Ch. 4 Assignment 3: Argument essay defending either free will or determinism
Week 7	Unit VII: Epistemology (I) 5.1 Theories of Knowledge: Empiricism, Rationalism, Skepticism	Reading: Velasquez, Ch. 5 Exercise: Debate – Empiricism vs. Rationalism
Week 8	• Midterm Examination	Midterm Exam (Weeks 1–7)
Week 9	Unit VIII: Epistemology (II) 5.2 The Nature of Belief, Truth, and Justification	Reading: Russell, <i>The Problems of Philosophy</i> , Ch. 7 Assignment 4: Essay – “Can we ever know absolute truth?”
Week 10	Unit IX: Ethics and Moral Philosophy (I) 6.1 Theories of Morality: Utilitarianism, Deontology, Virtue Ethics	Reading: Velasquez, Ch. 9 Activity: Ethical dilemma role-play
Week 11	Unit X: Ethics and Moral Philosophy (II) 6.2 Ethical Relativism vs. Universalism 6.3 Applied Ethics (Bioethics, Environmental, Business)	Reading: Singer, <i>Practical Ethics</i> (excerpts) Assignment 5: Analyze an ethical dilemma in modern society
Week 12	Unit XI: Logic and Argumentation 7.1 Deductive and Inductive Reasoning 7.2 Logical Fallacies and Argument Structure	Reading: Cahn, Ch. 10 Exercise: Identify fallacies in sample arguments
Week 13	Unit XII: Political Philosophy 8.1 Theories of Justice and Rights 8.2 Social Contract: Hobbes, Locke, Rousseau	Reading: Hobbes’ <i>Leviathan</i> (excerpt), Locke’s <i>Second Treatise</i> (excerpt) Discussion: “What makes government legitimate?”
Week 14	Unit XIII: Philosophy of Science 9.1 Scientific Method and Philosophical Foundations 9.2 Science vs. Pseudoscience	Reading: Popper, <i>The Logic of Scientific Discovery</i> (excerpts) Activity: Identify pseudoscientific claims in media
Week 15	Unit XIV: Aesthetics and Existentialism 10.1 Philosophy of Art and Beauty 10.2 Freedom, Authenticity, and Absurdity (Kierkegaard, Nietzsche, Camus)	Reading: Camus, <i>The Myth of Sisyphus</i> (excerpt) Assignment 6: Write reflection on “The Meaning of Life”
Week 16	Unit XV: Philosophy in the Modern Context 11.1 Philosophy and Technology 11.2 AI, Global Ethics, and Future Challenges	Reading: Selected article on AI Ethics
		Final Exam (Weeks 8–16)
Textbooks and Reading Material		
1. Textbooks.		

i. Perry, J., Bratman, M., & Fischer, J. M. <i>Introduction to Philosophy</i> , Latest Edition. ii. Velasquez, M. <i>Philosophy: A Text with Readings</i> , Pearson, Latest Edition. iii. Cahn, S. M. <i>The Elements of Philosophy</i> , Oxford University Press. 2. Suggested Readings i. Russell, B. <i>The Problems of Philosophy</i> (Project Gutenberg, Free). ii. Sartre, J.-P. <i>Existentialism is a Humanism</i> . iii. Singer, P. <i>Practical Ethics</i> . iv. Gaarder, J. <i>Sophie's World</i> (novel-style overview of philosophy). v. Open Educational Resources: <i>Introduction to Philosophy Series</i>			
Teaching Learning Strategies			
1. Lectures using multimedia and whiteboard 2. Interactive discussions and exercises 3. Case studies and simulations 4. Group Projects and Presentations			
Assignments: Types and Number with Calendar			
1. Assignment 1 (Week 2): Ancient Philosophy Comparison 2. Assignment 2 (Week 4): Existentialism Reflection Essay 3. Assignment 3 (Week 6): Argument on Free Will vs. Determinism 4. Assignment 4 (Week 9): Essay on Truth and Knowledge 5. Assignment 5 (Week 11): Modern Ethical Dilemma Analysis 6. Assignment 6 (Week 15): Reflection on Meaning of Life			
Assessment			
Sr. No.	Elements	Weightage	Details
1.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
2.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
3.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

Program	BSQPM	Course Code	GE-106	Credit Hours	3
Course Title	Statistics				
Course Introduction					
Statistics is the science of collecting, analyzing, interpreting, and presenting data. This course introduces you to the fundamental concepts and techniques of statistics, emphasizing their application in various fields such as business, social sciences, healthcare, and more					
Learning Outcomes					
After completing this course, the student will be able to:					
1. Understand statistical terms, Analyze and interpret data using descriptive and inferential statistical methods. 2. Use statistical reasoning to make informed and evidence-based decisions. 3. Understand basic probability concepts and how they relate to real-world situations. 4. Formulate hypotheses and test them using appropriate statistical methods. 5. Evaluate statistical information critically, identifying misuse or misinterpretation of data.					
Course Content				Assignments/Readings	
Week 1	Introduction to Statistics - Definition, scope, and importance of statistics - Types of data (qualitative, quantitative) - Scales of measurement (nominal, ordinal, interval, ratio)			Read different types of data from real-life examples. Quiz: Basic concepts and types of data.	
Week 2	Data Representation - Frequency distributions - Tabular and graphical representation of data (bar chart, histogram, pie chart, frequency polygon)			Assignment 1 (Week 2): Prepare frequency tables and graphical representations for a given dataset using Excel.	
Week 3	Statistical Measures I - Measures of Central Tendency (mean, median, mode) - When and how to use each measure			Task: Calculate mean, median, and mode from a small dataset. Quiz 2: Measures of central tendency.	
Week 4	Statistical Measures II - Measures of Variability (range, variance, standard deviation) - Measures of Shape (skewness, kurtosis)			Assignment 2 (Week 4): Compute and interpret variance and standard deviation using SPSS or Excel.	
Week 5	Introduction to Probability Concepts - Sample space and events - Simple and compound events - Probability rules and laws			Task: Draw probability trees for simple and compound events. Quiz 3: Probability concepts.	
Week 6	Random Variables and Expected Values - Definition of random variables - Expected value and its applications			Assignment 3 (Week 6): Solve expected value problems with examples from business or social science.	
Week 7	Statistical Distributions I - Discrete distributions (Binomial and Poisson) - Characteristics and real-world applications			Task: Solve binomial distribution problems. Quiz 4: Binomial and Poisson distributions.	
Week 8	Statistical Distributions II Continuous distributions (Normal distribution)			Midterm Exam (Covers Weeks 1–7)	

	• Properties and applications of the normal curve Midterm Revision & Exam	
Week 9	Sampling Theory • Population and sample • Sampling techniques • Sampling distributions and central limit theorem	Assignment 4 (Week 9): Demonstrate central limit theorem using sample data.
Week 10	Estimation Concepts • Point estimation • Interval estimation • Confidence intervals and significance levels	Quiz 5: Confidence interval and estimation. Task: Calculate a 95% confidence interval for a given dataset.
Week 11	Hypothesis Testing I • Null and alternative hypotheses • Type I and Type II errors • One-tailed and two-tailed tests	Assignment 5 (Week 11): Develop hypotheses and test them using sample data.
Week 12	Hypothesis Testing II • Inference about population means and proportions • Comparing two populations	Quiz 6: Testing hypotheses about two population means.
Week 13	Regression Analysis I • Concept of correlation • Pearson and Spearman correlation coefficients • Interpreting correlation values	Assignment 6 (Week 13): Calculate correlation coefficients using Excel or SPSS.
Week 14	Regression Analysis II • Simple linear regression model • Line of best fit • Interpreting slope and intercept	Task: Create a regression line and interpret results. Quiz 7: Regression interpretation.
Week 15	Introduction to Statistical Software • Overview of R, SPSS, Excel, and Minitab • Performing descriptive and inferential statistics	Assignment 7 (Week 15): Perform a complete statistical analysis using one software (data entry, graphs, mean, SD, regression).
Week 16	Course Review & Final Project Presentation • Summary of statistical methods and their applications • Review for final exam	Final Project: Analyze a real-world dataset using software (Excel/SPSS), write report interpreting descriptive and inferential results. Final Exam Preparation.
Textbooks and Reading Material		
Textbooks: - Statistics for Managers Using Microsoft Excel; latest edition; Levine, D.M., Stephan, D.F. and Szabat, K.A.; Pearson - Statistics for Business and Economics; latest edition; McClave, J. T., Benson, P. G. and Sincich, T.T.; Pearson - Fundamentals of Quality Control & Improvement; latest Edition; Amitava Mitra; Prentice Hall of India private limited, New Delhi - Business Statistics: A First Course; Latest Edition; David M. Levine, Timothy C. Krehbiel, Mark L. Berenson; Pearson Education Reading material: “Practical Statistics for Data Scientists” by Peter Bruce, Andrew Bruce, and Peter Gedeck → Focuses on applying statistical ideas in data analysis and visualization.		

ii. “Discovering Statistics Using SPSS” by Andy Field → Ideal for learning how to perform statistical analyses using SPSS software.			
Teaching Learning Strategies			
1. Lectures using multimedia and a whiteboard 2. Interactive discussions and exercises 3. Case studies and simulations 4. Group Projects and Presentations			
Assignments: Types and Number with Calendar			
1. Assignment 1 (Week 1–2): Statistics in Daily Life Essay – Write a short essay (800–1000 words) explaining how statistics is used in everyday decision-making and different professions. 2. Assignment 2 (Week 4–5): Data Analysis Exercise – Use Excel or SPSS to organize a small dataset, create frequency tables, and visualize it through bar charts and histograms. 3. Assignment 3 (Week 8–9): Probability and Sampling Report – Apply probability concepts and demonstrate sampling distribution using Excel simulation. 4. Assignment 4 (Week 11–12): Hypothesis Testing & Confidence Interval Task – Conduct hypothesis testing on a sample dataset, calculate confidence intervals, and interpret results. 5. Assignment 5 (Week 13–14): Regression and Correlation Project – Perform a regression and correlation analysis using real or provided data; include interpretation and visual output. 6. (Optional) Assignment 6 (Week 15–16): Final Statistical Report – Group project analyzing a real dataset using any statistical software (Excel, SPSS, R, or Minitab) with findings and recommendations.			
Assessment			
Sr. No.	Elements	Weightage	Details
1.	Midterm Assessment	35%	Written Assessment at the mid:point of the semester.
2.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands:on:activities, short tests, projects, practical, reflections, readings, quizzes etc.
3.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

Programme	BSQPM	Course Code	GE-107	Credit Hours	2
Course Title	Environmental Sciences				
Course Introduction					
Environmental Sciences is the study of the interactions between humans and the natural environment, focusing on understanding environmental problems and finding sustainable solutions. This course provides an overview of key environmental processes, ecosystems, natural resources, pollution, climate change, and sustainable development. Students will learn about environmental systems, human impacts on the planet, and modern approaches to environmental protection and management. Through lectures, discussions, and practical assignments, students will develop scientific and analytical skills to address global environmental challenges.					
Learning Outcomes					
On the completion of the course, the students will: - Understand fundamental concepts of environmental science and ecology. - Analyze the impact of human activities on the environment. - Explore the principles of sustainability and resource management. - Develop strategies for addressing environmental challenges through science-based solutions.					
Course Content				Assignments/Readings	
Week 1	Unit I: Introduction to Environmental Science - Definition and scope of Environmental Science - The interdisciplinary nature of the field - Importance of studying environmental issues			Reading: Cunningham & Cunningham, <i>Environmental Science: A Global Concern</i> , Ch. 1 Reflection: “Why is studying the environment important?”	
Week 2	Unit II: Ecosystems and Biodiversity (I) - Understanding ecosystems and their components - Food chains, food webs, and energy flow			Reading: Miller, <i>Living in the Environment</i> , Ch. 3 Assignment 1: Diagram of a local	
Week 3	Unit II: Ecosystems and Biodiversity (II) - The role of biodiversity in ecosystem health - Threats to biodiversity and conservation strategies			Reading: Wright & Boorse, Ch. 5 Activity: Discussion – “Why protect endangered species?”	
Week 4	Unit III: Environmental Chemistry (I) - Basic principles of environmental chemistry - The impact of pollutants on air, water, and soil			Reading: Turk & Turk, <i>Environmental Science</i> , Ch. 6 Assignment 2: Chart showing pollutants and their effects	
Week 5	Unit III: Environmental Chemistry (II) Chemical cycles – carbon, nitrogen, phosphorus Reading: Miller, Ch. 9			Activity: Diagram of the carbon and nitrogen cycles	
Week 6	Unit IV: Atmospheric Science and Climate Change (I) - Structure and composition of the atmosphere - Greenhouse gases and their effects on climate			Causes of global warming”	
Week 7	Unit IV: Atmospheric Science and Climate Change (II) Global warming and climate change mitigation strategies			Activity: Class debate on climate action	

Week 8	Midterm Examination	Midterm Exam (Weeks 1–7)
Week 9	Unit V: Water Resources and Pollution (I) - Importance of freshwater resources - Sources and effects of water pollution	<i>Assignment 4: Report on local water issues</i>
Week 10	Unit V: Water Resources and Pollution (II) Water management practices and conservation strategies	<i>Activity: Design a school water conservation plan</i>
Week 11	Unit VI: Soil Science and Land Use - Importance of soil health and structure - Land use changes and their impacts - Sustainable agriculture and soil conservation	<i>Assignment 5: Poster – “Healthy soil, healthy life”</i>
Week 12	Unit VII: Energy Resources and Environmental Impact (I) Overview of renewable and non-renewable energy sources	<i>Reading: Wright & Boorse, Ch. 18</i> <i>Activity: Presentation on renewable energy</i>
Week 13	Unit VII: Energy Resources and Environmental Impact (II) - Environmental impact of energy production - Sustainable energy practices and technologies	
Week 14	Unit VIII: Waste Management and Pollution Control - Types of waste: solid, liquid, hazardous - Waste management and recycling - Pollution control technologies and regulations	<i>Activity: Group project – “Zero waste campus plan”</i>
Week 15	Unit IX: Environmental Policy and Legislation - Key environmental laws and regulations - Role of government and organizations - Policy decisions and sustainability	<i>Reading: Pakistan Environmental Protection Agency (EPA) policies</i> <i>Reflection: “How laws can save the environment”</i>
Week 16	Unit X: Sustainable Development and Future Challenges - Concepts of sustainable development and ecological footprints - Role of technology and innovation - Future challenges in environmental science	<i>Reading: UNEP, Global Environment Outlook Report (excerpt)</i>
		Final Exam (Weeks 8–16)
Textbooks and Reading Material		
1. Textbooks. - Cunningham, W. P., & Cunningham, M. A. <i>Environmental Science: A Global Concern.</i> - Miller, G. T. <i>Living in the Environment.</i> - Wright, R., & Boorse, D. <i>Environmental Science: Toward a Sustainable Future.</i> 2. Suggested Readings - Turk, J., & Turk, A. Environmental Science. - IPCC Reports and UNEP resources. - Pakistan Environmental Protection Agency publications.		
Teaching Learning Strategies		
- Lectures using multimedia and whiteboard - Interactive discussions and exercises - Case studies and simulations - Group Projects and Presentations		

Assignments: Types and Number with Calendar			
1. Assignment 1 (Week 2): Ecosystem Diagram 2. Assignment 2 (Week 4): Pollutants and Their Effects Chart 3. Assignment 3 (Week 6): Essay on Causes of Global Warming 4. Assignment 4 (Week 9): Report on Local Water Pollution Issues 5. Assignment 5 (Week 11): Poster on Soil Health and Conservation 6. Assignment 6 (Week 13): Essay on Pakistan's Renewable Energy Future			
Assessment			
Sr. No.	Elements	Weightage	Details
1.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
2.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
3.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

Programme	BSQPM	Course Code	GE-108	Credit Hours	2
Course Title	Ideology of Pakistan				
Course Introduction					
The Ideology of Pakistan refers to the set of beliefs and principles that underpin the foundation of the Pakistani state. This course explores the historical, political, and cultural context that led to the creation of Pakistan in 1947, focusing on the ideological foundations articulated by key figures and movements. Students will examine the Two-Nation Theory, the role of Islamic values in nation-building, and the constitutional and political developments that shaped Pakistan’s identity. The course also highlights Pakistan’s challenges, foreign policy, and geo-strategic importance in the modern world.					
Learning Outcomes					
On the completion of the course, the students will:					
1. Understand the historical context and significance of the Ideology of Pakistan.					
2. Analyze the contributions of key figures such as Allama Iqbal and Quaid-e-Azam Muhammad Ali Jinnah.					
3. Evaluate the impact of ideology on Pakistan’s political, social, and cultural development.					
4. Discuss contemporary issues and debates related to the Ideology of Pakistan.					
Course Content				Assignments/Readings	
Week 1	Unit I: Introduction to the Ideology of Pakistan • Definition and meaning of ideology • Concept of nationalism and Muslim nationalism • The Two-Nation Theory and its significance			Reading: Zafar, <i>Pakistan Studies</i> , Ch. 1 Reflection: “Why was the Two-Nation Theory important?”	
Week 2	Unit II: Historical Background of Pakistan (I) • Early Muslim nationalism in South Asia • Minto-Morley Reforms (1909) and Lucknow Pact (1916)			Reading: Rabbani, <i>Pakistan Studies</i> , Ch. 2 Assignment 1: Short essay on the importance of the Lucknow Pact	
Week 3	Unit III: Historical Background of Pakistan (II) • Movements and demands for rights • Lahore Resolution (1940) and major events till 1947			Reading: Zafar, Ch. 3 Exercise: Timeline of Pakistan Movement (1906–1947)	
Week 4	Unit IV: Geography and Demographics of Pakistan • Regional topography and provinces • Demographic diversity and cultural identity			Reading: Rabbani, Ch. 4 Activity: Map labeling of Pakistan’s regions and resources	
Week 5	Unit V: Natural Resources and Economic Sectors • Major natural resources (minerals, agriculture, energy) • Key economic sectors of Pakistan			Reading: Zafar, Ch. 5 Assignment 2: Chart of Pakistan’s key natural resources	
Week 6	Unit VI: Cultural Heritage and Early Challenges • Linguistic, cultural, and ethnic diversity • Initial administrative and refugee challenges post-1947			Reading: Rabbani, Ch. 6 Exercise: Short paragraph – “How did Pakistan overcome early challenges?”	
Week 7				Reading: Zafar, Ch. 7 Discussion: “Why is Islam a unifying force for Pakistan?”	

	Unit VII: Ethical Foundations and Islamic Values • Role of Islam in national identity • Ethical principles guiding state policy	
Week 8	• Midterm Examination	Midterm Exam (Weeks 1–7)
Week 9	Unit VIII: Constitutional Developments (I) • Constitution-making challenges in Pakistan • The Constitutions of 1956 and 1962	<i>Reading: Rabbani, Ch. 8</i> <i>Assignment 3: Comparison table of 1956 and 1962 Constitutions</i>
Week 10	Unit IX: Constitution of 1973 • Salient features and importance • Role of 1973 Constitution in stabilizing democracy	<i>Reading: Zafar, Ch. 9</i> <i>Activity: Group discussion – “Why the 1973 Constitution endures”</i>
Week 11	Unit X: Pakistan’s Foreign Policy • Principles of Pakistan’s foreign policy • Relations with neighboring and Muslim countries	<i>Reading: Rabbani, Ch. 10</i> <i>Assignment 4: Essay – “Pakistan’s relations with Muslim countries”</i>
Week 12	Unit XI: Political System and Party Dynamics • Evolution of political parties • Democratic and military phases in Pakistan	<i>Reading: Zafar, Ch. 11</i> <i>Exercise: Create a political timeline of Pakistan (1947–Present)</i>
Week 13	Unit XII: Civil-Military Relations • Role of military in politics • Civil-military balance and governance issues	<i>Reading: Rabbani, Ch. 12</i> <i>Discussion: “How civil-military balance affects democracy”</i>
Week 14	Unit XIII: Pakistan’s Geo-Strategic Importance • Location and significance in South Asia • Pakistan’s role in regional peace and global politics	<i>Reading: Zafar, Ch. 13</i> <i>Assignment 5: Map-based report on Pakistan’s strategic location</i>
Week 15	Unit XIV: Sustainable Development and Future Challenges • Concept of sustainable development • Pakistan’s economic, political, and environmental challenges	<i>Reading: Rabbani, Ch. 14</i> <i>Reflection: “What is the future of Pakistan’s ideology?”</i>
Week 16	Revision and Final Examination	<i>Covers Weeks 8–15</i>
		Final Exam (Weeks 8–16)
Textbooks and Reading Material		
1. Textbooks. iv. Zafar, M. D. <i>Pakistan Studies</i>. v. Rabbani, Ikram. <i>Pakistan Studies</i>. 2. Suggested Readings iv. Jamil, M. <i>The Ideology of Pakistan</i>. v. Choudhary, G. W. <i>The Emergence of Pakistan</i>. vi. Speeches and writings of Quaid-e-Azam and Allama Iqbal. vii. Afzal, M. Rafique. – <i>Political History of Pakistan (1947–1988)</i>. Comprehensive overview of Pakistan’s political evolution and constitutional changes. viii. Ikram, S. M. – <i>Modern Muslim India and the Birth of Pakistan</i>. Historical background and intellectual developments that shaped Muslim identity in India.		

ix.	Sharif, M. – <i>A History of Muslim Philosophy (Vol. II)</i> . Discusses the intellectual roots of Muslim thought that influenced leaders like Iqbal.		
Teaching Learning Strategies			
1. Lectures using multimedia and whiteboard 2. Interactive discussions and exercises 3. Case studies and simulations 4. Group Projects and Presentations			
Assignments: Types and Number with Calendar			
1. Assignment 1 (Week 2): Essay on the Lucknow Pact 2. Assignment 2 (Week 5): Chart of Pakistan’s Natural Resources 3. Assignment 3 (Week 9): Comparison of 1956 and 1962 Constitutions 4. Assignment 4 (Week 11): Essay on Pakistan’s Foreign Policy 5. Assignment 5 (Week 14): Report on Pakistan’s Geo-Strategic Importance			
Assessment			
Sr. No.	Elements	Weightage	Details
1.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
2.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
3.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

Programme	BSQPM	Course Code	QPM-104	Credit Hours	3
Course Title	Quality & Reliability Management				
Course Introduction					
This course provides a comprehensive understanding of the principles, tools, and practices of Quality and Reliability Management. It emphasizes the systematic approaches required to ensure that products and services consistently meet or exceed customer expectations and perform reliably over their intended lifecycle. Students will explore quality management systems, reliability engineering concepts, and continuous improvement methodologies, enabling them to analyze, evaluate, and enhance organizational performance. The course integrates practical frameworks such as Total Quality Management (TQM), Lean Six Sigma, and Reliability Analysis to develop competence in ensuring sustainable operational excellence and customer satisfaction.					
Learning Outcomes					
On the completion of the course, the students will be able to:					
1. Apply the principles, methods, and tools of Quality and Reliability Management to assess, improve, and control organizational and process performance. 2. Integrate quality and reliability practices to enhance customer satisfaction, operational efficiency, and strategic competitiveness. 3. Analyze and interpret reliability data using engineering and statistical methods for failure prediction and risk mitigation. 4. Develop a culture of continuous improvement and fact-based decision-making to sustain organizational excellence.					
Course Content				Assignments/Readings	
Week 1	Unit-I: Fundamentals of Quality Management 1.1 Definition and evolution of Quality 1.1.1 Understanding QC, QA, QM, and TQM Unit-II: 2.1 Philosophies and contributions of Quality Gurus 2.1.1 Deming, Juran, Crosby, Ishikawa, Feigenbaum, and Taguchi			Reading: Dale (Ch. 1–2); Besterfield (Ch. 1) Assignment 1: Short essay on “Evolution of Quality Management and its impact on modern organizations.”	
Week 2	Unit-III: Quality Management Principles (ISO 9000 framework) 3.1 Eight Quality Management Principles 3.1.1 Customer focus and satisfaction measurement			Reading: Dale (Ch. 3); ISO 9000 Principles Summary Handout	
Week 3	3.2 Leadership, Engagement of People, and Process Approach 3.2.1 Relationship between process approach and PDCA cycle			Reading: Besterfield (Ch. 2–3) Class discussion: Examples of ISO 9001 applications	
Week 4	Unit-IV: Continuous Improvement Methodologies 4.1 PDCA Cycle, SIPOC Analysis, and Kaizen 4.2 5S + 2S Housekeeping System			Reading: Dale (Ch. 5); Besterfield (Ch. 7) Assignment 2: Develop a PDCA Cycle for a service or manufacturing process	
Week 5	Unit-V: Lean and Six Sigma Overview 5.1 Principles of Lean Thinking 5.2 DMAIC Framework of Six Sigma 5.3 Integration of Lean and Six Sigma			Reading: Besterfield (Ch. 8); Journal Article on “Lean-Six Sigma Integration in Modern Manufacturing”	

Week 6	Unit-VI: Analytical and Facts-Based Decision Making 6.1 Seven Basic Quality Tools (7 QC Tools) 6.2 Data-based problem solving using Pareto and Cause-and-Effect analysis	Reading: Dale (Ch. 6); Field & Swift (Ch. 4)
Week 7	6.3 Quality Culture and Employee Involvement 6.3.1 Quality Circles and Empowerment	Reading: Besterfield (Ch. 9); Case Study on Toyota's Quality Circle Program
Week 8	Midterm Review and Exam	Midterm Exam covering Units I–VI
Week 9	Unit-VII: Strategic Quality Considerations 7.1 Cost of Quality (COQ) and its strategic implications 7.2 Business Process Reengineering (BPR)	Reading: Dale (Ch. 10); Besterfield (Ch. 11) Assignment 3: Calculate COQ for a hypothetical manufacturing scenario
Week 10	7.3 Supplier Quality Management and Benchmarking 7.3.1 Strategic supplier collaboration for quality improvement	Reading: Field & Swift (Ch. 6); Journal Article on “Supplier Quality in Global Supply Chains”
Week 11	7.4 Waste Reduction and Value Stream Thinking 7.4.1 Introduction to Value Stream Mapping	Reading: Dale (Ch. 8); Lean Enterprise Institute Case Material
Week 12	Unit-VIII: Reliability Engineering and Analysis (Introduction) 8.1 Importance of reliability in engineering systems 8.2 Reliability function, failure rate, and hazard rate concepts	Reading: Ebeling (Ch. 1–2)
Week 13	8.3 Bathtub curve and product life cycle reliability 8.4 MTTF and MTBF	Reading: Dhillon (Ch. 2); Birolini (Ch. 3) Assignment 4: Compute MTTF and MTBF using given failure data
Week 14	8.5 Reliability models for Series and Parallel systems 8.6 Fault Tree Analysis (FTA) and FMEA	Reading: Ebeling (Ch. 4–5); Dhillon (Ch. 3)
Week 15	8.7 Reliability testing, prediction, and maintenance planning 8.8 Applications of Reliability Engineering in Product Design	Reading: Birolini (Ch. 8); Case Study: Reliability Testing in Automotive Components
Week 16	Course Review and Final Exam Preparation Discussion on integration of Quality and Reliability principles for sustainable competitiveness	Final Exam covering Units VII–VIII
Textbooks and Reading Material		
1. Textbooks. i. Dale, B. G. <i>Managing Quality</i> (Latest Edition). Blackwell Publishers. ii. Besterfield, D. H. <i>Total Quality Management</i> (Latest Edition). Pearson Publishers. iii. Ebeling, C. E. <i>An Introduction to Reliability and Maintainability Engineering</i> (Latest Edition). McGraw-Hill. 2. Suggested Readings i. Field, S. W., & Swift, K. G. <i>Effecting a Quality Change: An Engineering Approach</i> (Latest Edition). Arnold Publishers. ii. Dhillon, B. S. <i>Reliability, Quality, and Safety for Engineers</i> (Latest Edition). CRC Press.		

iii. Birolini, A. <i>Reliability Engineering: Theory and Practice</i> (Latest Edition). Springer.			
Teaching Learning Strategies			
5. Lectures using multimedia and whiteboard 6. Interactive discussions and exercises 7. Case studies and simulations 8. Group Projects and Presentations			
Assignments: Types and Number with Calendar			
5. Assignment 1 (Week 1–2): Essay on the Evolution and Importance of Quality Management 6. Assignment 2 (Week 4): PDCA Cycle or Kaizen implementation plan for a process 7. Assignment 3 (Week 9): Cost of Quality (COQ) analysis 8. Assignment 4 (Week 13): Reliability analysis (MTTF/MTBF and system reliability calculation).			
Assessment			
Sr. No.	Elements	Weightage	Details
4.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
5.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
6.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

Program	BSQPM	Course Code	QPM-105	Credit Hours	2
Course Title	Organizational Behavior				
Course Introduction					
Organizational Behaviour (OB) explores how individuals and groups interact within organizations and how these interactions shape workplace effectiveness. This course provides students with insights into motivation, leadership, communication, team dynamics, organizational culture, and change management. Through case studies and experiential learning, students will develop interpersonal and analytical skills to understand, predict, and influence human behaviour at work.					
Learning Outcomes					
On the completion of the course, the students will be able to:					
1. Understand key management and organizational behavior concepts. 2. Apply management skills for improving productivity and ethical performance. 3. Communicate ideas clearly and logically in written and oral forms. 4. Analyze behavior at individual, group, and organizational levels. 5. Evaluate real-world organizational challenges using OB theories and models.					
Course Content				Assignments/Readings	
Week 1	Unit I: Introduction to Organizational Behaviour Definition, scope, and importance of OB; historical development; multidisciplinary nature.			Reading: Robbins & Judge, <i>Organizational Behaviour</i> , Ch. 1 Reflection: “Why study OB?”	
Week 2	Unit II: Individual Behaviour Personality, perception, and attitudes; impact on work behaviour.			Activity: Self-assessment of personality and perception.	
Week 3	Unit III: Motivation Theories (I) Mazlow’s Hierarchy, Herzberg’s Two-Factor Theory, McGregor’s Theory X and Y.				
Week 4	Unit IV: Motivation Theories (II) Expectancy Theory, Equity Theory, Goal-Setting Theory.			Reading: Luthans, <i>Organizational Behaviour</i> , Ch. 5	
Week 5	Unit V: Leadership (I) Leadership traits and behavioural theories.			Assignment 2: Leadership self-evaluation.	
Week 6	Unit VI: Leadership (II) Contemporary leadership approaches—Transformational, Servant, and Ethical Leadership.			Group Discussion: “What makes an effective leader?”	
Week 7	Unit VII: Communication in Organizations Types, channels, and barriers to communication; feedback and active listening.			Role-play: Effective communication scenarios.	
Week 8	Midterm Examination			Covers Units I–VII	
Week 9	Unit VIII: Group Dynamics Group formation, roles, norms, team decision-making, and performance.				
Week 10	Unit IX: Conflict and Negotiation Types and causes of conflict, conflict resolution techniques, negotiation proces				

Week 11	Unit X: Organizational Power and Politics Sources of power, political behaviour, and ethics in organizations.	Assignment 4: Essay on power dynamics at the workplace.
Week 12	Unit XI: Organizational Culture Elements and functions of culture; developing and maintaining culture.	Case Study: Google's organizational culture.
Week 13	Unit XII: Stress and Well-being at Work Sources and consequences of stress; stress management strategies.	
Week 14	Unit XIII: Organizational Change and Development Forces for change, resistance, and change management models	
Week 15	Unit XIV: Decision-Making and Creativity Rational vs. bounded rationality; improving decision-making; innovation.	
Week 16	Review and Future Trends in OB Globalization, technology, and ethical behaviour in modern organizations.	

1. Textbooks and Reading Material

Core Textbooks:

1. Robbins, S. P., & Judge, T. A. (Latest Ed.). *Organizational Behaviour*. Pearson Education.
2. Luthans, F. (Latest Ed.). *Organizational Behaviour: An Evidence-Based Approach*. McGraw-Hill Education.

Recommended Readings:

1. Greenberg, J., & Baron, R. A. *Behaviour in Organizations*.
2. McShane, S. L., & Von Glinow, M. A. *Organizational Behaviour: Emerging Knowledge, Global Reality*.
3. Daft, R. L. *Management*. (Chapters on motivation, leadership, and communication).
4. Harvard Business Review Articles on leadership, teamwork, and motivation.

Teaching Learning Strategies

1. Lectures using multimedia and a whiteboard
2. Interactive discussions and exercises
3. Case studies and simulations
4. Group Projects and Presentations

2. Assignments: Types and Number with Calendar

1. **Assignment 1 (Week 3):** Essay on Motivation at Work.
2. **Assignment 2 (Week 5):** Leadership Self-Evaluation.
3. **Assignment 3 (Week 9):** Group Case Analysis on Teamwork.
4. **Assignment 4 (Week 11):** Essay on Power Dynamics at Workplace.
5. **Assignment 5 (Week 14):** Report on Managing Organizational Change.

Assessment

Sr. No.	Elements	Weightage	Details
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1.	Midterm Assessment	35%	Written Assessment at the midpoint of the semester.
2.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands on activities, short tests, projects, practical, reflections, readings, quizzes etc.
3.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

Semester III

Program	BSQPM	Course Code	GE-209	Credit Hours	3
Course Title	Business Mathematics				
Course Introduction					
This course provides students with essential mathematical tools and techniques required to analyze, model, and solve business-related problems. It focuses on developing proficiency in algebraic operations, matrices, calculus, and financial mathematics to support managerial decision-making. Through practical examples, students learn to apply mathematical reasoning to business scenarios such as cost optimization, investment evaluation, productivity analysis, and resource allocation. The course builds a strong quantitative foundation to enhance problem-solving and analytical capabilities in quality and performance management contexts.					
Learning Outcomes					
On the completion of the course, the students will be able to:					
1. Apply fundamental algebraic, matrix, and calculus concepts to solve business and management problems. 2. Use mathematical models to analyze costs, revenues, profits, and productivity in business decision-making. 3. Compute and interpret financial measures such as interest, annuities, depreciation, and repayments. 4. Utilize mathematical reasoning to enhance decision-making in quality and performance management applications.					
Course Content				Assignments/Readings	
Week 1	Unit I: Review of Basic Mathematics 1.1 Numbers, fractions, ratios, proportions, percentages 1.2 Indices, roots, and logarithms and their business applications			Reading: Clendenen et al. (Ch. 1–2) Assignment 1: Practice problems on ratios, proportions, and percentage-based pricing decisions	
Week 2	Unit II: Algebra in Business 2.1 Linear and quadratic equations 2.2 Inequalities and simultaneous equations 2.3 Applications in pricing, costing, and breakeven analysis			Reading: Jacques (Ch. 3–4) Exercise: Breakeven and profit analysis using algebraic models	
Week 3	2.4 Business functions and graphs 2.5 Application of functions in forecasting and trend analysis			Reading: Clendenen et al. (Ch. 3) Class Discussion: Function-based business forecasting	
Week 4	Unit III: Matrices and Determinants 3.1 Basic matrix operations (addition, subtraction, multiplication) 3.2 Solving systems of equations using matrices and determinants			Reading: Jacques (Ch. 6–7) Assignment 2: Use matrices to solve production mix or cost allocation problems	
Week 5	3.3 Business applications of matrices in input–output analysis and resource allocation			Reading: Clendenen et al. (Ch. 5)	
Week 6	Unit IV: Commercial Arithmetic 4.1 Profit & loss, trade and cash discounts, markup, and commission			Reading: Clendenen et al. (Ch. 8) Class exercise: Retail and trade margin calculations	

Week 7	4.2 Simple and compound interest 4.3 Depreciation and installment payments	Reading: Jacques (Ch. 9) Assignment 3: Calculate compound interest and depreciation for business assets
Week 8	Midterm Review and Exam	Midterm Exam covering Units I–IV
Week 9	Unit V: Differential Calculus (Introductory) 5.1 Concept of limits and continuity 5.2 Rules of differentiation	Reading: Jacques (Ch. 11) Class activity: Solving differentiation exercises
Week 10	5.3 Applications in marginal cost, marginal revenue, and profit maximization	Reading: Clendenen et al. (Ch. 10) Assignment 4: Determine marginal cost and profit using given business data
Week 11	Unit VI: Integral Calculus (Introductory) 6.1 Basic integration techniques 6.2 Applications in total cost and revenue estimation	Reading: Jacques (Ch. 12)
Week 12	6.3 Business decision-making using integration in inventory and cost analysis	Reading: Clendenen et al. (Ch. 11)
Week 13	Unit VII: Mathematics of Finance 7.1 Present and future value concepts 7.2 Annuities, amortization schedules, and loan repayments	Reading: Clendenen et al. (Ch. 13) Assignment 5: Develop an amortization schedule for a business loan
Week 14	7.3 Applications of financial mathematics in capital budgeting	Reading: Jacques (Ch. 13)
Week 15	Unit VIII: Applications in Quality & Performance Management 8.1 Mathematical models in productivity and efficiency analysis 8.2 Resource utilization and cost optimization	Reading: Case Study Handout on Productivity Analysis
Week 16	Course Review and Final Exam Preparation Discussion: Integration of mathematical concepts in business and quality decision-making	Final Exam covering Units V–VIII

Textbooks and Reading Material

1. Textbooks.

- i. Clendenen, G., Salzman, S., & Miller, C. *Business Mathematics* (Latest Edition). Pearson.
- ii. Jacques, I. *Mathematics for Economics and Business* (Latest Edition). Pearson.

2. Suggested Readings

- i. Barnett, R. A., Ziegler, M. R., & Byleen, K. E. *Finite Mathematics for Business, Economics, Life Sciences, and Social Sciences* (Latest Edition). Pearson.
- ii. Geoff Renshaw. *Maths for Economics* (Latest Edition). Oxford University Press.

Teaching Learning Strategies

7. Lectures using multimedia and a whiteboard
8. Interactive discussions and exercises
9. Case studies and simulations
10. Group Projects and Presentations

Assignments: Types and Number with Calendar			
1. Assignment 1 (Week 1–2): Business applications of ratios and percentages 2. Assignment 2 (Week 4): Matrix-based problem-solving for business systems 3. Assignment 3 (Week 7): Financial calculations (interest and depreciation) 4. Assignment 4 (Week 10): Marginal analysis using calculus 5. Assignment 5 (Week 13): Loan amortization and capital budgeting exercise			
Assessment			
Sr. No.	Elements	Weightage	Details
1.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
2.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
3.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

Program	BSQPM	Course Code	GE-210	Credit Hours	3
Course Title	Expository Writing				
Course Introduction					
This course develops students’ proficiency in expository writing: the art of writing to explain, inform, and clarify ideas for the reader. Emphasizing clear, coherent, and well-organized prose, the course guides students through the writing process from brainstorming and thesis development to drafting, revising, and editing. Students practice various modes of expository writing (definition, comparison, cause-effect, process analysis) and learn to support their ideas with appropriate evidence and examples. Through reading exemplary essays and regular writing assignments, they refine grammar and style, learn strategies for effective academic argumentation, and build a foundation for writing in both academic and professional contexts.					
Learning Outcomes					
On completion of the course, students will be able to:					
1. Employ the writing process effectively, generating ideas, formulating clear thesis statements, creating outlines, and producing well-structured drafts followed by substantial revisions and careful proofreading. 2. Write clear and coherent expository essays by developing unified and well-organized paragraphs and essays in various expository modes using appropriate examples and evidence. 3. Adapt writing for audience and purpose, tailoring tone, style, and content to suit the intended audience while maintaining a consistent and formal voice. 4. Apply principles of grammar, style, and citation by demonstrating proficiency in standard English usage and properly incorporating and citing source material.					
Course Content				Assignments/Readings	
Week 1	Unit I: Introduction to Expository Writing : Understanding exposition and its purposes. Overview of the writing process. Unit II: Audience and Rhetorical Situation : Analyzing audience, purpose, and context.			Reading: Kirszn er & Mandell (Ch. 1); Hacker (Purpose and Audience).Assignment 1: In-class diagnostic paragraph on a familiar topic.	
Week 2	Unit III: Reading Critically and Finding Ideas : Strategies for critical reading and analysis of expository essays. Unit IV: Generating Ideas and Narrowing the Topic : Brainstorming, clustering, focusing, and formulating questions.			Reading: Kirszn er & Mandell (Ch. 2); Sample essays from <i>The Norton Sampler</i> .	
Week 3	Unit V: Thesis Statements and Essay Organization : Writing strong thesis statements and organizing essays effectively. Unit VI: Introductions and Conclusions : Techniques for engaging openings and effective closings.			Reading: Kirszn er & Mandell (Ch. 3); Hacker (Essay Structure).Assignment 2: Thesis and outline for first major essay (assigned Week 3, due Week 5).	
Week 4	Unit VII: Paragraph Development : Writing unified paragraphs and using transitions. Unit VIII: Supporting with Evidence and Examples : Integrating examples, facts, and details for clarity.			Reading: Kirszn er & Mandell (Ch. 4); Strunk & White (“Principles of Composition”).	
Week 5	Unit IX: Drafting and Revising : Writing first drafts and strategies for revision. Unit X: Editing and Proofreading : Correcting grammar and improving sentence clarity.			Reading: Hacker (Grammar sections); Kirszn er & Mandell (Ch. 5).Assignment 2 Due: Submit first draft of Essay 1.	

Week 6	Unit XI: Process Analysis : Writing clear, chronological explanations of how something works. Unit XII: Definition : Writing extended definitions of abstract concepts.	Reading: Kirsznner & Mandell (Ch. 10, 7); Example essays provided. Assignment 3: 2-page essay in process or definition mode (due Week 8).
Week 7	Unit XIII: Comparison and Contrast : Organizing essays by similarities and differences. Unit XIV: Cause and Effect : Structuring causal analysis essays effectively.	Reading: Kirsznner & Mandell (Ch. 12, 13); Sample compare/contrast and cause/effect essays.
Week 8	Midterm Exam : Covers Units I:XIV (in-class essay and objective questions). Assignment 3 Due: Submit essay from Week 6.	—
Week 9	Unit XV: Classification and Division : Organizing ideas into logical categories. Unit XVI: Example and Illustration : Using examples to clarify complex ideas.	Reading: Kirsznner & Mandell (Ch. 8, 6); Example: “Homeless” by Anna Quindlen or similar.
Week 10	Unit XVII: Incorporating Sources and APA/MLA Basics : Summarizing, paraphrasing, quoting, and citing correctly. Unit XVIII: Writing from Sources : Integrating short source passages into essays.	Reading: Hacker (Using Sources); Graff & Birkenstein (Ch. 2). Assignment 4: Source-based writing task (assigned Week 10, due Week 12).
Week 11	Unit XIX: Writing the Research-Based Expository Essay : Planning and organizing research-informed writing. Unit XX: Drafting and Integrating Research : Blending evidence with exposition while maintaining author’s voice.	Reading: Kirsznner & Mandell (Ch. 15); Suggested: Sample research essay.
Week 12	Unit XXI: Peer Review Workshop : Exchanging and critiquing drafts using guided checklists. Unit XXII: Revision Strategies for Research Essay : Revising based on feedback for clarity and organization.	Reading: Graff & Birkenstein (Ch. 8). Assignment 4 Due; Assignment 5: Research Essay (due Week 13).
Week 13	Unit XXIII: Introduction to Argumentative Writing : Distinguishing exposition from argumentation. Unit XXIV: Making a Logical Argument : Avoiding fallacies and using evidence responsibly.	Reading: Kirsznner & Mandell (Ch. 14). Assignment 5 Due: Submit final research essay.
Week 14	Unit XXV: Style and Clarity Workshop : Improving writing style and conciseness. Unit XXVI: Grammar Review and Final Editing : Review of grammar and punctuation for final submissions.	Reading: Strunk & White; Zinsser (<i>On Writing Well</i> , “Clutter”).
Week 15	Unit XXVII: Portfolio Presentations and Course Review : Sharing revised work and reflecting on progress. Unit XXVIII: Course Wrap-Up : Final Q&A and writing advice.	Reading: Review past essays and notes. Assignment 6 (Optional): Revised mini-portfolio.
Week 16	Final Term Exam	
3. Textbooks and Reading Material		
1. Textbooks i. Kirsznner, L., & Mandell, S. Patterns for College Writing: A Rhetorical Reader and Guide (Latest		

Edition). Bedford/St. Martin's.

ii. Hacker, D., & Sommers, N. A Writer's Reference (Latest Edition). Bedford/St. Martin's.

2. Suggested Readings

i. Strunk, W., Jr., & White, E. B. *The Elements of Style*. Allyn & Bacon.

ii. Graff, G., & Birkenstein, C. *They Say / I Say: The Moves That Matter in Academic Writing*. W. W. Norton.

iii. Zinsser, W. *On Writing Well*. Harper Perennial.

Teaching Learning Strategies

1. Lectures using multimedia and a whiteboard
2. Interactive discussions and exercises
3. Case studies and simulations
4. Group Projects and Presentations

4. Assignments: Types and Number with Calendar

1. Assignment 1 (Week 1): Diagnostic paragraph – short in-class writing sample to assess initial skills.
2. Assignment 2 (Week 3–5): Expository Essay 1 – draft and revision emphasizing the writing process.
3. Assignment 3 (Week 6–8): Expository Essay 2 – essay using another mode such as comparison or cause-effect.
4. Assignment 4 (Week 10–12): Source Integration Task – one-page informative writing incorporating a cited source.
5. Assignment 5 (Week 9–13): Research-Informed Expository Essay – a 4–5 page essay integrating multiple sources.
6. Assignment 6 (Week 15): Revised Portfolio (optional/extra credit) – polished and reflective compilation of best work.

Assessment

Sr. No.	Elements	Weightage	Details
4.	Midterm Assessment	35%	Written Assessment at the mid:point of the semester.
5.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands:on:activities, short tests, projects, practical, reflections, readings, quizzes etc.
6.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

Program	BSQPM	Course Code	QPM-206	Credit Hours	3
Course Title	Operations Management				
Course Introduction					
Operations Management is a vital area of business focused on the efficient and effective production of goods and services. This course provides an in-depth understanding of the principles and practices involved in managing operations within various organizations. It covers the design, implementation, and control of processes that transform inputs into outputs, ensuring that organizations can meet customer demands while optimizing resources.					
Learning Outcomes					
On the completion of the course, the students will be able to:					
1. Explain the strategic role of operations management in achieving organizational effectiveness. 2. Understand and apply key concepts such as process design, capacity planning, facility layout, and inventory management. 3. Analyze demand patterns and align them with operational capabilities. 4. Evaluate operational performance using productivity, efficiency, and quality measures. 5. Utilize basic analytical tools for decision-making in operations contexts. 6. Recognize emerging trends in operations such as sustainability, digital transformation, and automation.					
Course Content				Assignments/Readings	
Week 1	Unit I: Introduction to Operations Management 1.1 Definition, scope, and importance of OM 1.2 Evolution of OM and its link with organizational strategy 1.3 Goods vs. services operations			Reading: Heizer et al. (Ch. 1–2)Class activity: Identify operations functions in different industries	
Week 2	Unit II: Operations Strategy and Competitiveness 2.1 Strategic fit and operations priorities 2.2 Productivity, efficiency, and performance measures			Reading: Stevenson (Ch. 2)Assignment 1: Calculate productivity and efficiency ratios for a business case	
Week 3	Unit III: Process Design and Analysis 3.1 Types of processes (job, batch, flow, continuous) 3.2 Process mapping and analysis 3.3 Process improvement and bottleneck analysis			Reading: Heizer et al. (Ch. 6)Exercise: Process flowchart development for a service or manufacturing operation	
Week 4	Unit IV: Facility Location and Layout 4.1 Factors influencing location decisions 4.2 Basic location models 4.3 Layout types – process, product, cellular, fixed-position			Reading: Stevenson (Ch. 8)Assignment 2: Evaluate potential facility locations using a scoring model	
Week 5	Continuation of Unit IV 4.4 Designing effective layouts for productivity and safety			Reading: Heizer et al. (Ch. 9)	
Week 6	Unit V: Capacity Planning and Resource Utilization 5.1 Concept of capacity and capacity strategies 5.2 Measuring and managing capacity utilization			Reading: Stevenson (Ch. 5)Case study: Capacity utilization analysis for a garment production line	
Week 7	Unit VI: Forecasting and Demand Management (Introductory) 6.1 Qualitative and quantitative forecasting methods			Reading: Heizer et al. (Ch. 4)Assignment 3: Forecast	

	6.2 Measuring forecast accuracy	demand using moving average and exponential smoothing
Week 8	Midterm Review and Exam	Midterm Exam covering Units I–VI
Week 9	Unit VII: Inventory and Materials Management (Basics) 7.1 Types of inventory and inventory costs 7.2 Economic Order Quantity (EOQ) model 7.3 ABC classification	Reading: Stevenson (Ch. 12)Exercise: Inventory control calculation using EOQ
Week 10	Unit VIII: Scheduling and Resource Allocation (Introductory) 8.1 Scheduling objectives and methods 8.2 Gantt charts and basic sequencing concepts	Reading: Heizer et al. (Ch. 15)Assignment 4: Develop a simple Gantt schedule for a production task
Week 11	Unit IX: Quality and Performance Management Linkages 9.1 Role of quality in operations 9.2 TQM principles and continuous improvement 9.3 Measuring performance and productivity	Reading: Stevenson (Ch. 6)Class discussion: How operations impact quality outcomes
Week 12	Unit X: Sustainability and Green Operations (Awareness Level) 10.1 Sustainable production and waste minimization 10.2 Lean and environmentally responsible operations	Reading: Heizer et al. (Ch. 5)Case study: Green operations initiatives in the textile sector
Week 13	Unit XI: Technology in Operations 11.1 Digital transformation and automation 11.2 Role of AI, IoT, and data analytics in operations	Reading: Stevenson (Ch. 7)Assignment 5: Evaluate automation benefits in a selected operation
Week 14	Unit XII: Emerging Trends in Operations Management 12.1 Global operations and reshoring 12.2 Industry 4.0 and smart manufacturing	Reading: Heizer et al. (Ch. 16)
Week 15	Unit XIII: Operations Decision-Making and Case Applications 13.1 Integrating capacity, inventory, and scheduling decisions 13.2 Case study on operations improvement in a textile or service setup	Reading: Case HandoutGroup presentation: Operations improvement proposal
Week 16	Course Review and Final Exam Preparation Discussion: Integrating OM concepts in quality and performance management	Final Exam covering Units VII–XIII

Textbooks and Reading Material

1. Textbooks.

- i. Heizer, J., Render, B., & Munson, C. Operations Management: Sustainability and Supply Chain Management (Latest Edition). Pearson.
- ii. Stevenson, W. J. Operations Management (Latest Edition). McGraw-Hill

2. Suggested Readings

- i. Slack, N., Brandon-Jones, A., & Burgess, N. Operations Management (Latest Edition). Pearson.
- ii. Krajewski, L. J., Ritzman, L. P., & Malhotra, M. K. Operations Management: Processes and Supply Chains (Latest Edition). Pearson

Teaching Learning Strategies			
1. Lectures using multimedia and a whiteboard 2. Interactive discussions and exercises 3. Case studies and simulations 4. Group Projects and Presentations			
Assignments: Types and Number with Calendar			
1. Assignment 1 (Week 2): Productivity and efficiency analysis 2. Assignment 2 (Week 4): Facility location evaluation 3. Assignment 3 (Week 7): Demand forecasting exercise 4. Assignment 4 (Week 10): Scheduling and Gantt chart preparation 5. Assignment 5 (Week 13): Automation and digital operations assessment			
Assessment			
Sr. No.	Elements	Weightage	Details
1.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
2.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
3.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

Program	BSQPM	Course Code	QPM-207	Credit Hours	3
Course Title	Quality Management System & Auditing				
Course Introduction					
Quality Management Systems (QMS) are essential frameworks that organizations use to ensure consistent quality in their products and services. This course covers the principles and practices of QMS, focusing on the development, implementation, and maintenance of effective quality management practices. Additionally, the course emphasizes the importance of internal auditing as a tool for assessing and improving QMS effectiveness.					
Learning Outcomes					
On the completion of the course, the students will be able to:					
1. Understand the principles and requirements of Quality Management Systems (QMS). 2. Explain the structure and application of international quality standards, especially ISO 9001. 3. Develop, implement, and maintain QMS documentation including policies, procedures, and work instructions. 4. Apply auditing techniques (in line with ISO 19011) for assessing compliance, identifying gaps, and recommending improvements. 5. Relate QMS and auditing practices to organizational performance, customer satisfaction, and certification processes.					
Course Content				Assignments/Readings	
Week 1	Unit I: Introduction to Quality Management Systems 1.1 History and evolution of QMS 1.2 Purpose, principles, and benefits of QMS 1.3 Relationship between quality assurance, quality control, and quality management			Reading: Hoyle (Ch. 1–2) Class discussion: Evolution of quality systems from inspection to ISO 9001	
Week 2	Unit II: ISO 9000 Family of Standards 2.1 Overview of ISO 9000 series 2.2 ISO 9001 structure and core principles 2.3 Relationship between ISO 9000, ISO 9001, and ISO 9004			Reading: ISO 9000 Handbook (Ch. 3–4) Assignment 1: Identify and explain ISO 9001 clauses relevant to manufacturing and service sectors	
Week 3	Unit III: ISO 9001: Quality Management System Requirements 3.1 Context of the organization and leadership commitment 3.2 Quality policy, objectives, and planning 3.3 Support, operation, performance evaluation, and improvement			Reading: ISO 9001 (Clauses 4–10) Exercise: Draft a sample quality policy and objectives for a textile organization	
Week 4	Continuation of Unit III 3.4 Risk-based thinking and process approach in QMS			Reading: Hoyle (Ch. 5–6) Case study: Risk-based process mapping of a production process	
Week 5	Unit IV: QMS Documentation 4.1 Hierarchy of QMS documents: manuals, procedures, work instructions, records 4.2 Control of documents and records management			Reading: Hoyle (Ch. 7) Assignment 2: Develop a sample SOP and work instruction for a quality inspection process	
Week 6	Unit V: Process Approach in QMS 5.1 Understanding process interactions and system integration			Reading: ISO 9001 Handbook (Ch. 8) Class exercise: Create a	

	5.2 Inputs, outputs, and process performance measures	process flow diagram for a core operation
Week 7	Unit VI: Quality Policy and Objectives 6.1 Developing quality policies aligned with organizational goals 6.2 Deploying and communicating quality objectives across departments	Reading: Hoyle (Ch. 9) Assignment 3: Evaluate the alignment of an organization's policy with ISO 9001 principles
Week 8	Midterm Review and Exam	Midterm Exam covering Units I–VI
Week 9	Unit VII: Fundamentals of Auditing 7.1 Definition, purpose, and benefits of auditing 7.2 Types of audits – internal, external, certification, surveillance 7.3 Roles and responsibilities of auditors and auditees	Reading: ISO 19011 (Clauses 1–5) Class activity: Identify differences between internal and third-party audits
Week 10	Unit VIII: Audit Planning and Preparation 8.1 Audit program management 8.2 Audit planning, scope, and objectives 8.3 Developing audit checklists	Reading: ISO 19011 (Clauses 6–7) Assignment 4: Prepare a detailed audit plan and checklist for a selected process
Week 11	Unit IX: Conducting the Audit 9.1 Opening meetings and communication protocols 9.2 Gathering audit evidence through observation, interviews, and document review 9.3 Identifying and classifying nonconformities	Reading: ISO 19011 (Clauses 8–9) Class role-play: Simulated internal audit interview session
Week 12	Unit X: Reporting and Follow-Up Actions 10.1 Writing audit reports 10.2 Corrective and preventive actions (CAPA) 10.3 Closing meetings and management review	Reading: Hoyle (Ch. 11) Assignment 5: Draft a nonconformity report and corrective action plan
Week 13	Unit XI: Accreditation and Certification 11.1 Certification bodies and accreditation authorities 11.2 Certification processes and surveillance audits 11.3 Maintaining certification	Reading: ISO 9000 Handbook (Ch. 12) Case study: Certification process for ISO 9001 in a manufacturing company
Week 14	Unit XII: Continuous Improvement and QMS Performance 12.1 Management review and data-driven decision-making 12.2 Role of audits in continual improvement 12.3 Customer satisfaction and performance metrics	Reading: Hoyle (Ch. 13) Class discussion: Using audit findings for organizational improvement
Week 15	Unit XIII: Integrated Management Systems and Best Practices 13.1 Integration of QMS with EMS, OHSMS, and other systems 13.2 Case examples of integrated management systems in practice	Reading: Case Handout on Integrated Systems Group presentation: Proposal for integrating QMS and EMS in a manufacturing setup
Week 16	Course Review and Final Exam Preparation Discussion: Role of QMS and auditing in organizational excellence and sustainability	Final Exam covering Units VII–XIII
Textbooks and Reading Material		
1. Textbooks.		

i. ISO 9001: Quality Management Systems – Requirements (Latest Edition). ii. ISO 19011: Guidelines for Auditing Management Systems (Latest Edition). iii. Hoyle, D. ISO 9000 Quality Systems Handbook (Latest Edition). Routledge. 2. Suggested Readings i. Oakland, J. S. Total Quality Management and Operational Excellence (Latest Edition). Routledge. ii. Goetsch, D. L., & Davis, S. Quality Management for Organizational Excellence (Latest Edition). Pearson			
Teaching Learning Strategies			
1. Lectures using multimedia and a whiteboard 2. Interactive discussions and exercises 3. Case studies and simulations 4. Group Projects and Presentations			
Assignments: Types and Number with Calendar			
1. Assignment 1 (Week 2): Identification of ISO 9001 clauses relevant to industry operations 2. Assignment 2 (Week 5): Development of QMS documentation (SOP and work instruction) 3. Assignment 3 (Week 7): Evaluation of quality policy and objectives alignment 4. Assignment 4 (Week 10): Audit plan and checklist preparation 5. Assignment 5 (Week 12): Nonconformity reporting and corrective action planning			
Assessment			
Sr. No.	Elements	Weightage	Details
1.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
2.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
3.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

Programme	BSQPM	Course Code	QPM-208	Credit Hours	3
Course Title	Principles of Marketing				
Course Introduction					
Marketing is the process of creating, communicating, and delivering value to customers while managing customer relationships in ways that benefit the organization and its stakeholders. This course provides an overview of key marketing concepts, strategies, and tools used to understand consumer behavior, develop effective marketing campaigns, and build strong brand identities.					
Learning Outcomes					
On the completion of the course, the students will:					
5. Identify and critically analyze the nature of marketing activities in an organization, and assess the external and internal environment impacts on the organization					
6. Plan and resolve issues at strategic and operational levels					
7. Understand and reflect on the basic strategies to achieve marketing objectives					
8. Achieved a basic understanding and integration of the concepts of market segmentation, targeting and positioning and the application of an optimal marketing mix					
Course Content				Assignments/Readings	
Week 1	Introduction to Marketing: Defining marketing, marketing process, marketing principles, and types of markets (B2C, B2B, services).			Reading: Kotler & Armstrong, Ch. 1; Assignment: Short essay on “Role of Marketing.	
Week 2	Marketing Environment & Market Analysis: Micro and macro environment, SWOT analysis, consumer vs industrial markets			Case Study: Analyze a company’s marketing environment.	
Week 3	Consumer Behavior (B2C): Factors influencing buying behavior, decision-making process.			Assignment: Survey consumer preferences.	
Week 4	B2B and Services Marketing: Understanding organizational buying behavior, service markets.			Discussion: Differences between B2C and B2B marketing.	
Week 5	Marketing Research & Information Systems: Importance, methods, and applications.			Practical: Design a simple marketing survey.	
Week 6	Strategic Marketing: Segmentation, Targeting & Positioning (STP)			Exercise: Identify segments and position a local product.	
Week 7	Marketing Strategy Development: Approaches to competitive advantage, planning strategic initiatives.			Reading: Kotler & Armstrong, Ch. 6; Case study analysis.	
Week 8	Midterm Review & Exam Midterm exam covering weeks 1–7.			Midterm Review & Exam Midterm exam covering weeks 1–7.	
Week 9	Operational Marketing: Marketing Mix: Product, price, distribution, and communication mix.			Assignment: Develop a marketing mix for a hypothetical product.	
Week 10	Operational Marketing: Marketing Mix: Product, price, distribution, and communication mix.			Practical: Analyze branding strategies of a well-known brand.	

Week 11	Pricing, Channel Management & Retailing	Exercise: Propose pricing and channel strategy for a new product.	
Week 12	Marketing Communications: Tools, techniques, and managing marketing communications.	Case Study: Analyze a recent marketing campaign.	
Week 13	Marketing Organization & Control: Implementation, performance monitoring, marketing metrics.	Assignment: Develop metrics to evaluate marketing effectiveness.	
Week 14	Marketing in Emerging Markets: Impact on strategy, adaptation of marketing practices.	Discussion: Emerging market case study.	
Week 15	Contemporary Marketing Practices: Relational marketing, digital marketing trends.	Project: Prepare a marketing plan incorporating contemporary practices.	
Week 16	Final Review & Exam	Comprehensive final exam covering the entire course.	
Textbooks and Reading Material			
Textbooks. 1. Kotler, P., & Armstrong, G. (2020). <i>Principles of Marketing</i> (18th Edition). Pearson. 2. Lamb, C. W., Hair, J. F., & McDaniel, C. (2021). <i>Marketing</i> (15th Edition). Cengage Learning.			
Suggested Readings 3. Solomon, M. R. (2020). <i>Consumer Behavior: Buying, Having, and Being</i> (13th Edition). Pearson. 4. Jobber, D., & Ellis-Chadwick, F. (2019). <i>Principles and Practice of Marketing</i> (9th Edition). McGraw-Hill Education. 5. Ferrell, O. C., & Hartline, M. (2019). <i>Marketing Strategy</i> (7th Edition). Cengage Learning.			
Teaching Learning Strategies			
1. Lectures using multimedia and whiteboard 2. Interactive discussions and exercises 3. Case studies and simulations 4. Group Projects and Presentations			
Assignments: Types and Number with Calendar			
1. Assignment 1 (Week 2): SWOT analysis of a local company to assess its marketing environment. 2. Assignment 2 (Week 3): Survey and report on consumer buying behavior for a selected product. 3. Assignment 3 (Week 6): Identification of market segments and proposal of positioning strategy for a product (STP analysis). 4. Assignment 4 (Week 9): Development of a complete marketing mix (4Ps) for a new or existing product. 5. Assignment 5 (Week 12): Analysis of an existing marketing communication campaign and preparation of a report on its effectiveness. 6. Assignment 6 (Week 15): Design a digital marketing plan incorporating contemporary marketing practices.			
Assessment			
Sr. No.	Elements	Weightage	Details
1.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.

2.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
3.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

Program	BSQPM	Course Code	QPM-209	Credit Hours	3
Course Title	Database Systems and Languages				
Course Introduction					
This course provides an in-depth introduction to database systems, focusing primarily on relational database management systems (RDBMS) and extending to modern database technologies. Students learn data modeling with ER diagrams, normalization theory, and core SQL for defining and querying databases. The course also introduces data warehousing (OLAP, star schemas) and non-relational systems (document, column-family, key-value, graph, and vector databases) to equip students to choose appropriate data solutions for diverse application needs.					
Learning Outcomes					
On the completion of the course, the students will be able to:					
1. Design effective relational databases by constructing ER models and translating them into normalized schemas (1NF, 2NF, 3NF, BCNF) to ensure integrity and avoid anomalies. 2. Use SQL for database definition and manipulation by writing correct DDL and DML, including multi-table joins, subqueries, and aggregations. 3. Explain transaction management and data warehousing by describing ACID properties, basic concurrency concepts, and OLAP/star-schema fundamentals. 4. Evaluate NoSQL and advanced databases by identifying characteristics, trade-offs (including CAP), and use cases for document, column-family, key-value, graph, and vector databases.					
Course Content				Assignments/Readings	
Week 1	Unit I: Introduction to Databases : DBMS vs. file systems; database models overview (hierarchical, network, relational, brief OO/NoSQL). Unit II: Database Environment & Architecture : Roles (DBA, devs, users); three:level architecture; intro to SQL environment.			Reading: Elmasri & Navathe (Ch. 1); Silberschatz et al. (Ch. 1). Assignment 1: Project Part A : Choose a mini:world and describe scope (ERD due Week 2).	
Week 2	Unit III: ER Modeling : Entities, attributes, keys; relationships; cardinality and participation; strong vs. weak entities. Unit IV: Enhanced ER (EER) : Specialization/generalization, sub/supertypes.			Reading: Elmasri & Navathe (Ch. 3). Lab: ERD practice.Assignment 1 Due: Initial ER diagram.	
Week 3	Unit V: Relational Model Fundamentals : Mapping ER to relations; PK/FK; referential integrity; schema notation. Unit VI: Normalization : Functional dependencies; anomalies; 1NF:BCNF with examples.			Reading: Silberschatz et al. (Ch. 7); Elmasri & Navathe (Ch. 15). Assignment 2: Normalization exercise (assigned Week 3, due Week 5).	
Week 4	Unit VII: SQL Fundamentals (DDL & DML) : CREATE/ALTER/DROP; constraints; INSERT/UPDATE/DELETE. Unit VIII: Simple SELECT : WHERE, LIKE/IN/BETWEEN, ORDER BY, LIMIT/TOP.			Reading: Elmasri & Navathe (Ch. 4). Lab: Build tables & run basic queries.	
Week 5	Unit IX: Joins : INNER/LEFT/RIGHT joins; FK:based relationships with examples.			Reading: Silberschatz et al. (Ch. 5 sections). Lab: Joins & summaries.Assignment 2 Due.	

	Unit X: Aggregation & Grouping : COUNT/SUM/AVG/MAX/MIN; GROUP BY/HAVING.	
Week 6	Unit XI: Advanced SQL : Subqueries, EXISTS/NOT EXISTS, UNION/INTERSECT/EXCEPT; views for abstraction/security. Unit XII: Transactions (Intro) : ACID; COMMIT/ROLLBACK; isolation basics.	Reading: Elmasri & Navathe (Ch. 5 sections); Silberschatz et al. (Ch. 15 overview). Assignment 3: SQL problem set (due Week 7).
Week 7	Unit XIII: Admin & Optimization : Indexing basics, trade:offs. Unit XIV: Security & Integrity : Constraints; GRANT/REVOKE; intro to SQL injection.	Reading: Silberschatz et al. (Ch. 16 intro); Elmasri & Navathe (Ch. 24 overview). Assignment 3 Due. Assignment 4: Project Part B : Implement schema, load data, and write example queries (due Week 9).
Week 8	Midterm Exam : Units I:XIV (design/normalization, SQL, concepts).	:
Week 9	Unit XV: Data Warehousing : Operational vs. warehouse; OLAP; star schemas (facts/dimensions). Unit XVI: ETL & Cubes : ETL pipeline; roll:up/drill:down; BI basics.	Reading: Connolly & Begg (Ch. 29); Kimball (Ch. 2 suggested). Assignment 4 Due.
Week 10	Unit XVII: NoSQL Overview : Motivation; CAP; key:value, document, wide:column, graph : pros/cons vs. relational. Unit XVIII: Document & Column:Family : JSON docs (MongoDB) and column stores (Cassandra) with simple examples.	Reading: Sadalage & Fowler (Ch. 1:2). Case: NoSQL suitability scenario. Assignment 5: NoSQL research report (due Week 12).
Week 11	Unit XIX: Graph Databases : Nodes/edges/properties; Cypher basics; use cases. Unit XX: Key:Value & NewSQL : Redis concepts; NewSQL overview (Spanner/CockroachDB).	Reading: Sadalage & Fowler (Ch. 4). Lab: Mini graph dataset queries.
Week 12	Unit XXI: Vector Databases & AI Data : Embeddings and similarity search; use cases and tools (e.g., FAISS, Pinecone, Vespa). Unit XXII: Multi:Model & Future Trends : Multi:model DBs; DBaaS; Hadoop/Spark overview.	Reading: Intro to Vector DBs (article/whitepaper, provided). Stonebraker (suggested). Assignment 5 Due.
Week 13	Unit XXIII: Database Application Development : SQL from host languages; JDBC/ODBC/DB:API; ORMs (Hibernate/Django ORM). Unit XXIV: Integration Case Study : Polyglot persistence architecture walkthrough.	Reading: Elmasri & Navathe (Ch. 9 overview). Case: system architecture blog (provided).
Week 14	Unit XXV: Design Review & Technology Selection : Integrity, scalability, consistency trade:offs; when to choose relational vs. NoSQL vs. specialized DBs. Unit XXVI: Project Presentations / Comprehensive Review	Reading: Review chapters and problems. Optional practice set on SQL/normalization.
Week 15	Final Review & Catch:up : Address difficult topics; recap key terms (ACID, 3NF/BCNF, CAP).	:

Week 16	Final Term Exam		
Textbooks and Reading Material			
1. Textbooks i. Elmasri, R., & Navathe, S. B. <i>Fundamentals of Database Systems</i> (Latest Edition). Addison-Wesley. ii. Silberschatz, A., Korth, H., & Sudarshan, S. <i>Database System Concepts</i> (Latest Edition). McGraw-Hill. 2. Suggested Readings i. Connolly, T., & Begg, C. <i>Database Systems: A Practical Approach to Design, Implementation, and Management</i> (Latest Edition). Pearson. ii. Kimball, R., & Ross, M. <i>The Data Warehouse Toolkit</i> (Latest Edition). Wiley. iii. Sadalage, P., & Fowler, M. <i>NoSQL Distilled</i> (2013). Addison-Wesley. iv. Borwankar, N. <i>Vector Databases: A Practical Introduction</i> (2023). O'Reilly.			
Teaching Learning Strategies			
1. Lectures using multimedia and a whiteboard 2. Interactive discussions and exercises 3. Case studies and simulations 4. Group Projects and Presentations			
Assignments: Types and Number with Calendar			
1. Assignment 1 (Week 1–2): ER Modeling : Mini-world description and ER diagram (ERD due Week 2). 2. Assignment 2 (Week 3–5): Normalization Exercise : Normalize to at least 3NF with documented steps (due Week 5). 3. Assignment 3 (Week 6–7): SQL Problem Set : Joins, subqueries, aggregations 4. Assignment 4 (Week 1–9): Implementation Project : Create schema, enforce constraints, load data, and demonstrate ≥5 queries (due Week 9). 5. Assignment 5 (Week 10–12): NoSQL Research : 2-page report on a chosen NoSQL type with model and use case (due Week 12). 6. Assignment 6 (Optional, Week 13–14): Integration Case Study : Presentation/report on polyglot persistence (due by Week 14).			
Assessment			
Sr. No.	Elements	Weightage	Details
1.	Midterm Assessment	35%	Written Assessment at the mid: point of the semester.
2.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands:on:activities, short tests, projects, practical, reflections, readings, quizzes etc.
3.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

Semester IV

Programme	BSQPM	Course Code	GE-211	Credit Hours	3
Course Title	Entrepreneurship				
Course Introduction					
Entrepreneurship is about recognizing opportunities, developing innovative solutions, and building businesses. This course introduces the core skills needed to start, manage, and grow a business, covering topics from idea generation to business planning and financial management.					
Learning Outcomes					
On the completion of the course, the students will: 6. Identify business opportunities using various methods. 7. Survey the market to rapidly develop and test ideas and gather quick customer feedback. 8. Develop and communicate a new business concept in an efficient, effective, and compelling manner. 9. Translate a business idea into marketing and financial plans.					
Course Content				Assignments/Readings	
Week 1	Introduction to Entrepreneurship: What is entrepreneurship, why it is important, why people become entrepreneurs, changing demographics.			Reading: Textbook Chapter 1 – “The Nature and Importance of Entrepreneurship” Assignment 1: Short essay on “Why I Want to Become an Entrepreneur.”	
Week 2	The Entrepreneurial Process: Overview of entrepreneurial steps and stages.			Reading: Chapter 2 – “The Entrepreneurial Process.” Assignment 2: Flowchart of the entrepreneurial process	
Week 3	Recognizing Opportunities and Generating Ideas: Difference between opportunities and ideas, approaches to identify opportunities, entrepreneurial characteristics.			Evaluating Opportunities.” Class Activity: Brainstorm and present a new business idea.	
Week 4	Personal Characteristics of Entrepreneurs – Traits that help entrepreneurs recognize opportunities and succeed.			Reading: Case Study on a successful entrepreneur. Assignment 3: Self-assessment on entrepreneurial traits.	
Week 5	Feasibility Analysis – Concept, purpose, and four components of feasibility analysis.			Reading: Chapter 4 – “Feasibility Analysis.” Assignment 4: Conduct a mini feasibility study on a business idea.	

Week 6	Industry and Competitor Analysis – Purpose of industry analysis; Porter’s Five Forces Model; types of industries and the opportunities they offer.	Reading: Chapter 5 – “Industry and Competitor Analysis.” Assignment 5: Analyze the competitive forces in a chosen industry.
Week 7	Preparing the Proper Ethical and Legal Foundation – Legal issues for start-ups; required licenses and permits.	Reading: Chapter 6 – “Ethics and Legal Foundations.” Class Discussion: Ethical dilemmas faced by entrepreneurs.
Week 8	Choosing a Form of Business Organization – Types, pros and cons of sole proprietorship, partnership, corporation, and LLC.	Reading: Chapter 7 – “Forms of Business Ownership.” Assignment 6: Compare two forms of business organizations.
Week 9	Assessing a New Venture’s Financial Strength and Viability – Four main financial objectives; financial management process; key financial statements.	Reading: Chapter 8 – “Financial Management for Entrepreneurs.” Assignment 7: Prepare a simple income statement for a small business.
Week 10	Getting Financing or Funding – Importance of financing; sources of personal financing; preparing for raising debt or equity; sources of equity and debt financing.	Reading: Chapter 9 – “Sources of Financing.” Group Activity: Prepare a funding plan for a business idea.
Week 11	Unique Marketing Issues – Three-step process to identify customers; 4Ps of marketing; seven-step sales process.	Reading: Chapter 10 – “Entrepreneurial Marketing.” Assignment 8: Develop a marketing mix for your proposed business.
Week 12	Preparing for and Evaluating the Challenges of Growth – Reasons for growth; managing growth stages.	Reading: Chapter 11 – “Managing Firm Growth.” Class Discussion: Challenges of scaling up a start-up.
Week 13	Strategies for Firm Growth – Core internal growth strategies and additional product growth strategies.	Reading: Chapter 12 – “Growth Strategies.” Assignment 9: Suggest internal growth strategies for an existing small business

Week 14	External Growth Strategies – Types and examples of mergers, acquisitions, alliances, and joint ventures.	Reading: Chapter 13 – “External Growth Strategies.” Case Study: Analyze a successful merger or partnership.
Week 15	Review and Integration – Review all stages from idea generation to growth strategies.	Group Presentation: Final business plan presentation.
Week 16	Final Evaluation and Course Summary – Course reflection and comprehensive assessment.	Final Exam / Project Report Submission.
Textbooks and Reading Material		
Textbooks. 6. Entrepreneurship: successfully launching new ventures/Bruce Barringer, Latest Edition; Oklahoma State University, Duane Ireland, Texas A&M University Suggested Readings 7. Entrepreneurship and Small Business Management (9th Edition) <i>By Steve Mariotti & Caroline Glackin</i> Offers practical insights for launching and managing small ventures. Includes real-world case studies, templates, and activities. 8. Entrepreneurship: Theory, Process, and Practice (11th Edition) <i>By Donald F. Kuratko</i> Focuses on innovation, business models, and entrepreneurial behavior. Excellent for understanding the mindset and leadership of entrepreneurs. 9. Small Business Management: Launching and Growing Entrepreneurial Ventures (20th Edition) <i>By Justin G. Longenecker, J. William Petty, Leslie E. Palich, and Frank Hoy</i> Strong emphasis on financial planning and sustainable business growth. 10. Includes examples from emerging markets.		
Teaching Learning Strategies		
5. Lectures using multimedia and whiteboard 6. Interactive discussions and exercises 7. Case studies and simulations 8. Group Projects and Presentations		
Assignments: Types and Number with Calendar		
7. Assignment 1 (Week 2): Write a short essay on “Why I Want to Become an Entrepreneur” explaining personal motivation and entrepreneurial goals. 8. Assignment 2 (Week 3): Identify and describe a new business idea based on local market opportunities. Include how the idea meets an unmet customer need. 9. Assignment 3 (Week 4): Conduct a self-assessment of entrepreneurial traits using an online or instructor-provided questionnaire and summarize findings in a brief report. 10. Assignment 4 (Week 5): Prepare a feasibility analysis for a business idea, covering product/service feasibility, market feasibility, financial feasibility, and organizational feasibility.		

11. Assignment 5 (Week 6): Perform an industry and competitor analysis using Porter's Five Forces Model for a selected industry in Pakistan.
12. Assignment 6 (Week 7): Prepare a short report on the ethical and legal considerations a start-up in Pakistan must address, including required licenses and permits.
13. Assignment 7 (Week 9): Develop simplified financial statements (Income Statement, Balance Sheet, Cash Flow) for a proposed small business idea.
14. Assignment 8 (Week 10): Create a funding plan for a start-up, identifying possible sources of personal, debt, and equity financing.
15. Assignment 9 (Week 11): Design a marketing mix (4Ps) for your chosen business idea, explaining target customers and promotional strategies.
16. Assignment 10 (Week 12): Write a short analysis on the challenges entrepreneurs face during business growth and suggest possible solutions.
17. Assignment 11 (Week 13): Suggest internal growth strategies for an existing small business in your local area.
18. Assignment 12 (Week 14): Select a recent merger or strategic partnership (local or international) and analyze how it supported firm growth.
19. Assignment 13 (Week 15): Prepare and present a complete business plan for a new venture, integrating all concepts learned during the course.

Assessment

Sr. No.	Elements	Weightage	Details
13.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
14.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
15.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

Program	BSQPM	Course Code	GE-212	Credit Hours	3
Course Title	Labor & Social Compliance				
Course Introduction					
Labor and Social Compliance focuses on the legal framework governing the relationship between employers and employees, as well as the rights and obligations of individuals within the workplace. This course examines the principles and regulations that protect workers’ rights, ensure fair labor practices, and promote social justice. It covers both national and international labor laws and their implications for various stakeholders.					
Learning Outcomes					
On the completion of the course, the students will be able to:					
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Week 6	Unit V: Social Compliance Frameworks 5.1 WRAP, Fair Trade, BSCI, and Sedex/SMETA 5.2 Code of conduct requirements and audit protocols 5.3 Global buyer expectations	Reading: WRAP Principles; BSCI Code of Conduct; SMETA Guidelines (Section 1) Class activity: Analyze and compare compliance frameworks
Week 7	Unit VI: Compliance Management Systems 6.1 Policy formulation and documentation 6.2 Compliance monitoring and reporting mechanisms 6.3 Corrective and preventive action management	Reading: Hopkins (Ch. 4–5) Assignment 3: Draft a sample compliance policy and monitoring template
Week 8	Midterm Review and Exam	Midterm Exam covering Units I–VI
Week 9	Unit VII: Social Compliance Auditing (Part I) 7.1 Fundamentals of social audits 7.2 Types of audits: internal, external, certification 7.3 Audit planning and auditor qualifications	Reading: Sedex/SMETA Guidelines (Section 2–3) Class exercise: Develop an internal audit plan for a manufacturing unit
Week 10	Unit VIII: Social Compliance Auditing (Part II) 8.1 Evidence collection, interviews, and site inspections 8.2 Non-conformance identification and classification	Reading: SMETA Guidelines (Section 4) Assignment 4: Prepare a social audit checklist for workplace standards
Week 11	Unit IX: Corrective Action & Follow-Up 9.1 Developing corrective action plans (CAP) 9.2 Reporting, verification, and continuous improvement	Reading: SA8000 Implementation Guide (Ch. 8–9) Case study: CAP report for a garment factory audit
Week 12	Unit X: Role of Buyers & Certification Bodies 10.1 Global buyer codes of conduct 10.2 Certification processes and buyer-driven compliance expectations	Reading: Buyer Code of Conduct Samples (Nike, H&M, Levi's) Group Discussion: How buyer audits influence local factory practices
Week 13	Unit XI: Linkage with Quality & Performance 11.1 Relationship between compliance, quality, and sustainability 11.2 Social compliance as a competitive advantage	Reading: Hopkins (Ch. 6–7) Assignment 5: Develop a short report on how compliance improves organizational reputation
Week 14	Unit XII: Industry Case Studies 12.1 Case studies from textile, footwear, and electronics sectors 12.2 Best practices in compliance management	Reading: Case Study Handout on Social Compliance in Apparel Sector Class activity: Review and critique a real-world compliance audit report
Week 15	Unit XIII: Contemporary Issues & Emerging Trends 13.1 Gender equality and empowerment in workplaces 13.2 Modern slavery, gig economy, and digital compliance audits 13.3 Role of AI and blockchain in compliance monitoring	Reading: UN Women & ILO Reports on Gender and Work Group presentation: Emerging technology in social compliance
Week 16	Course Review and Final Exam Preparation Integration of labor laws, compliance systems, and sustainability goals	Final Exam covering Units VII–XIII
Textbooks and Reading Material		

1. Textbooks. - SA8000: International Standard for Social Accountability (Latest Edition). - ILO Conventions and Recommendations: International Labour Organization. - Global Compact Principles – United Nations. - Auditing Social Compliance in Global Supply Chains – Sedex & SMETA Guidelines. - Hopkins, M. Corporate Social Responsibility and International Development (Latest Edition).			
2. Suggested Readings - OECD Guidelines for Multinational Enterprises (Latest Edition). - Ethical Trading Initiative (ETI) Base Code. - Fair Labor Association (FLA) Workplace Code of Conduct.			
Teaching Learning Strategies			
- Lectures using multimedia and a whiteboard - Interactive discussions and exercises - Case studies and simulations - Group Projects and Presentations			
Assignments: Types and Number with Calendar			
- Assignment 1 (Week 1): Role of social compliance in global supply chains - Assignment 2 (Week 5): Workplace compliance checklist (based on SA8000) - Assignment 3 (Week 7): Development of compliance policy and monitoring template - Assignment 4 (Week 10): Preparation of a social audit checklist - Assignment 5 (Week 13): Report on compliance and organizational reputation			
Assessment			
Sr. No.	Elements	Weightage	Details
1.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
2.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
3.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

Program	BSQPM	Course Code	QPM-210	Credit Hours	3
Course Title	Business Intelligence & Dashboard Reporting				
Course Introduction					
Business Intelligence (BI) & Dashboard Reporting focuses on transforming data into actionable insights for informed decision-making. This course provides students with the skills to analyze data using BI tools and create effective dashboards that visualize key performance indicators (KPIs). Students will learn about data sources, data warehousing, and the process of data analysis, along with techniques for designing intuitive dashboards that communicate information clearly. Through hands-on projects, participants will gain practical experience in using BI software to drive business strategy and performance.					
Learning Outcomes					
On the completion of the course, the students will be able to:					
1. Understand the concepts and role of Business Intelligence (BI) in organizational decision-making. 2. Transform raw data into meaningful insights for quality and performance management. 3. Design and develop dashboards and reports using BI tools (Excel, Power BI, Tableau). 4. Apply visualization techniques to monitor KPIs, productivity, and operational performance. 5. Evaluate BI solutions in terms of usability, effectiveness, and decision support					
Course Content				Assignments/Readings	
Week 1	Unit I: Introduction to Business Intelligence 1.1 Definition, scope, and importance of BI 1.2 Role of BI in quality and performance management			Reading: Turban et al., Ch. 1 Assignment 1: Identify BI applications in manufacturing or service industries	
Week 2	Unit II: Data to Decisions 2.1 Data sources and types 2.2 Data cleaning and preprocessing 2.3 ETL (Extract, Transform, Load) process			Reading: Collie & Singh, Ch. 1–2 Exercise: Perform data cleaning and transformation using Excel	
Week 3	Unit III: BI Architectures & Tools 3.1 Overview of BI architectures 3.2 Comparison of BI platforms: Excel, Power BI, Tableau			Reading: Turban et al., Ch. 3 Class Activity: Evaluate features of BI tools for different business needs	
Week 4	Unit IV: Key Performance Indicators (KPIs) 4.1 Defining and selecting KPIs 4.2 Linking KPIs to organizational goals 4.3 KPI measurement and visualization			Reading: Turban et al., Ch. 5 Assignment 2: Develop KPI metrics for a production or quality management process	
Week 5	Unit V: Dashboard Design Principles 5.1 Components of effective dashboards 5.2 Design principles: usability, clarity, minimalism 5.3 Visualization best practices			Reading: Murray, Ch. 2–3 Class Exercise: Critique existing dashboards based on visualization principles	
Week 6	Unit VI: Excel for Dashboard Reporting 6.1 Pivot tables and charts 6.2 Conditional formatting 6.3 Creating KPI dashboards in Excel			Reading: Collie & Singh, Ch. 3–4 Assignment 3: Build a simple Excel dashboard using sample operational data	
Week 7	Unit VII: Power BI for BI & Dashboards (Part I) 7.1 Introduction to Power BI interface 7.2 Data modeling and relationships 7.3 DAX basics for calculated measures			Reading: Collie & Singh, Ch. 5–6 Lab Task: Design a Power BI model using provided dataset	

Week 8	Midterm Review and Exam	Midterm Exam
Week 9	Unit VIII: Power BI for BI & Dashboards (Part II) 8.1 Building interactive reports 8.2 Using slicers, filters, and drill-downs 8.3 Publishing and sharing dashboards	<i>Reading:</i> Collie & Singh, Ch. 7–8 <i>Assignment 4:</i> Create an interactive Power BI dashboard
Week 10	Unit IX: Tableau for Visualization (Part I) 9.1 Introduction to Tableau environment 9.2 Connecting and blending data 9.3 Creating charts and visual stories	<i>Reading:</i> Murray, Ch. 4–5 <i>Class Activity:</i> Develop a simple Tableau visualization for KPIs
Week 11	Unit X: Tableau for Visualization (Part II) 10.1 Advanced visualizations and filters 10.2 Dashboard actions and interactivity 10.3 Storytelling with data	<i>Reading:</i> Murray, Ch. 6–7 <i>Assignment 5:</i> Create a Tableau dashboard to present operational KPIs
Week 12	Unit XI: Performance Reporting & Decision Support 11.1 Linking dashboards to business strategy 11.2 Decision support and reporting automation 11.3 Communicating insights effectively	<i>Reading:</i> Turban et al., Ch. 8 <i>Case Study:</i> Analyze BI reports for managerial decision-making
Week 13	Unit XII: BI in Quality & Performance Management 12.1 Monitoring KPIs (DHU, WIP, MST, MTTR, Line Efficiency) 12.2 BI dashboards for productivity and quality improvement	<i>Reading:</i> Industry Case Study Handout <i>Group Activity:</i> Design a BI solution for production performance monitoring
Week 14	Unit XIII: Emerging Trends in BI 13.1 Self-service BI and mobile dashboards 13.2 AI and machine learning in BI 13.3 Real-time data analytics	<i>Reading:</i> Turban et al., Ch. 10 <i>Group Presentation:</i> Emerging BI technologies and their applications
Week 15	Unit XIV: Industry Case Studies 14.1 BI success stories from manufacturing, retail, and supply chain 14.2 Best practices in dashboard implementation	<i>Reading:</i> Case Study Compendium <i>Class Activity:</i> Review and critique a real BI dashboard implementation
Week 16	Course Review and Final Exam Preparation Integration of BI tools, dashboard design, and strategic decision-making	Final Exam
Textbooks and Reading Material		
1. Textbooks. - Turban, E., Sharda, R., & Delen, D. <i>Decision Support and Business Intelligence Systems</i> (Latest Edition). Pearson. - Collie, R., & Singh, A. <i>Power BI Book: Collect, Combine, and Transform Data</i> (Latest Edition). - Murray, D. <i>Tableau Your Data! Fast and Easy Visual Analysis with Tableau Software</i> (Latest Edition). Wiley. 2. Suggested Readings - Few, S. <i>Information Dashboard Design: Displaying Data for At-a-Glance Monitoring</i> (Latest Edition). - Microsoft Power BI Documentation (online). - Tableau Public Gallery – Industry Dashboard Examples.		
Teaching Learning Strategies		
1. Lectures using multimedia and a whiteboard		

2. Hands-on lab sessions and software demonstrations 3. Case studies and real-world data projects 4. Group projects and presentations			
Assignments: Types and Number with Calendar			
1. Assignment 1 (Week 1): BI applications in manufacturing or service industries 2. Assignment 2 (Week 4): Develop KPI metrics for a business process 3. Assignment 3 (Week 6): Build an Excel-based KPI dashboard 4. Assignment 4 (Week 9): Create an interactive Power BI dashboard 5. Assignment 5 (Week 11): Develop a Tableau dashboard for operational KPIs			
Assessment			
Sr. No.	Elements	Weightage	Details
1.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
2.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
3.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

Program	BSQPM	Course Code	QPM-211	Credit Hours	3
Course Title	Metrology & Quality Control				
Course Introduction					
Metrology & Quality Control is a crucial field that ensures the accuracy and reliability of measurements and the quality of products in various industries. This course explores the principles of measurement science, the techniques of quality control, and the standards that govern these practices. Students will learn how to apply metrology and quality control tools to improve product quality, enhance operational efficiency, and comply with industry regulations.					
Learning Outcomes					
After completing this course, the student will be able to:					
1. Understand the principles of metrology and its role in quality assurance and performance improvement. 2. Apply measurement techniques, instruments, and standards for ensuring accuracy and precision in manufacturing and service processes. 3. Analyze product and process quality using inspection methods and quality control tools. 4. Relate measurement and quality control practices to organizational performance and customer satisfaction. 5. Develop a foundation for advanced courses such as Six Sigma, Lean, and Total Quality Management.					
Course Content				Assignments/Readings	
Week 1	Unit I: Introduction to Metrology 1.1 Concepts of measurement, accuracy, precision, calibration, and traceability 1.2 Importance of metrology in product quality and standardization			Reading: Jain, Ch. 1 Assignment 1: Write a short report on the importance of calibration in ensuring product quality	
Week 2	Unit II: Measurement Standards & Systems 2.1 Primary, secondary, and working standards 2.2 National and international measurement systems (ISO, BIS, NIST)			Reading: Jain, Ch. 2 Exercise: Identify measurement standards used in a local industry	
Week 3	Unit III: Measuring Instruments & Techniques (Part I) 3.1 Vernier calipers, micrometers, and gauges 3.2 Linear and angular measurement instruments			Reading: Jain, Ch. 3–4 Class Demonstration: Hands-on with vernier and micrometer	
Week 4	Unit IV: Measuring Instruments & Techniques (Part II) 4.1 Coordinate Measuring Machines (CMM) 4.2 Surface measurement, roundness, and form tolerances 4.3 Non-contact measurement methods (optical, laser)			Reading: Jain, Ch. 5–6 Assignment 2: Prepare a comparison chart of contact vs. non-contact measurement techniques	
Week 5	Unit V: Errors in Measurement 5.1 Types and sources of measurement errors 5.2 Systematic and random errors 5.3 Error analysis, repeatability, and reproducibility			Reading: Jain, Ch. 7 Exercise: Calculate measurement error and uncertainty for given readings	
Week 6	Unit VI: Fundamentals of Quality Control 6.1 Role of quality control in operations 6.2 Inspection vs. prevention approaches 6.3 Statistical and non-statistical QC techniques			Reading: Montgomery, Ch. 1–2 Assignment 3: Explain the difference between quality control and quality assurance with examples	

Week 7	Unit VII: Inspection Methods 7.1 Types of inspection: incoming, in-process, final 7.2 Sampling inspection vs. 100% inspection 7.3 Inspection documentation and reporting	<i>Reading:</i> Montgomery, Ch. 3 <i>Lab Task:</i> Design an in-process inspection checklist
Week 8	Midterm Review and Exam Review of Units I–VII	<i>Midterm Exam</i>
Week 9	Unit VIII: Quality Control Tools (Part I) 8.1 Introduction to the 7 Basic QC Tools 8.2 Check sheets, histograms, and Pareto charts	<i>Reading:</i> Montgomery, Ch. 4 <i>Class Activity:</i> Construct a Pareto chart from sample data
Week 10	Unit IX: Quality Control Tools (Part II) 9.1 Cause-and-effect diagrams and flowcharts 9.2 Scatter diagrams and control charts	<i>Reading:</i> Montgomery, Ch. 5 <i>Assignment 4:</i> Develop a cause-and-effect diagram for a common production defect
Week 11	Unit X: Acceptance Sampling 10.1 Concept and need for sampling inspection 10.2 Single, double, and multiple sampling plans 10.3 OC curves and AQL concepts	<i>Reading:</i> Montgomery, Ch. 9 <i>Exercise:</i> Design a single sampling plan for a batch of components
Week 12	Unit XI: Process Capability & Performance Measures 11.1 Process capability indices (Cp, Cpk) 11.2 Performance indices (Pp, Ppk) 11.3 Interpretation and application in process improvement	<i>Reading:</i> Montgomery, Ch. 6 <i>Assignment 5:</i> Calculate Cp and Cpk for given process data
Week 13	Unit XII: Statistical Process Control (SPC) 12.1 Control charts for variables and attributes 12.2 Process variation and stability analysis	<i>Reading:</i> Montgomery, Ch. 7–8 <i>Class Exercise:</i> Plot $\bar{X}$ and R control charts using sample data
Week 14	Unit XIII: Standards & Certifications in Metrology and QC 13.1 ISO 9001, ISO/IEC 17025, and calibration standards 13.2 Quality audits and traceability in measurement systems	<i>Reading:</i> Jain, Ch. 10; ISO 9001 Overview <i>Group Discussion:</i> Role of calibration labs in quality assurance
Week 15	Unit XIV: Industry Applications & Best Practices 14.1 Case studies in precision engineering and quality control 14.2 Integration of metrology in Lean and Six Sigma environments	<i>Reading:</i> Industry Case Study Handout <i>Group Activity:</i> Evaluate QC practices in a local manufacturing firm
Week 16	Course Review and Final Exam Preparation Integration of measurement accuracy, quality tools, and performance improvement	<i>Final Exam</i>
Textbooks and Reading Material		
1. Textbooks. i. Jain, R.K. <i>Engineering Metrology</i> (Latest Edition). Khanna Publishers. ii. Montgomery, D.C. <i>Introduction to Statistical Quality Control</i> (Latest Edition). Wiley. 2. Suggested Readings i. ISO 9001 and ISO/IEC 17025 Standards (Latest Edition). ii. Besterfield, D.H. <i>Quality Control</i> . Pearson Education. iii. Juran, J.M. <i>Juran's Quality Handbook</i> . McGraw-Hill.		
Teaching Learning Strategies		

1. Lectures using multimedia and a whiteboard 2. Hands-on laboratory demonstrations 3. Case studies and industrial examples 4. Group projects and presentations			
Assignments: Types and Number with Calendar			
1. Assignment 1 (Week 1): Report on the importance of calibration in quality assurance 2. Assignment 2 (Week 4): Comparison of contact and non-contact measurement methods 3. Assignment 3 (Week 6): Difference between quality control and quality assurance 4. Assignment 4 (Week 10): Cause-and-effect diagram for a common defect 5. Assignment 5 (Week 12): Process capability analysis (Cp and Cpk calculation)			
Assessment			
Sr. No.	Elements	Weightage	Details
1.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
2.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
3.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

Program	BSQPM	Course Code	QPM-212	Credit Hours	2
Course Title	Lean Management				
Course Introduction					
Lean Management is a methodology that focuses on improving efficiency, reducing waste, and enhancing customer value in organizational processes. This course explores the principles and practices of Lean Management, emphasizing the continuous improvement of operations and the importance of a culture that promotes efficiency and quality. Students will learn to apply Lean tools and techniques to optimize processes in various sectors, including manufacturing, service, and healthcare.					
Learning Outcomes					
After completing this course, the student will be able to:					
1. Able to employ lean Management concepts as a strategy to eliminate waste and improve organizational performance 2. Able to apply lean concepts and tools to identify improvement areas and generate solutions to improve operational efficiency 3. Able to undertake an efficiency improvement project with lean thinking concepts and tools, and present the project proposal professionally					
Course Content				Assignments/Readings	
Week 1	Unit I: Introduction to Lean Management 1.1 Evolution of Lean Management (from Toyota Production System to global practices) 1.2 Philosophy and importance of Lean in modern business			Reading: Womack & Jones, Ch. 1 Assignment 1: Write a short report on how Lean philosophy differs from traditional management approaches	
Week 2	Unit II: Lean Thinking & Principles 2.1 Five principles of Lean: Value, Value Stream, Flow, Pull, and Perfection 2.2 Waste identification: 7+1 types of waste (Muda, Mura, Muri)			Reading: Womack & Jones, Ch. 2–3 Exercise: Identify examples of the 7 wastes in a local organization	
Week 3	Unit III: Value and Value Stream Mapping (VSM) 3.1 Value identification and customer perspective 3.2 Process mapping vs. value stream mapping 3.3 Steps in creating a VSM			Reading: Tapping & Shuker, Ch. 1–3 Assignment 2: Develop a simple process map for a routine process in your university or workplace	
Week 4	Unit IV: Current & Future State Mapping 4.1 Data collection for VSM 4.2 Analyzing flow and identifying bottlenecks 4.3 Designing future state maps for improvement			Reading: Tapping & Shuker, Ch. 4–6 Class Activity: Create a current and future state VSM for a sample production process	
Week 5	Unit V: Lean Tools – Flow and Pull Systems 5.1 Just-in-Time (JIT) production 5.2 Kanban systems and pull scheduling 5.3 Line balancing concepts			Reading: Rich et al., Ch. 2–3 Assignment 3: Design a basic Kanban system for a small production line	
Week 6	Unit VI: Process Efficiency Concepts 6.1 Cycle time vs. Takt time 6.2 Bottleneck analysis			Reading: Rich et al., Ch. 4	

	6.3 Workload balancing and resource optimization	<i>Exercise:</i> Calculate Takt time and analyze efficiency for a given process
Week 7	Unit VII: Error-Proofing and Standardization 7.1 Poka-Yoke (mistake-proofing) techniques 7.2 Standard work procedures and visual management	<i>Reading:</i> Womack & Jones, Ch. 4–5 <i>Class Exercise:</i> Design a Poka-Yoke example for a real-life error situation
Week 8	Midterm Exam	<i>Midterm Exam</i>
Week 9	Unit VIII: Total Productive Maintenance (TPM) 8.1 Objectives and pillars of TPM 8.2 Autonomous maintenance and preventive maintenance practices 8.3 Equipment effectiveness measurement (OEE)	<i>Reading:</i> Rich et al., Ch. 5 <i>Assignment 4:</i> Calculate OEE for a sample machine using the provided data
Week 10	Unit IX: Kaizen and Continuous Improvement 9.1 The Kaizen philosophy and small-step improvement 9.2 Gemba walks and employee involvement 9.3 Problem-solving cycles (PDCA, A3)	<i>Reading:</i> Womack & Jones, Ch. 6 <i>Class Activity:</i> Develop a Kaizen idea sheet for process improvement
Week 11	Unit X: Lean Performance Measurement 10.1 KPIs for Lean (Lead time, Throughput, WIP, etc.) 10.2 Visual performance dashboards 10.3 Linking Lean KPIs with organizational goals	<i>Reading:</i> Rich et al., Ch. 6–7 <i>Exercise:</i> Design a Lean performance dashboard for a process
Week 12	Unit XI: Lean Implementation in Manufacturing & Services 11.1 Lean in manufacturing environments 11.2 Lean in service and healthcare sectors 11.3 Success factors and challenges in Lean transformation	<i>Reading:</i> Womack & Jones, Ch. 7–8 <i>Assignment 5:</i> Prepare a short report on a Lean implementation case (manufacturing or service)
Week 13	Unit XII: Lean Culture and Leadership 12.1 Role of leadership and employee engagement in Lean success 12.2 Building a culture of continuous improvement	<i>Reading:</i> Rich et al., Ch. 8 <i>Group Discussion:</i> Leadership practices that sustain Lean initiatives
Week 14	Unit XIII: Integration with Quality and Six Sigma 13.1 Relationship between Lean, Six Sigma, and Quality Management 13.2 Lean Six Sigma overview and examples	<i>Reading:</i> Supplementary Article on Lean Six Sigma <i>Class Activity:</i> Compare Lean and Six Sigma tools and their integration benefits
Week 15	Unit XIV: Contemporary Issues in Lean Management 14.1 Digital Lean: IoT, AI, and data-driven Lean practices 14.2 Lean and sustainability 14.3 Future of Lean in Industry 4.0	<i>Reading:</i> Selected research papers/case study handouts <i>Group Presentation:</i> Emerging technologies supporting Lean initiatives
Week 16	Final Exam	<i>Final Exam</i>

Textbooks and Reading Material

1. Textbooks.
 - i. Womack, J. & Jones, D. *Lean Thinking: Banish Waste and Create Wealth in Your Corporation*. Latest Edition. Simon & Schuster.

ii.	Rich, N., Bateman, N., Esain, A., & Massey, L. <i>Lean Evolution: Lessons from the Workplace</i> . Latest Edition. Cambridge University Press.
iii.	Tapping, D. & Shuker, T. <i>Value Stream Management for the Lean Office</i> . Latest Edition. Productivity Press.
2. Suggested Readings	
i.	Liker, J.K. <i>The Toyota Way: 14 Management Principles from the World's Greatest Manufacturer</i> . McGraw-Hill.
ii.	Rother, M. & Shook, J. <i>Learning to See: Value Stream Mapping to Add Value and Eliminate MUDA</i> . Lean Enterprise Institute.

Teaching Learning Strategies

1. Lectures using multimedia and a whiteboard
2. Case studies and simulation exercises
3. Group projects and presentations
4. Gemba-based observations and improvement proposals

Assignments: Types and Number with Calendar

1. Assignment 1 (Week 1): Report on Lean philosophy and its relevance today
2. Assignment 2 (Week 3): Process map for a routine process (office or production)
3. Assignment 3 (Week 5): Design of a simple Kanban system
4. Assignment 4 (Week 9): OEE calculation and TPM analysis
5. Assignment 5 (Week 12): Case study report on Lean implementation in manufacturing/service

Assessment

Sr. No.	Elements	Weightage	Details
1.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
2.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
3.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

Program	BSQPM	Course Code	QPM-213	Credit Hours	2
Course Title	R for Analytics				
Course Introduction					
This course introduces R as a practical tool for data analytics. Students learn core R programming (data types, data structures, control flow), data import, wrangling with the tidyverse, and visualization with ggplot2. The course covers descriptive statistics, hypothesis testing, and introductory predictive modeling (linear/logistic regression, clustering) to show how R supports real analytics work. Through hands-on labs and a team project, students clean real datasets, explore patterns, and communicate results using R Markdown.					
Learning Outcomes					
On completion of the course, students will be able to:					
1. Use R programming fundamentals for data manipulation, working in RStudio with vectors, matrices, data frames, and lists, importing data (CSV/Excel), and performing cleaning and transformations. 2. Perform exploratory data analysis (EDA) in R by computing descriptive statistics, producing frequency tables and crosstabs, and creating visualizations (histograms, bar charts, scatterplots, boxplots) to reveal patterns and outliers. 3. Apply statistical analysis and modeling in R by running basic tests (t-tests, chi-square) and fitting simple predictive models (linear regression, logistic regression or clustering), interpreting results in context. 4. Communicate analytical findings effectively by producing clear ggplot2 graphics and compiling reproducible reports with R Markdown for stakeholders.					
Course Content				Assignments/Readings	
Week 1	Unit I: Introduction to R and RStudio : Installing R/RStudio; interface; simple calculations; basic commands. Unit II: R Basics : Syntax & Operations : Variables, comments, functions (e.g., sqrt(), log()), using help.			Reading: Wickham & Grolemund (Ch. 1); Kabacoff (Ch. 1). Assignment 1: Lab 1 : Install, script basics, print “Hello, R”.	
Week 2	Unit III: Data Types & Structures : Numeric/character/logical/factor; vectors, matrices/arrays (brief), lists, data frames; indexing/subsetting. Unit IV: Basic Functions & Packages : Summaries (mean(), sd(), summary()), installing/loading packages; tidyverse.			Reading: Wickham & Grolemund (Ch. 4); Kabacoff (Ch. 2). Assignment 2: Build a small data frame, subset, compute summaries (due Week 3).	
Week 3	Unit V: Importing & Managing Data : readr::read_csv(), readxl; head(), str(); handling NA values. Unit VI: dplyr (Part 1) : select(), filter(), arrange(), mutate(), summarize(), group_by(), piping %>%.			Reading: Wickham & Grolemund (Ch. 5, Ch. 7 up to grouping). Lab: Filter/summarize (e.g., Gapminder).Assignment 2 Due.	
Week 4	Unit VII: dplyr (Part 2) : inner_join(), left_join(); tidyr pivot_longer()/pivot_wider(); dates (as.Date, lubridate basics). Unit VIII: EDA : Descriptives : Mean/median/quantiles; table(); quick overviews (skimr/psych); outliers.			Reading: Wickham & Grolemund (Ch. 8–9); Kabacoff (Ch. 3). Assignment 3: Data wrangling challenge (due Week 6).	

Week 5	Unit IX: ggplot2 (Part 1) : Grammar of Graphics; bar/hist/box/scatter; labels, titles, aesthetics. Unit X: ggplot2 (Part 2) : Facets, line charts, themes, choosing appropriate plots.	Reading: Wickham & Grolemund (Ch. 3); Kabacoff (Ch. 5 sections). Lab: Histogram, scatter + <code>geom_smooth()</code> , faceted bar.
Week 6	Unit XI: EDA : Visualization & Patterns : Boxplots for outliers, scatter for correlation; quick multivariate views. Unit XII: Probability & Distributions : Sampling (<code>sample()</code>), <code>rnorm()</code> , <code>runif()</code> , common distributions; basic plots.	Reading: Kabacoff (Ch. 4). Case-study EDA (provided). Assignment 3 Due.
Week 7	Unit XIII: Statistical Inference : One/two-sample t-tests (<code>t.test</code>), chi-square (<code>chisq.test</code>); assumptions & interpretation. Unit XIV: Regression Intro : <code>lm()</code> for simple linear regression; coefficients, R^2 , predictions; plot regression line.	Reading: Kabacoff (Ch. 6, Ch. 7 intro). Lab: t-test + simple regression. Assignment 4: Mini analysis (due Week 9).
Week 8	Midterm Exam : Practical + conceptual (short code snippets, interpretation).	:
Week 9	Unit XV: Classification Basics : Logistic regression with <code>glm()</code> (e.g., Titanic); intro decision trees (<code>rpart</code>). Unit XVI: Clustering Basics : <code>kmeans()</code> ; choosing k; interpreting clusters; visualization.	Reading: Kabacoff (Ch. 8 sections). Suggested: ISLR Ch. 3 excerpt. Assignment 4 Due.
Week 10	Unit XVII: Time Series Intro : <code>lubridate</code> ; time-series objects (<code>ts</code> , <code>zoo/xts</code>); plots; trend/seasonality; simple forecast demo. Unit XVIII: Real-World Data Issues : Encoding, outliers, aggregation; brief text handling/ <code>tidytext</code> demo.	Reading: Wickham & Grolemund (Ch. 16); Kabacoff (Ch. 14 sections). Assignment 5: Group project proposal (due Week 11).
Week 11	Unit XIX: Reporting with R Markdown : Literate programming; chunks; knit to HTML/PDF; convert prior analysis to report. Unit XX: Shiny/Dashboards (Overview) : Brief demo of Shiny or <code>flexdashboard</code> .	Reading: Wickham & Grolemund (Ch. 19). Lab: Turn analysis into Rmd report. Assignment 5 Due: Proposal.
Week 12	Unit XXI: Project Work Session & Advanced Tips : In-class help; vectorization vs. loops; debugging; help resources. Unit XXII: Review of R Concepts : End-to-end example from raw to insights.	Assignment 6: Project analysis & report prep (due Week 15).
Week 13	Unit XXIII: Special Topics : <code>caret/tidymodels</code> ; SQL via DBI; text mining with <code>tidytext</code> ; simple maps. Unit XXIV: Ethics in Data Analysis : Privacy, reproducibility, avoiding p-hacking; clear graphics.	Reading: “Ten Simple Rules for Reproducible Computational Research” (provided).
Week 14	Unit XXV: Course Review & Q&A : Rapid recap via short tasks/quizzes. Unit XXVI: Project Finalization : Rehearsals, feedback, polish reports.	
Week 15	Group Project Presentations & Discussion : Findings, plots, and takeaways; course wrap-up.	Assignment 6 Due: Final report (Rmd/script) & presentation.
Week 16	Final Exam : Practical/in-class or take-home aligned with outcomes (per instructor’s plan).	:

Textbooks and Reading Material			
1. Textbooks i. Wickham, H., & Grolemund, G. <i>R for Data Science</i> . O'Reilly. ii. Kabacoff, R. <i>R in Action</i> (2nd ed.). Manning. 2. Suggested Readings i. Field, A., Miles, J., & Field, Z. <i>Discovering Statistics Using R</i> . SAGE. ii. James, G., Witten, D., Hastie, T., & Tibshirani, R. <i>An Introduction to Statistical Learning with Applications in R</i> (2nd ed.). Springer. iii. Teetor, P. <i>R Cookbook</i> (2nd ed.). O'Reilly.			
Teaching Learning Strategies			
5. Lectures using multimedia and a whiteboard 6. Interactive discussions and exercises 7. Case studies and simulations 8. Group Projects and Presentations			
Assignments: Types and Number with Calendar			
1. Assignment 1 (Week 1): R setup & basics : install, run simple script (due Week 1/2). 2. Assignment 2 (Week 2–3): Data structures exercise : create/manipulate vectors & data frames (due Week 3). 3. Assignment 3 (Week 4–6): Data wrangling & EDA : tidy a messy dataset and summarize (due Week 6). 4. Assignment 4 (Week 7–9): Mini analysis : hypothesis test or simple regression with interpretation (due Week 9). 5. Assignment 5 (Week 10–15): Group project : proposal (Week 11), full analysis, report (Rmd) and presentation (due Week 15). 6. ☐ (Optional) Weekly labs/quizzes: Short reflections or quizzes to reinforce learning.			
Assessment			
Sr. No.	Elements	Weightage	Details
4.	Midterm Assessment	35%	Written Assessment at the mid:point of the semester.
5.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands:on:activities, short tests, projects, practical, reflections, readings, quizzes etc.
6.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

Semester V

Program	BSQPM	Course Code	INT-301	Credit Hours	3
Course Title	Economics				
Course Introduction					
Economics course is to provide students with a fundamental understanding of economic concepts, principles, and models. The course aims to develop analytical thinking and decision-making skills by exploring how individuals, businesses, and governments allocate resources. It also equips students with tools to analyze real-world economic issues such as market behavior, inflation, unemployment, trade, and fiscal and monetary policy.					
Learning Outcomes					
On completion of the course, students will be able to: 1. Understanding the principles of microeconomics and macroeconomics. 2. Developing the ability to analyze and interpret economic data. 3. Applying economic theories to solve practical problems. 4. Exploring the relationship between economics and societal issues like inequality and sustainability.					
Course Content				Assignments/Readings	
Week 1	Introduction to Economics: Definition and scope of economics, economic systems (Capitalism, Socialism, Mixed Economy), basic economic problem: scarcity and choice.			Reading: Mankiw (Ch. 1–2); Assignment: Essay on the economic system of your country	
Week 2	Microeconomics – Demand and Supply: Concepts, laws, and elasticity			Exercise: Graph demand and supply curves; calculate price elasticity	
Week 3	Consumer Behavior: Utility theory and indifference curves			Assignment: Solve utility maximization and draw indifference curves	
Week 4	Production and Costs: Short-run and long-run costs			Practical: Cost calculation for a hypothetical firm	
Week 5	Market Structures: Perfect competition, monopoly, oligopoly, monopolistic competition			Case Study: Compare pricing strategies of firms in different market structures	
Week 6	Price Determination and Resource Allocation			Exercise: Analyze equilibrium price and quantity in various markets	
Week 7	Macroeconomics – National Income Accounting: GDP, GNP, and measurement methods			Assignment: Calculate GDP using expenditure and income approaches	
Week 8	Economic Growth and Development			Reading: Samuelson & Nordhaus (Ch. 10–11); Discussion: Factors affecting economic growth	
Week 9	Inflation and Unemployment: Types, causes, effects; measurement of unemployment			Assignment: Analyze recent inflation and unemployment data in your country	

Week 10	Fiscal Policy: Government revenue, expenditure, and budget	Exercise: Evaluate fiscal policy measures and their economic impact
Week 11	Monetary Policy and Role of Central Banks	Case Study: Effect of central bank policies on inflation and growth
Week 12	International Economics – Trade and Comparative Advantage	Assignment: Analyze trade patterns and gains from trade for two countries
Week 13	Balance of Payments and Exchange Rates: Current and capital accounts, fixed vs. floating exchange rates	Exercise: Interpret a country's balance of payments report
Week 14	Globalization and Economic Integration	Discussion: Pros and cons of economic integration in the global economy
Week 15	Applied Economics and Policy Analysis: Public economics, environmental economics, health and education economics, behavioral economics	Assignment: Policy brief on a contemporary economic issue (taxation, climate change, or health policy)
Week 16	Research in Economics & Current Issues: Basics of econometrics, case studies, income inequality, digital economy, climate change	Final Exam / Project: Analyze a current economic issue using economic principles

Textbooks and Reading Material

Textbooks:

1. Mankiw, N. G. *Principles of Economics*, Latest Edition.
2. Samuelson, P., & Nordhaus, W. *Economics*, Latest Edition.

Suggested Readings:

1. Case studies and journal articles provided by instructor.
2. Free online textbook: Principles of Economics (Open Textbook) from the Open Textbook Library — good for additional examples and self-study. [Open Education](#)
3. Resource site: CORE Econ — offers free introductory ebooks, policy-based applications, and data-driven materials. core-econ.org
4. Study-guides & outlines: For example the “Supplementary Material IB Economics” document offers short explanations of topics like elasticity, policy, trade. [Scribd](#)
5. Readable popular economics books: These are not strict textbooks but are great for understanding concepts and real-world applications (e.g., Basic Economics by Thomas Sowell)

1. Teaching Learning Strategies

2. Lectures using multimedia and whiteboard
3. Interactive discussions and exercises
4. Case studies and simulations

5. Group projects and presentations

Assignments: Types and Number with Calendar

Read and understand subject related Research Papers, assigned problems and/or case studies; and writing report(s) or presentation

Assessment

Sr. No.	Elements	Weightage	Details
1.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
2.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
3.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

Programme	BSQPM	Course Code	INT-302	Credit Hours	3
Course Title	Industrial psychology				
Course Introduction					
The course is designed to give students a comprehensive overview of how psychological principles apply to the workplace. Students will explore various I/O psychology studies and theories that reveal insights into employee behavior, motivation, and organizational dynamics.					
Learning Outcomes					
On the completion of the course, the students will: 10. Understanding Human Behavior in the Workplace. 11. Explore foundational concepts in psychology that explain how individuals behave in organizational settings. 12. Examine factors influencing motivation, job satisfaction, and employee engagement. 13. Diagnosing Organizational Problems: Learn to identify and assess various issues affecting employee performance and well-being. 14. Utilize psychological assessment tools and methodologies to diagnose workplace challenges. 15. Optimizing Human Resources 16. Discover strategies for enhancing employee productivity and organizational effectiveness. 17. Study best practices for recruitment, training, performance evaluation, and employee development.					
Course Content				Assignments/Readings	
Week 1	Introduction to Industrial and Organizational Psychology – Nature, scope, and importance of Industrial Psychology in modern organizations.			Reading: Textbook Chapter 1 – “Introduction to I/O Psychology.” Assignment 1: Short essay on the role of Industrial Psychology in improving workplace performance.	
Week 2	Background and Importance of Industrial Psychology – Historical development, key areas, and applications in business and industry.			Reading: Chapter 2 – “Evolution and Functions of Industrial Psychology.”	
Week 3	Organizational Dynamics – Understanding organizational culture, structure, and human behavior in organizations.			Reading: Chapter 3 – “Organizational Dynamics.” Class Discussion: Examples of organizational culture in local companies.	
Week 4	Job Analysis and Evaluation – Job design, job description, job specification, and methods of job evaluation.			Reading: Chapter 4 – “Job Analysis and Evaluation.” Assignment 2: Conduct a basic job analysis for a selected position.	

Week 5	Legal Issues in Employee Selection – Equal employment opportunity, discrimination laws, and fair selection practices.	Reading: Chapter 5 – “Legal and Ethical Issues in Employment.” Assignment 3: Prepare a report on fair hiring practices.
Week 6	Personnel, Structure, and Strategy – Linking human resource systems with organizational goals and strategic planning.	Reading: Chapter 6 – “HR Systems and Organizational Strategy.”
Week 7	Evaluating Employee Performance – Methods of performance appraisal and feedback systems.	Reading: Chapter 7 – “Employee Evaluation.” Assignment 4: Design a performance appraisal form for a small business.
Week 8	Designing and Evaluating Training Systems – Training needs analysis, methods, and effectiveness evaluation.	Reading: Chapter 8 – “Training and Development.” Assignment 5: Create a training plan for new employees.
Week 9	Employee Motivation – Major motivation theories (Maslow, Herzberg, Expectancy Theory) and applications in the workplace.	Reading: Chapter 9 – “Motivation at Work.” Class Activity: Analyze motivation factors in a real organization.
Week 10	Employee Satisfaction and Commitment – Measuring and improving job satisfaction and employee engagement.	Reading: Chapter 10 – “Job Satisfaction and Organizational Commitment.” Assignment 6: Survey employee satisfaction in a local organization.
Week 11	Leadership – Theories of leadership, leadership styles, and their effects on employee performance.	Reading: Chapter 11 – “Leadership in Organizations.” Assignment 7: Analyze the leadership style of a known business leader.
Week 12	Organizational Communication – Importance, process, and barriers to effective communication.	Reading: Chapter 12 – “Workplace Communication.” Group Activity: Role-play exercise on improving communication.
Week 13	Group Behavior, Teams, and Conflict – Group formation, teamwork, causes of conflict, and conflict management techniques.	Reading: Chapter 13 – “Group Dynamics and Conflict.”

		Assignment 8: Case study on team conflict resolution.
Week 14	Stress Management – Causes and effects of occupational stress, coping strategies, and promoting work-life balance.	Reading: Chapter 14 – “Stress and Well-being at Work.” Assignment 9: Prepare a stress management plan for employees.
Week 15	Review and Integration – Overview of psychological principles applied in organizations; linking individual and organizational success.	Group Presentation: Application of Industrial Psychology concepts in a real organization.
Week 16	Final Evaluation and Course Summary – Course reflection and comprehensive assessment.	Final Exam / Project Report Submission.
Textbooks and Reading Material		
Main Textbook: 1. Michael G. Aamodt, <i>Industrial/Organizational Psychology: An Applied Approach</i>, Radford University and DCI Consulting, Latest Edition. 2. <i>Work Psychology: Understanding Human Behaviour in the Workplace</i> – John Arnold et al., Latest Edition, Pearson Education. Suggested Readings: 1. <i>Industrial and Organizational Psychology</i> – Paul E. Spector, Latest Edition. 2. <i>Psychology and Work Today</i> – Duane Schultz & Sydney Ellen Schultz, Latest Edition. 3. <i>An Introduction to Work and Organizational Psychology</i> – Nik Chmiel, Wiley-Blackwell. 4. <i>Selected journal articles and case studies provided by the instructor.</i>		
Teaching Learning Strategies		
9. Lectures using multimedia and whiteboard 10. Interactive discussions and exercises 11. Case studies and simulations 12. Group Projects and Presentations		
Assignments: Types and Number with Calendar		
20. Assignment 1 (Week 1): Essay on the role of Industrial Psychology in improving workplace performance. 21. Assignment 2 (Week 4): Conduct a job analysis and prepare a job description. 22. Assignment 3 (Week 5): Report on fair and legal employee selection practices. 23. Assignment 4 (Week 7): Design a performance appraisal system for an organization. 24. Assignment 5 (Week 8): Develop a training program for new employees. 25. Assignment 6 (Week 10): Employee satisfaction survey and analysis report. 26. Assignment 7 (Week 11): Analyze a leadership style using a real-world example. 27. Assignment 8 (Week 13): Case study on team conflict and resolution. 28. Assignment 9 (Week 14): Develop a stress management and wellness plan.		
Assessment		

Sr. No.	Elements	Weightage	Details
16.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
17.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
18.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

Program	BSQPM	Course Code	QPM-314	Credit Hours	2
Course Title	Python for Data Analysis				
Course Introduction					
This course introduces Python as a practical tool for data analysis and data science. Students progress from Python programming basics to the core analytics stack: NumPy and pandas for data manipulation, Matplotlib and Seaborn for visualization, and scikit-learn for introductory modeling. Emphasis is on hands-on skills—reading and cleaning real datasets, transforming data, visualizing trends, and running simple statistical and machine learning analyses—culminating in a reproducible, notebook-based project.					
Learning Outcomes					
On completion of the course, students will be able to:					
1. Write and debug basic Python programs using variables, core data types, lists, dictionaries, loops, conditionals, and functions to automate simple data tasks. 2. Manipulate and analyze data with pandas and NumPy by importing CSV/Excel/JSON, cleaning (handling missing values, filtering, merging), and computing descriptive statistics with arrays and DataFrames. 3. Visualize data effectively by creating line, bar, histogram, scatter, and box plots with Matplotlib/Seaborn and tailoring visuals for clarity and impact. 4. Apply basic analytical and machine learning techniques by running correlations and group comparisons, and fitting simple models (linear regression, logistic regression, k-means clustering) with scikit-learn, interpreting results in context. 5. Develop reproducible analysis workflows by writing clear, well-documented Jupyter Notebooks that combine code, Markdown, and results into concise, stakeholder-ready reports.					
Course Content				Assignments/Readings	
Week 1	Unit I: Intro to Python & Jupyter : Anaconda setup; notebooks (cells, code vs. Markdown); “Hello, World” and arithmetic. Unit II: Python Basics : Syntax & Data Types : Variables, ints/floats/strings/bools, print, indentation.			Reading: McKinney (Ch. 2, language basics to data structures); VanderPlas (Ch. 1 on IPython/Jupyter). Assignment 1: Setup & notebook with greeting + basic calculations (due Week 1).	
Week 2	Unit III: Control Flow & Functions : if/elif/else; for/while; defining functions (params/returns). Unit IV: Python Data Structures : Lists, tuples, sets, dicts; slicing; iterating key–value pairs; when to use each.			Reading: McKinney (Ch. 2 remainder); VanderPlas (Ch. 2 intro to NumPy context). Lab: Word-count with loops + dicts. Assignment 2: Python basics exercises (due Week 3).	
Week 3	Unit V: NumPy : Arrays vs. lists; creation (array, arange, linspace); indexing/slicing/reshape; ufuncs and axis reductions. Unit VI: pandas I : Series & DataFrame : Create from dict/CSV; head(), info(), describe(), selection with labels/iloc.			Reading: McKinney (Ch. 4 NumPy; Ch. 5 pandas intro up to indexing). Assignment 2 Due.	
Week 4	Unit VII: pandas II : Cleaning & Transforming : isna()/dropna()/fillna(), filter/sort, new columns, rename; merge/concat; groupby() + agg().			Reading: McKinney (Ch. 7 on missing data; Ch. 8 on join/combine/reshape). Lab:	

	Unit VIII: Data I/O : read_csv, read_excel, to_csv; encodings/delimiters; intro to JSON/APIs (optional).	Clean Titanic or sales dataset; group means by category. Assignment 3: Data wrangling task (assigned Week 4, due Week 6).
Week 5	Unit IX: Matplotlib : Pyplot anatomy (figure/axes), line/bar/scatter; titles/labels/legend; styling. Unit X: Seaborn : Hist/Dist, box/violin, scatter/regplot; themes; plot selection for the message.	Reading: VanderPlas (Ch. 4); Seaborn docs (intro + gallery). Lab: 3-plot mini-portfolio (Iris or similar).
Week 6	Unit XI: EDA Mini-Case : End-to-end EDA (clean → explore → visualize → insights). Unit XII: Basic Stats : Means/medians/quantiles, correlations; optional SciPy t-test or statsmodels demo.	Reading: McKinney (Ch. 10 recap on group ops); VanderPlas (Ch. 3 pandas manipulation). Assignment 3 Due.
Week 7	Unit XIII: Intro to scikit-learn : ML workflow: split, fit, predict, evaluate. Unit XIV: Linear Regression : LinearRegression on a simple dataset; coefficients/intercept, R ² ; plot fit.	Reading: VanderPlas (Ch. 5 ML intro); Géron (Ch. 4 excerpt). Lab: Fit/regress synthetic or simple real data.
Week 8	Midterm Exam : Practical + short-answer (Python → pandas → viz → basic stats).	:
Week 9	Unit XV: Classification & Evaluation : Logistic regression or DecisionTree (Iris/Titanic); preprocessing basics; accuracy/confusion matrix. Unit XVI: Clustering (k-means) : Choose k (elbow concept); interpret clusters; visualize.	Reading: VanderPlas (Ch. 5 sections on classification/k-means); Géron (Ch. 3 intro). Assignment 4: Basic modeling (assigned Week 9, due Week 11).
Week 10	Unit XVII: Time Series & Dates : Parse dates (parse_dates), datetime index, resample/rolling; time-series plots. Unit XVIII: Text Basics : Simple cleaning (lowercase/punct), regex, word counts (collections.Counter).	Reading: McKinney (Ch. 11 time series basics); short text-processing note (provided). Lab: Resample a time series + mini word-frequency task.
Week 11	Unit XIX: Communicating with Notebooks : Story structure; Markdown/reporting; tidy outputs. Unit XX: Collaboration & Reproducibility : Seeds, environment capture, brief Git/GitHub/Colab.	Reading: VanderPlas (Jupyter usage tips); article on sharing notebooks (provided). Assignment 4 Due.
Week 12	Unit XXI: Project Work Session : Start final project; instructor support. Unit XXII: Troubleshooting & Advanced Tips : Debugging, list comprehensions, doc reading, Q&A.	Reading: : Assignment 5: Project proposal (due Week 12/13).
Week 13	Unit XXIII: Project Presentations (Part 1) : Short talks with notebook demos. Unit XXIV: Special Topics (Overview) : Quick tour: TensorFlow/PyTorch, Plotly, PySpark (as time allows).	Reading: Optional article on current Python DS trends. Proposal due if not yet submitted.
Week 14	Unit XXV: Project Presentations (Part 2) & Review : Remaining talks; course synthesis; recap quiz/game.	Reading: : Assignment 6: Final project report/code due Week 14 or 15.
Week 15	Final Exam or Capstone Submission : Practical or take-home aligned with outcomes; spillover presentations if needed.	:

Textbooks and Reading Material			
1. Textbooks i. McKinney, W. <i>Python for Data Analysis</i> (Latest ed.). O'Reilly. ii. VanderPlas, J. <i>Python Data Science Handbook</i> . O'Reilly. 2. Suggested Readings i. Sweigart, A. <i>Automate the Boring Stuff with Python</i> (2nd ed.). No Starch. ii. Géron, A. <i>Hands-On Machine Learning with Scikit-Learn, Keras, and TensorFlow</i> (2nd ed.). O'Reilly. iii. Grus, J. <i>Data Science from Scratch</i> (2nd ed.). O'Reilly.			
Teaching Learning Strategies			
9. Lectures using multimedia and a whiteboard 10. Interactive discussions and exercises 11. Case studies and simulations 12. Group Projects and Presentations			
1. Assignments: Types and Number with Calendar			
1. Assignment 1 (Week 1): Environment setup & syntax : Jupyter notebook with basic operations. 2. Assignment 2 (Week 2–3): Core Python exercises : loops, conditionals, lists/dicts, small text tasks (due Week 3). 3. Assignment 3 (Week 4–6): Data wrangling with pandas : clean a raw CSV and answer guided questions (due Week 6). 4. Assignment 4 (Week 7–11): Analysis & modeling : EDA plus a simple regression or classifier with interpretation (due Week 11). 5. Assignment 5 (Week 12–13): Final project proposal : dataset, questions, planned methods (due Week 12/13). 6. Assignment 6 (Week 13–15): Final project : end-to-end notebook report and in-class presentation (presentations Weeks 13–14; final submission by Week 14/15).			
Assessment			
Sr. No.	Elements	Weightage	Details
1.	Midterm Assessment	35%	Written Assessment at the mid:point of the semester.
2.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands:on:activities, short tests, projects, practical, reflections, readings, quizzes etc.
3.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

Program	BSQPM	Course Code	QPM-315	Credit Hours	3
Course Title	Production Planning & Control				
Course Introduction					
Production Planning and Control (PPC) is essential for ensuring efficient manufacturing operations. This course provides students with a fundamental understanding of PPC principles, including demand forecasting, capacity planning, scheduling, and inventory management. Students will learn how to align production plans with organizational goals and customer needs, exploring strategies such as Just-In-Time (JIT) and lean manufacturing. Through practical examples and case studies, participants will develop skills in creating effective production plans and utilizing control systems to enhance operational efficiency.					
Learning Outcomes					
After completing this course, the student will be able to:					
1. Understand the role of production planning and control in achieving operational efficiency. 2. Apply basic forecasting, capacity planning, and scheduling techniques to match demand and resources. 3. Develop and manage production plans, material requirements, and work schedules. 4. Explain the linkage of PPC with quality, productivity, and performance management. 4. Analyze real-world problems in manufacturing and service operations and propose effective planning and control solutions.					
Course Content				Assignments/Readings	
Week 1	Unit I: Introduction to Production Planning & Control (PPC) 1.1 Objectives, scope, and functions of PPC 1.2 Relationship of PPC with other business functions 1.3 Role of PPC in manufacturing and service industries			Reading: Arnold et al., Introduction to Materials Management, Ch. 1–2 Assignment 1: Write a short note on how PPC contributes to efficiency and competitiveness in operations	
Week 2	Unit II: Demand Management & Forecasting – I 2.1 Concepts of demand management 2.2 Types of demand and forecasting horizons 2.3 Forecasting process and data requirements			Reading: Stevenson, Operations Management, Ch. 3	
Week 3	Unit II: Demand Management & Forecasting – II 2.4 Forecasting techniques: qualitative (Delphi, market surveys) and quantitative (moving average, exponential smoothing) 2.5 Measuring forecast accuracy			Reading: Stevenson, Ch. 4 Assignment 2: Apply moving average and exponential smoothing methods to the provided data	
Week 4	Unit III: Aggregate Planning 3.1 Objectives and importance of aggregate planning 3.2 Aggregate planning strategies: chase, level, hybrid 3.3 Aggregate planning in manufacturing and services			Reading: Vollmann et al., Manufacturing Planning and Control, Ch. 2–3 Exercise: Develop a simple aggregate plan for a given scenario	
Week 5	Unit IV: Capacity Planning – I 4.1 Levels of capacity planning (long-term, medium-term, short-term) 4.2 Capacity measurement, utilization, and efficiency			Reading: Chase et al., Operations Management for Competitive Advantage, Ch. 4 Assignment 3: Calculate capacity utilization and efficiency for a sample production process	

Week 6	Unit IV: Capacity Planning – II 4.3 Capacity requirements planning (CRP) 4.4 Rough-cut capacity planning and resource constraints	Reading: Vollmann et al., Ch. 5 Class Activity: Create a capacity requirements chart using the provided data
Week 7	Unit V: Master Production Scheduling (MPS) 5.1 Purpose and structure of MPS 5.2 Time fences and planning horizons 5.3 Linking MPS with demand forecasts	Reading: Vollmann et al., Ch. 6 Exercise: Prepare a simple MPS from the given demand data
Week 8	Midterm Exam	Midterm Exam
Week 9	Unit VI: Material Requirements Planning (MRP) 6.1 MRP principles and logic 6.2 Bill of Materials (BOM) explosion 6.3 Lot sizing, lead times, and inventory control	Reading: Arnold et al., Ch. 6–7 Assignment 4: Perform MRP calculations for a product using BOM and lead time data
Week 10	Unit VII: Production Activity Control (PAC) 7.1 Functions: dispatching, sequencing, monitoring 7.2 Shop-floor control and order release 7.3 Feedback and performance reporting	Reading: Vollmann et al., Ch. 8 Exercise: Sequence orders using priority rules (FCFS, SPT, EDD)
Week 11	Unit VIII: Inventory Control in PPC 8.1 Role and types of inventory 8.2 EOQ model, safety stock, reorder point 8.3 ABC analysis and cycle counting	Reading: Silver et al., Inventory and Production Management in Supply Chains, Ch. 2–3 Class Activity: Compute EOQ and reorder points for given data
Week 12	Unit IX: Scheduling & Loading 9.1 Gantt charts and job sequencing 9.2 Loading in job shops and flow shops 9.3 Bottleneck management	Reading: Stevenson, Ch. 15 Assignment 5: Develop a Gantt chart for a simple production schedule
Week 13	Unit X: Just-in-Time (JIT) & PPC Integration 10.1 JIT principles and pull systems 10.2 Kanban systems 10.3 Small lot production and lead time reduction	Reading: Arnold et al., Ch. 10 Exercise: Design a simple Kanban system linked to PPC
Week 14	Unit XI: Linkage to Performance Management 11.1 PPC and performance indicators (delivery, cycle time, utilization) 11.2 Cost reduction and customer satisfaction through PPC	Reading: Stevenson, Ch. 17 Class Activity: Identify KPIs for a given manufacturing process
Week 15	Unit XII: Integration with Lean & ERP Systems 12.1 Role of PPC in Lean environments 12.2 ERP and digital integration of PPC 12.3 Sustainable and agile PPC practices	Reading: Vollmann et al., Ch. 12 Group Discussion: Benefits of ERP-based PPC implementation
Week 16	Final Exam	Final Exam

Textbooks and Reading Material

1. Textbooks.
 - i. Arnold, J., Chapman, S., & Clive, L. Introduction to Materials Management. Latest Edition.
 - ii. Vollmann, T.E., Berry, W.L., Whybark, D.C., & Jacobs, F.R. Manufacturing Planning and Control for Supply Chain Management. McGraw-Hill.
 - iii. Silver, E., Pyke, D.F., & Thomas, D.J. Inventory and Production Management in Supply Chains. Latest Edition.
 - iv. Stevenson, W.J. Operations Management. McGraw-Hill.

v. Chase, R.B., Jacobs, F.R., & Aquilano, N.J. <i>Operations Management for Competitive Advantage</i> . Latest Edition.			
2. Suggested Readings			
i. Nahmias, S., & Olsen, T. <i>Production and Operations Analysis</i> . McGraw-Hill. ii. Hopp, W.J., & Spearman, M.L. <i>Factory Physics</i> . McGraw-Hill. iii. Heizer, J., Render, B., & Munson, C. <i>Operations Management: Sustainability and Supply Chain Management</i> . Pearson.			
Teaching Learning Strategies			
1. Lectures using multimedia and a whiteboard 2. Case studies and simulation exercises 3. Hands-on Excel/ERP-based exercises 4. Group projects and presentations			
Assignments: Types and Number with Calendar			
1. Assignment 1 (Week 1): Report on the importance of PPC in modern manufacturing 2. Assignment 2 (Week 4): Aggregate production plan development 3. Assignment 3 (Week 7): MRP calculation for a multi-level BOM 4. Assignment 4 (Week 11): Kanban system design exercise 5. Assignment 5 (Week 14): Scheduling and sequencing assignment			
Assessment			
Sr. No.	Elements	Weightage	Details
1.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
2.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on activities, short tests, projects, practicals, reflections, readings, quizzes, etc.
3.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course, the teacher may assess their students based on term paper, research proposal development, field work and report writing, etc.

Program	BSQPM	Course Code	QPM-316	Credit Hours	3
Course Title	Six Sigma Performance Improvement				
Course Introduction					
Six Sigma is a data-driven and systematic methodology for achieving operational excellence through process improvement and variability reduction. Rooted in statistical thinking and quality management principles, Six Sigma equips organizations to enhance customer satisfaction, minimize defects, and improve profitability. This course provides an in-depth understanding of the Six Sigma philosophy, the DMAIC (Define–Measure–Analyze–Improve–Control) framework, and the integration of Lean tools to optimize performance across manufacturing and service processes.					
Learning Outcomes					
On the completion of the course, the students will be able to: 1. Explain the core philosophy, principles, and evolution of Six Sigma. 2. Apply the DMAIC framework to diagnose, analyze, and solve process inefficiencies. 3. Use statistical and Lean tools to identify root causes of variation and defects. 4. Design and implement sustainable process improvement initiatives. 5. Develop control plans and performance dashboards to sustain process gains. 6. Integrate Six Sigma and Lean principles to drive continuous improvement and organizational excellence.					
Course Content				Assignments/Readings	
Week 1	Unit I: Introduction to Six Sigma 1.1 Definition, history, and evolution of Six Sigma 1.2 Key concepts: variation, defects, sigma levels, DPMO 1.3 Six Sigma organizational roles and certifications			Reading: Pyzdek & Keller (Ch. 1–2)	
Week 2	Unit II: Six Sigma Fundamentals and Project Selection 2.1 Business process management and Six Sigma alignment with strategy 2.2 Project selection criteria and financial linkage (CTQ, ROI) 2.3 Six Sigma project charter			Reading: Pyzdek & Keller (Ch. 3–4) Assignment 1: Develop a Six Sigma project charter for a selected process	
Week 3	Unit III: Define Phase 3.1 Understanding the Voice of the Customer (VOC) 3.2 SIPOC diagrams and process scoping 3.3 Problem definition and goal setting			Reading: Pyzdek & Keller (Ch. 5) Exercise: Develop SIPOC and VOC analysis for a service process	
Week 4	Unit IV: Measure Phase I 4.1 Process mapping and identification of Key Process Input Variables (KPIVs) 4.2 Data collection planning and measurement system analysis			Reading: Pyzdek & Keller (Ch. 6–7) Assignment 2: Design a data collection plan and operational definitions	
Week 5	Continuation of Measure Phase II 4.3 Process capability analysis (Cp, Cpk) 4.4 Baseline performance measurement			Reading: Pyzdek & Keller (Ch. 8) Case exercise: Capability analysis for a given dataset	
Week 6	Unit V: Analyze Phase I 5.1 Root cause identification tools (Fishbone, 5 Whys, Pareto Analysis) 5.2 Graphical data analysis and hypothesis formulation			Reading: Pyzdek & Keller (Ch. 9) Assignment 3: Perform a Pareto analysis for process defects	

Week 7	Continuation of Analyze Phase II 5.3 Statistical tools for analysis – Correlation, Regression, and Hypothesis Testing 5.4 Identifying key sources of variation	Reading: Pyzdek & Keller (Ch. 10–11) Practical: Hypothesis testing using sample data
Week 8	Midterm Exam	Midterm Exam
Week 9	Unit VI: Improve Phase I 6.1 Generating improvement ideas 6.2 Lean tools for waste reduction (5S, Kaizen, Value Stream Mapping)	Reading: Pyzdek & Keller (Ch. 12) Assignment 4: Identify non-value-added activities using VSM
Week 10	Continuation of Improve Phase II 6.3 Design of Experiments (DOE) basics 6.4 Mistake-proofing (Poka-Yoke) techniques	Reading: Pyzdek & Keller (Ch. 13) Class activity: Develop Poka-Yoke ideas for a production or service process
Week 11	Unit VII: Control Phase I 7.1 Developing control plans 7.2 Statistical Process Control (SPC) and control charts	Reading: Pyzdek & Keller (Ch. 14–15) Assignment 5: Create a control chart for a simulated process
Week 12	Continuation of Control Phase II 7.3 Documentation and process standardization 7.4 Project closure and knowledge sharing	Reading: Pyzdek & Keller (Ch. 16)
Week 13	Unit VIII: Lean Six Sigma Integration 8.1 Synergy between Lean and Six Sigma 8.2 Waste elimination and flow improvement 8.3 Value Stream Mapping revisited	Reading: Pyzdek & Keller (Ch. 17) Case study: Lean Six Sigma in textile or service sector
Week 14	Unit IX: Statistical Tools and Software in Six Sigma 9.1 Use of Minitab/Excel for data analysis 9.2 Interpretation of output for decision-making	Reading: Pyzdek & Keller (Ch. 18) Lab exercise: Analyze process data using statistical software
Week 15	Unit X: Six Sigma Implementation and Organizational Impact 10.1 Critical success factors for Six Sigma deployment 10.2 Linking Six Sigma to sustainability and continuous improvement 10.3 Case study presentations	Reading: Case Handout Group Presentation: Six Sigma project proposal and improvement plan
Week 16	Final Exam	Final Exam
Textbooks and Reading Material		
1. Textbooks. i. Pyzdek, T., & Keller, P. A. (Latest Edition). <i>The Six Sigma Handbook: A Complete Guide for Green Belts, Black Belts, and Managers at All Levels</i>. McGraw-Hill Education. 2. Suggested Readings i. Montgomery, D. C. (Latest Edition). <i>Introduction to Statistical Quality Control</i>. Wiley. ii. George, M. L. (Latest Edition). <i>Lean Six Sigma for Service</i>. McGraw-Hill. iii. Evans, J. R., & Lindsay, W. M. (Latest Edition). <i>Managing for Quality and Performance Excellence</i>. Cengage Learning.		
Teaching Learning Strategies		
1. Lectures using multimedia and a whiteboard 2. Class discussions and hands-on problem-solving sessions		

3. Case studies and process improvement simulations			
4. Group projects and presentations using real-world data			
Assignments: Types and Number with Calendar			
1. Assignment 1 (Week 2): Six Sigma Project Charter			
2. Assignment 2 (Week 4): Data Collection Plan and Operational Definitions			
3. Assignment 3 (Week 6): Pareto Analysis			
4. Assignment 4 (Week 9): Value Stream Mapping Exercise			
5. Assignment 5 (Week 11): Control Chart and Process Monitoring Plan			
Assessment			
Sr. No.	Elements	Weightage	Details
1.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
2.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
3.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

Program	BSQPM	Course Code	QPM-317	Credit Hours	2
Course Title	Business Ethics				
Course Introduction					
This course examines ethical principles and challenges in business. It builds a foundation in ethical theories and a practical framework for managerial decision-making. Students explore corporate social responsibility, stakeholder management, workplace issues such as discrimination and harassment, and global topics including corruption and fair trade. Through case studies of dilemmas and scandals, students analyze situations from multiple perspectives and propose sound solutions. Emphasis is on moral reasoning that balances profitability with integrity, fairness, and accountability.					
Learning Outcomes					
On completion of the course, students will be able to:					
1. Explain major ethical frameworks such as utilitarianism, deontology, virtue ethics, and justice, and apply them to business decisions and policies. 2. Identify ethical issues and stakeholders in business scenarios, use structured decision models, and recommend actions aligned with ethical principles and corporate values. 3. Discuss common ethical issues in business, including conflicts of interest, insider trading, discrimination, product safety, environmental sustainability, and corruption, and propose prevention and resolution strategies. 4. Articulate the importance of corporate social responsibility and stakeholder engagement, evaluating how organizations can operate responsibly for long-term success. 5. Describe the role of leadership in fostering ethical culture through codes of ethics, training, audits, and role modeling, and demonstrate readiness to lead with integrity.					
Course Content				Assignments/Readings	
Week 1	Unit I: Introduction to Business Ethics: Definitions, legal vs. ethical, trust and reputation. Moral philosophy basics: values, morals, dilemmas. Unit II: Theories of Ethics (Part 1): Utilitarianism; Deontology and Kantian principles; applied mini-cases.			Reading: Ferrell et al., Ch. 1; Velasquez, Ch. 2 (utilitarianism, Kant). Assignment 1: Reflective essay on a personal or observed dilemma (due Week 2).	
Week 2	Unit III: Theories of Ethics (Part 2): Virtue ethics; Justice and Fairness (Rawls); Relativism vs. Universalism; multi-lens case analysis. Unit IV: Ethical Decision-Making Framework: Step-by-step model, role of culture, personal values, pressures.			Reading: Ferrell et al., Ch. 5; Treviño & Nelson, Ch. 1 (theory overview). Case: “A Gift from a Supplier.” Assignment 1 due.	
Week 3	Unit V: Corporate Governance and Ethical Leadership: Boards, oversight, audits, tone at the top; governance failures (Enron, Wells Fargo). Unit VI: Corporate Culture and Codes of Ethics: Values, codes, training, whistleblowing.			Reading: Ferrell et al., Ch. 4; Treviño & Nelson, Ch. 6. Assignment 2: Case analysis on Enron or similar (assigned Week 3, due Week 5).	
Week 4	Unit VII: Corporate Social Responsibility (CSR): Definitions, Carroll’s pyramid, shareholder vs. stakeholder views, examples. Unit VIII: Stakeholder Management: Identifying stakeholders, mapping interests, balancing claims, conflict examples.			Reading: Velasquez, Ch. 3; Crane & Matten, Ch. 2. Activity: Stakeholder debate for a plant-siting scenario.	

Week 5	Unit IX: Employee Rights and Workplace Ethics: Discrimination, harassment, privacy, health and safety, whistleblowing duties. Unit X: Ethics in HRM: Fair pay, layoffs, labor rights; case on layoffs or discrimination.	Reading: Ferrell et al., Ch. 7; Treviño & Nelson, Ch. 3 (selected). Assignment 2 due. Assignment 3: Draft a one-page code section on either discrimination/harassment or technology use/privacy (assigned Week 5, due Wk 7).
Week 6	Unit XI: Marketing and Consumer Ethics: Truth in advertising, product safety, pricing, controversial products, data privacy; recall case comparisons. Unit XII: Finance and Accounting Ethics: Reporting accuracy, insider trading, conflicts of interest; regulations and professional codes.	Reading: Velasquez, Ch. 6 and Ch. 7 excerpts; Ferrell et al., Ch. 11. Case: Ford Pinto product safety analysis.
Week 7	Unit XIII: Environmental Sustainability and Ethics: Pollution control, resource conservation, climate responsibility, triple bottom line, greenwashing. Unit XIV: Global Business Ethics: Supply-chain labor standards, bribery and corruption, human rights, fair trade; tools for responsible global operations.	Reading: Ferrell et al., Ch. 10; Crane & Matten, Ch. 9. Assignment 3 due. Assignment 4: Research paper topic selection and approval (assigned Wk 7, due Wk 13).
Week 8	Midterm Exam: Units I–XIV; theory and short case analyses.	—
Week 9	Unit XV: Ethical Issues in the Digital Age: Data privacy, AI bias, automation and jobs, IP, social media conduct; platform case studies. Unit XVI: Whistleblowing and Ethical Dilemmas: Conditions, protections, notable cases; role-play exercise.	Reading: Velasquez, Ch. 4; Ferrell et al., Ch. 3 (tech and privacy). Case: Facebook and Cambridge Analytica.
Week 10	Unit XVII: Building an Ethical Organization: Codes, training, measurement, ethics officers, audits; exemplars of strong cultures. Unit XVIII: Social Entrepreneurship and Ethical Innovation: Mission-driven firms, B-Corps, examples of purpose-led strategy.	Reading: Treviño & Nelson, Ch. 8; Crane & Matten, Ch. 6 (selected). Assignment 5: Ethics program proposal (assigned Wk 10, due Wk 14).
Week 11	Unit XIX: Case Studies in Depth: Student presentations or instructor-led deep dives (Nike supply chain, Boeing 737 Max, Theranos). Unit XX: Ethical Challenges Ahead: Climate, AI governance, transparency expectations; lessons from student research.	Reading: Case-specific materials.
Week 12	Unit XXI: Review and Synthesis: Key concepts, ethical “Jeopardy,” group quizzes; reflection on growth in reasoning. Unit XXII: Exam Preparation: Format, sample prompts, Q&A.	Reading: Review chapter summaries and feedback. Assignment 4 due Week 13.
Week 13	Student Presentations and Course Wrap-up: Share research insights, peer learning, closing discussion.	Assignment 5 due Week 14.
Week 14	Student Presentations and Course Wrap-up (continued): Share research insights, peer learning, closing discussion.	--

Week 15	Final Exam: Comprehensive case-based assessment emphasizing application of frameworks.	—	
Textbooks and Reading Material			
1. Textbooks i. Ferrell, O. C., Fraedrich, J., & Ferrell, L. <i>Business Ethics: Ethical Decision Making & Cases</i>. Cengage. ii. Velasquez, M. G. <i>Business Ethics: Concepts and Cases</i>. Pearson. 2. Suggested Readings i. Treviño, L. K., & Nelson, K. A. <i>Managing Business Ethics</i>. Wiley. ii. Crane, A., & Matten, D. <i>Business Ethics: Managing Corporate Citizenship and Sustainability in the Age of Globalization</i>. Oxford. iii. Hartman, L., DesJardins, J., & MacDonald, C. <i>Business Ethics: Decision-Making for Personal Integrity & Social Responsibility</i>. McGraw-Hill. iv. Selected case studies and articles provided during the course.			
Teaching Learning Strategies			
1. Lectures using multimedia and a whiteboard 2. Interactive discussions and exercises 3. Case studies and simulations 4. Group Projects and Presentations			
Assignments: Types and Number with Calendar			
1. Assignment 1 (Week 1–2): Personal ethical dilemma reflection, one page, with proposed resolution. 2. Assignment 2 (Week 3–5): Case analysis report, 2–3 pages, applying at least two ethical theories and stakeholder analysis. 3. Assignment 3 (Week 5–7): Code of ethics section, one page, on either discrimination and harassment or technology use and privacy. 4. Assignment 4 (Week 7–13): Research paper on a contemporary issue or scandal, 4–6 pages, with proper citations and theory application. 5. Assignment 5 (Week 10–14): Group ethics program proposal, presentation plus 3–5 page summary or slide deck with notes.			
Assessment			
Sr. No.	Elements	Weightage	Details
1.	Midterm Assessment	35%	Written Assessment at the mid:point of the semester.
2.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands:on:activities, short tests, projects, practical, reflections, readings, quizzes etc.
3.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

Semester VI

Programme	BSQPM	Course Code	INT-303	Credit Hours	3
Course Title	Sociology				
Course Introduction					
The course is designed to give students a comprehensive overview of how psychological principles apply to the workplace. Students will explore various I/O psychology studies and theories that reveal insights into employee behavior, motivation, and organizational dynamics.					
Learning Outcomes					
On the completion of the course, the students will:					
1. Explain the origin, scope, and major theoretical perspectives of sociology.					
2. Differentiate sociology from related social sciences such as psychology, anthropology, and economics.					
3. Analyze how culture, socialization, and social structures influence individual and collective behavior.					
4. Evaluate social interaction, group dynamics, and organizational behavior using sociological principles.					
5. Interpret deviance, social control, and crime from a sociological viewpoint.					
Course Content			Assignments/Readings		
Week 1	Introduction to Sociology – Definition, nature, and importance of sociology; relationship with other social sciences (psychology, anthropology, economics, and political science).		Reading: Dasgupta & Saha, <i>An Introduction to Sociology</i> (Ch. 1). Assignment 1: Write a short note on “How Sociology Differs from Other Social Sciences.”		
Week 2	Common Sense and Sociology – Differences between sociological knowledge and everyday reasoning; key sociological terms: social problem, sociological issue, stereotype.		Reading: Giddens, <i>Introduction to Sociology</i> (Ch. 2).		
Week 3	Origin and Development of Sociology – Historical emergence of sociology; contributions of Auguste Comte, Karl Marx, Emile Durkheim, and Max Weber.		Reading: Macionis, <i>Sociology</i> (Ch. 3). Assignment 2: Prepare a timeline of major contributors to sociology.		
Week 4	Sociological Perspectives – Overview of major theoretical frameworks: Structural Functionalism, Conflict Theory, Symbolic Interactionism, and Feminism.		Reading: Anderson & Taylor, <i>Sociology: The Essentials</i> (Ch. 4). Class Discussion: Compare Structural Functionalism and Conflict Theory.		
Week 5	Culture – Meaning and importance of culture; elements of culture; cultural diversity, subcultures, and cultural change.		Reading: Brown, <i>Sociology</i> (Ch. 5). Assignment 3: Write a		

		report on cultural diversity in Pakistan.
Week 6	Socialization – Definition, process, and agents of socialization (family, school, peers, media); theories by Cooley and Mead.	Reading: Macionis, <i>Sociology</i> (Ch. 6). Assignment 4: Interview a family member about key influences in their socialization.
Week 7	Socialization through the Life Course – Stages of life and changing roles; resocialization and lifelong learning.	Reading: Tischler, <i>Introduction to Sociology</i> (Ch. 7).
Week 8	Social Interaction – Meaning, types, and importance of social interaction; elements of social structure (status, role, role conflict, and role strain).	Reading: Anderson & Taylor (Ch. 8). Assignment 5: Observe and describe a workplace or classroom social structure.
Week 9	Theories of Social Interaction – Overview of Social Construction of Reality, Ethnomethodology, and Dramaturgy (Erving Goffman).	Reading: Giddens, <i>Introduction to Sociology</i> (Ch. 9).
Week 10	Groups and Organizations – Types of groups (primary, secondary, reference); leadership styles; studies on group behavior.	Reading: Dasgupta & Saha (Ch. 10). Assignment 6: Identify examples of different group types in daily life.
Week 11	Formal Organizations – Nature, functions, and types of formal organizations; bureaucracies and their characteristics (Max Weber’s model).	Reading: Macionis (Ch. 11).
Week 12	Organizational Behavior and Social Structure – Relationship between structure, strategy, and employee behavior.	Reading: Brown (Ch. 12). Class Discussion: Compare organizational hierarchies in business and education sectors.
Week 13	Deviance and Social Control – Definition of deviance; functions of deviance; mechanisms of social control; labeling theory.	Reading: Tischler (Ch. 13). Assignment 7: Write a short essay on “Is Deviance Always Negative?”
Week 14	Crime and Criminal Justice System – Types of crime, causes, and societal responses; overview of Pakistan’s criminal justice system.	Reading: Giddens (Ch. 14). Case Study: Analyze a local issue related to crime and social control.
Week 15	Review of Major Concepts – Integrating perspectives on culture, socialization, and structure; application of sociology to modern social issues.	Group Presentation: Apply sociological theories to a current social problem.
Week 16	Final Evaluation and Course Summary – Review and comprehensive assessment.	Final Exam / Project Report Submission.

Textbooks and Reading Material			
Main Textbook: 1. Dasgupta, S. & Saha, Paulomi (2012). <i>An Introduction to Sociology</i> . Pearson.			
Suggested Readings: 1. Anderson, Margaret & Howard F. Taylor (2001). <i>Sociology: The Essentials</i> . Wadsworth. 2. Brown, Ken (2004). <i>Sociology</i> . UK: Polity Press. 3. Giddens, Anthony (2002). <i>Introduction to Sociology</i> . UK: Polity Press. 4. Macionis, John J. (2006). <i>Sociology</i> , 10th ed. New Jersey: Prentice-Hall. 5. Tischler, Henry L. (2002). <i>Introduction to Sociology</i> , 7th ed. New York: Harcourt Press.			
Teaching Learning Strategies			
1. Lectures using multimedia and whiteboard 2. Interactive discussions and exercises 3. Case studies and simulations 4. Group Projects and Presentations			
Assignments: Types and Number with Calendar			
1. Assignment 1 (Week 1): Short note on differences between sociology and other social sciences. 2. Assignment 2 (Week 3): Timeline of major sociological thinkers. 3. Assignment 3 (Week 5): Report on cultural diversity in Pakistan. 4. Assignment 4 (Week 6): Interview report on socialization influences. 5. Assignment 5 (Week 8): Observation report on social structure in a workplace/class. 6. Assignment 6 (Week 10): Identification and description of group types. 7. Assignment 7 (Week 13): Essay on deviance and its societal role.			
Assessment			
Sr. No.	Elements	Weightage	Details
1.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
2.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
3.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

Programme	BSQPM	Course Code	INT-304	Credit Hours	3
Course Title	Critical Thinking				
Course Introduction					
Critical thinking is the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action.					
Learning Outcomes					
On the completion of the course, the students will: 1. Understand key concepts of critical thinking 2. Clarify the difference in cognition, reasoning and logics 3. Improve their decision making based on facts, assumptions, arguments etc. 4. Able to see a problem with a logical approach to find a quick solution 5. Understand the importance of bias in critical thinking 6. Apply Critical Thinking in practical situations					
Course Content				Assignments/Readings	
Week 1	Introduction to Critical Thinking — What is critical thinking? Importance and elements of reasoning.			Class Activity: Brainstorm examples of poor reasoning in daily life.	
Week 2	Barriers to Critical Thinking — Bias, stereotypes, emotions, and cultural influences.			Assignment 1: Reflection essay — “A decision I made without thinking critically.”	
Week 3	Arguments and Claims — Understanding premises, conclusions, and argument structures.			Assignment 2: Identify assumptions and hidden messages in a media article.	
Week 4	Evaluating Arguments — Strength, validity, and soundness.			In-class exercise: Evaluate short arguments for logic and evidence.	
Week 5	Common Logical Fallacies — Types and examples from real life.			Assignment 3: Find three fallacies from news or ads and explain them.	
Week 6	Reasoning and Evidence — Using data, examples, and analogies effectively			Activity: Evaluate the quality of evidence in an assigned text.	
Week 7	Analyzing Written and Spoken Arguments — Structure, tone, and credibility.			Assignment 4: Written analysis of a short article’s reasoning.	
Week 8	Critical Listening and Discussion Skills — Understanding others’ viewpoints.			Group Exercise: Discuss and critique opposing viewpoints respectfully	

Week 9	Debate and Persuasive Communication — Building and defending logical arguments.	Assignment 5: Participate in a class debate; submit reasoning summary.
Week 10	Problem-Solving and Decision-Making — Applying logical steps to real-world issues.	Assignment 6: Analyze a real-life problem using critical thinking steps.
Week 11	Critical Thinking and Creativity — Balancing logical and innovative thinking.	<i>Activity:</i> Brainstorm creative solutions to an ethical dilemma.
Week 12	Ethical Reasoning and Moral Thinking — Evaluating decisions through ethical frameworks.	Assignment 7: Essay on an ethical dilemma (use moral reasoning).
Week 13	Critical Thinking in Academic Research — Analyzing research logic and bias.	Assignment 8: Review and critique one academic article.
Week 14	Applying Critical Thinking in the Workplace and Society — Organizational and personal decision-making	<i>Case Discussion:</i> How poor reasoning affects workplace outcomes.
Week 15	Integration and Application — Synthesizing skills; reflective thinking.	Assignment 9: Develop and present your “Critical Thinking Portfolio.”
Week 16	Course Review and Final Evaluation — Summary and assessment.	Final Assessment: Written test / portfolio submission.

Textbooks and Reading Material

Main Textbook:

1. The Demon – Haunted World Ann Druyan 1995
2. Paul, Richard, and Linda Elder. *Critical Thinking: Tools for Taking Charge of Your Learning and Your Life*. Pearson, 2019.
3. Moore, Brooke Noel, and Richard Parker. *Critical Thinking*. McGraw-Hill Education, 12th Edition, 2020.
4. Browne, M. Neil, and Stuart M. Keeley. *Asking the Right Questions: A Guide to Critical Thinking*. Pearson, 2018.
5. Facione, Peter A. *Think Critically*. Pearson, 3rd Edition, 2016.
6. Bassham, Gregory et al. *Critical Thinking: A Student’s Introduction*. McGraw-Hill, 2018.

Suggested Readings:

1. **Halpern, Diane F. (2014).** *Thought and Knowledge: An Introduction to Critical Thinking*. Psychology Press.
Explores the psychology behind thinking, problem-solving, and decision-making.
2. **Lau, Joe Y. F. (2011).** *An Introduction to Critical Thinking and Creativity: Think More, Think Better*. Wiley.
Connects logical reasoning with creative thinking processes.
3. **Cottrell, Stella (2017).** *Critical Thinking Skills: Developing Effective Analysis and Argument*. Palgrave Macmillan.
A practical guide for improving analysis and writing skills in academic and professional settings.

4. **Nosich, Gerald M. (2011).** *Learning to Think Things Through: A Guide to Critical Thinking Across the Curriculum.* Pearson.
Teaches how to apply critical thinking to various academic disciplines.

Teaching Learning Strategies

1. Lectures using multimedia and whiteboard
2. Interactive discussions and exercises
3. Case studies and simulations
4. Group Projects and Presentations

Assignments: Types and Number with Calendar

1. Assignment 1 (Week 2): Reflection on Everyday Thinking
Write a short essay (300–400 words) describing a situation in your life where you made a decision without much thought. Re-evaluate it using critical thinking principles (observation, questioning, reasoning).
2. Assignment 2 (Week 3): Identifying Assumptions in Media
Select a news article or advertisement and list at least five assumptions or biases present in it. Explain how these affect the message’s credibility.
3. Assignment 3 (Week 5): Logical Fallacies Report
Find three examples of logical fallacies (from news, social media, or conversations). Identify each fallacy, define it, and explain how it weakens the argument.
4. Assignment 4 (Week 7): Argument Evaluation Exercise
Analyze a short written or spoken argument (provided by instructor). Identify its main claim, supporting reasons, evidence, and conclusion. Evaluate whether the reasoning is strong or weak.
5. Assignment 5 (Week 9): Debate Participation
Students form teams and engage in a classroom debate on a current social or ethical issue. Submit a one-page summary explaining your reasoning, evidence used, and lessons learned about critical thinking.
6. Assignment 6 (Week 10): Problem-Solving Case Study
Analyze a real-life organizational or community problem. Identify causes, stakeholders, and possible solutions using a structured problem-solving approach (Define–Analyze–Evaluate–Decide).
7. Assignment 7 (Week 12): Ethical Reasoning Essay
Write a 500-word essay analyzing an ethical dilemma (e.g., data privacy, workplace honesty, or environmental responsibility). Use moral reasoning frameworks (utilitarianism, rights, justice).
8. Assignment 8 (Week 14): Critical Thinking in Research
Review one academic article and evaluate the quality of its argumentation—clarity of thesis, use of evidence, logic, and objectivity. Submit a 2-page critique.
9. Assignment 9 (Week 15): Final Project – Applied Critical Thinking
Develop and present a Critical Thinking Portfolio that includes summaries of your best work, reflections on how your reasoning evolved during the semester, and how you plan to apply critical thinking in academic or professional life.

Assessment			
Sr. No.	Elements	Weightage	Details
19.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
20.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
21.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

Program	BSQPM	Course Code	QPM-318	Credit Hours	3
Course Title	Machine learning				
Course Introduction					
"Machine Learning" is the study of how computers can learn from data to make decisions or predictions without being explicitly programmed. In this course, we'll explore how machines recognize patterns, make recommendations, and improve over time. Topics include different learning methods, data handling, and model building.					
Learning Outcomes					
After completing this course, the student will be able to:					
1. Understand the fundamental concepts, techniques, and types of machine learning. 2. Use Python-based ML libraries (Scikit-learn, Pandas, Matplotlib, Seaborn) to build, train, and evaluate models. 3. Apply supervised and unsupervised learning methods to solve business, quality, and performance-related problems. 4. Interpret and communicate ML model outputs for decision-making. 5. Evaluate the ethical, practical, and managerial implications of ML adoption in organizations.					
Course Content				Assignments/Readings	
Week 1	Unit I: Introduction to Machine Learning 1.1 What is ML? AI vs. ML vs. Deep Learning 1.2 Applications of ML in business and industry 1.3 The ML pipeline and lifecycle			Reading: Géron (Ch. 1) Class activity: Identify real-world ML applications in quality management	
Week 2	Unit II: Data Preprocessing and Exploration 2.1 Understanding data types and quality 2.2 Data cleaning, encoding, normalization, and transformation 2.3 Train-test split and data visualization			Reading: Géron (Ch. 2–3) Assignment 1: Perform data cleaning and EDA using Pandas and Seaborn	
Week 3	Unit III: Supervised Learning – Regression Models 3.1 Linear Regression: concepts and assumptions 3.2 Logistic Regression for classification problems 3.3 Model training, testing, and evaluation			Reading: Géron (Ch. 4–5) Lab: Build regression models using Scikit-learn	
Week 4	Unit IV: Supervised Learning – Decision Trees and Random Forests 4.1 Decision tree construction and interpretation 4.2 Ensemble learning and Random Forest algorithm 4.3 Model accuracy and overfitting control			Reading: Géron (Ch. 6–7) Assignment 2: Build and compare Decision Tree and Random Forest models	
Week 5	Unit V: Support Vector Machines (SVM) 5.1 Concept of hyperplanes and margins 5.2 Kernel functions and nonlinear boundaries 5.3 Use cases in quality control and defect detection			Reading: Alpaydin (Ch. 9) Exercise: Classify quality outcomes using SVM	
Week 6	Unit VI: Model Evaluation Techniques 6.1 Evaluation metrics – accuracy, precision, recall, F1-score, ROC curve 6.2 Confusion matrix interpretation 6.3 Cross-validation and overfitting vs. underfitting			Reading: Géron (Ch. 8) Assignment 3: Evaluate and compare ML models using test data	

Week 7	Unit VII: Unsupervised Learning – Clustering 7.1 K-Means clustering: distance measures and optimization 7.2 Hierarchical clustering and dendrograms 7.3 Cluster evaluation and visualization	Reading: Géron (Ch. 9) Case exercise: Cluster production process data for segmentation
Week 8	Midterm Exam	Midterm Exam
Week 9	Unit VIII: Unsupervised Learning – Association Rule Mining 8.1 Market Basket Analysis concepts 8.2 Support, confidence, and lift metrics 8.3 Business use cases of association rules	Reading: Alpaydin (Ch. 10) Assignment 4: Generate and interpret association rules using Python
Week 10	Unit IX: Time Series Forecasting using ML 9.1 Introduction to time series and ML-based regression forecasting 9.2 Predicting demand and process performance trends 9.3 Performance evaluation of forecasting models	Reading: Géron (Ch. 11) Lab exercise: Forecast demand using ML regression models
Week 11	Unit X: ML Applications in Quality and Performance Management 10.1 Defect prediction and anomaly detection 10.2 Predictive maintenance and KPI optimization 10.3 Case examples from manufacturing and service industries	Reading: Shalev-Shwartz & Ben-David (Ch. 12) Case discussion: Predictive maintenance for process reliability
Week 12	Unit XI: Model Optimization and Deployment 11.1 Hyperparameter tuning (GridSearchCV, RandomizedSearchCV) 11.2 Model persistence and deployment basics 11.3 Using dashboards to visualize performance	Reading: Géron (Ch. 13) Assignment 5: Optimize model performance and visualize results
Week 13	Unit XII: Ethics, Bias, and Responsible AI 12.1 Ethical concerns in data use 12.2 Algorithmic bias and fairness 12.3 Transparency and accountability in ML decisions	Reading: Alpaydin (Ch. 14)
Week 14	Unit XIII: Integrated ML Project 13.1 Framing an ML business problem 13.2 End-to-end project: from data preprocessing to model evaluation 13.3 Documentation and presentation guidelines	Reading: Project Handout Group activity: Prepare ML project proposal
Week 15	Unit XIV: ML Trends and Future Directions 14.1 Explainable AI (XAI) 14.2 AutoML and emerging ML technologies 14.3 ML in digital transformation and sustainability	Reading: Géron (Ch. 15) Group presentation: ML applications in business or quality domains
Week 16	Final Exam	Final Exam
Textbooks and Reading Material		
1. Textbooks. - Géron, A. (Latest Edition). <i>Hands-On Machine Learning with Scikit-Learn, Keras & TensorFlow</i>. O'Reilly Media. - Alpaydin, E. (Latest Edition). <i>Introduction to Machine Learning</i>. MIT Press. - Shalev-Shwartz, S., & Ben-David, S. (Latest Edition). <i>Understanding Machine Learning: From Theory to Algorithms</i>. Cambridge University Press. 2. Suggested Readings - Bishop, C. M. (Latest Edition). <i>Pattern Recognition and Machine Learning</i>. Springer.		

ii. James, G., Witten, D., Hastie, T., & Tibshirani, R. (Latest Edition). <i>An Introduction to Statistical Learning</i> . Springer.			
Teaching Learning Strategies			
1. Lectures with demonstrations using Python (Jupyter Notebooks and VS Code) 2. Hands-on lab sessions with datasets and real-world case studies 3. Group discussions and applied problem-solving exercises 4. Mini-projects on business and quality-related ML applications			
Assignments: Types and Number with Calendar			
1. Assignment 1 (Week 2): Data Preprocessing and EDA 2. Assignment 2 (Week 4): Supervised Learning Model Building 3. Assignment 3 (Week 6): Model Evaluation and Cross-Validation 4. Assignment 4 (Week 9): Association Rule Mining 5. Assignment 5 (Week 12): Model Optimization and Visualization			
Assessment			
Sr. No.	Elements	Weightage	Details
1.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
2.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
3.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

Program	BSQPM	Course Code	QPM-319	Credit Hours	3
Course Title	Research Methods				
Course Introduction					
This course surveys research methodology for business and social sciences. Students learn to design and conduct studies from problem formulation through data collection, analysis, and reporting. Topics include literature review, research design (exploratory, descriptive, causal), sampling, data collection (surveys, interviews, experiments, observation), and introductory analysis for quantitative and qualitative data. Ethical practice and critical appraisal of research are emphasized, culminating in a concise research proposal.					
Learning Outcomes					
On completion of the course, students will be able to:					
1. Formulate clear research problems and questions by identifying gaps in the literature and developing measurable objectives, questions, and testable hypotheses. 2. Design effective studies by selecting suitable qualitative, quantitative, or mixed-methods designs; defining constructs and variables; addressing reliability and validity; and aligning methods to questions. 3. Apply sampling and data collection methods by defining target populations, choosing probability or non-probability techniques, developing instruments, and collecting data ethically and systematically. 4. Analyze data and interpret results using descriptive statistics and introductory inferential tests for quantitative data, and coding and thematic analysis for qualitative data, interpreting findings in context. 5. Report research professionally by writing structured proposals and reports with sound literature review, clear methodology, appropriate presentation of results, and ethical compliance, including proper citation.					
Course Content				Assignments/Readings	
Week	Unit / Topics			Assignments / Readings	
Week 1	Unit I: Introduction to Research and the Scientific Approach: Definition, objectives, scientific method, basic vs. applied research, steps in the process. Unit II: Defining the Research Problem: From topic to specific problem; qualities of good questions; theory, constructs, variables.			Reading: Saunders et al., Ch. 1; Sekaran & Bougie, Ch. 3 (problem definition). Assignment 1: Topic brainstorm with three candidate questions (due Week 2).	
Week 2	Unit III: Literature Review: Purpose, sources, searching, critical reading, structuring to identify gaps. Unit IV: Ethics in Research: Informed consent, confidentiality, plagiarism avoidance, human-subjects review overview.			Reading: Saunders et al., Ch. 2 and Ch. 5; Creswell, Ch. 3. Assignment 2: Mini literature matrix for one topic (assigned Week 2, due Week 4).	
Week 3	Unit V: Research Design Overview: Exploratory, descriptive, explanatory; cross-sectional vs. longitudinal; qualitative, quantitative, mixed. Unit VI: Qualitative Methods: Interviews, focus groups, case studies, observation; credibility, dependability.			Reading: Saunders et al., Ch. 4 (philosophy/design context), Ch. 9 selections; Creswell, Ch. 7. In-class: Draft an interview guide.	

Week 4	Unit VII: Quantitative Methods: Surveys and experiments; question types and wording; basic experimental concepts. Unit VIII: Measurement, Reliability, Validity: Operationalization; scales (nominal, ordinal, interval, ratio); reliability (including alpha) and validity types.	Reading: Zikmund et al., Ch. 13 (surveys), Ch. 15 (experiments); Sekaran & Bougie, Ch. 6. Assignment 2 due. Assignment 3: Survey design with 8–10 items across at least two constructs (due Week 6).
Week 5	Unit IX: Sampling Techniques: Populations, samples; simple random, systematic, stratified, cluster; convenience, judgment, quota, snowball; basic sample size ideas. Unit X: Data Collection and Fieldwork: Administering surveys and interviews; observation; nonresponse, pilot testing, data quality.	Reading: Saunders et al., Ch. 7; Zikmund et al., Ch. 16. Class activity: Choose sampling for a given scenario. Assignment 4: Sampling plan for a chosen question (assigned Week 5, due Week 7).
Week 6	Unit XI: Quantitative Data Analysis Overview: Coding, cleaning, descriptive statistics, frequency tables and crosstabs, confidence intervals, when to use basic tests. Unit XII: Software Demonstration: SPSS, Excel, or open-source equivalent; running descriptives and a t-test; reading output.	Reading: Saunders et al., Ch. 11 (intro sections); optional Pallant chapter. Lab demo. Assignment 3 due.
Week 7	Unit XIII: Qualitative Data Analysis: Transcription, open and axial coding, thematic analysis; rigor via triangulation and audit trails; brief software mention (NVivo, ATLAS.ti). Unit XIV: Mixed Methods and Triangulation: Sequential and concurrent designs; combining breadth and depth.	Reading: Creswell, Ch. 8; Saunders et al., Ch. 14 overview. Assignment 4 due. Assignment 5: Mini data analysis (quant or qual) with short interpretation (due Week 9).
Week 8	Midterm Exam: Units I–XIV; concepts, brief interpretations, and design checks.	—
Week 9	Unit XV: Writing and Presenting Research Proposals: Components, feasibility, significance, analysis plan, timeline. Unit XVI: Academic Writing and Referencing: Style, in-text citation, reference lists, avoiding plagiarism.	Reading: Saunders et al., Ch. 15; Creswell, proposal example. Assignment 5 due. Assignment 6: Research proposal outline, 1–2 pages (assigned Week 9, due Week 12).
Week 10	Unit XVII: Evaluating and Using Research: Appraising sample quality, bias, causality limits, generalizability; intro to systematic reviews and meta-analysis. Unit XVIII: Case: Reading a Research Article: Identify question, design, sample, findings, strengths and limits.	Reading: Saunders et al., Ch. 6 (critical review). Group worksheet on an assigned article.
Week 11	Unit XIX: Guest Lecture / Special Topics: Industry research practice, cross-cultural issues, or introductory advanced analyses for awareness. Unit XX: Common Mistakes and Remedies: Misaligned questions and methods, biased items, weak ethics plans, practical tips for success.	Reading: Instructor-provided “common mistakes” note.

Week 12	Unit XXI: Proposal Workshop: Peer feedback and instructor consultations to refine outlines. Unit XXII: Course Summary and Q&A: Integrating literature, design, sampling, data, analysis, ethics.	Assignment 6 due.	
Week 13	Student Presentations : Short proposal pitches and feedback session	—	
Week 14	Final Exam: Comprehensive assessment emphasizing design choices, evaluation, and basic analysis interpretation.	—	
Textbooks and Reading Material			
1. Textbooks i. Saunders, M., Lewis, P., & Thornhill, A. <i>Research Methods for Business Students</i> (Latest Edition). Pearson. ii. Zikmund, W., Babin, B., Carr, J., & Griffin, J. <i>Business Research Methods</i> (Latest Edition). Cengage. 2. Suggested Readings i. Sekaran, U., & Bougie, R. <i>Research Methods for Business: A Skill-Building Approach</i> (Latest Edition). Wiley. ii. Creswell, J. W., & Creswell, J. D. <i>Research Design: Qualitative, Quantitative, and Mixed Methods Approaches</i> (Latest Edition). Sage. iii. Cooper, D., & Schindler, P. <i>Business Research Methods</i> (Latest Edition). McGraw-Hill. iv. Selected journal articles and exemplary studies provided throughout the course.			
Teaching Learning Strategies			
1. Lectures using multimedia and a whiteboard 2. Interactive discussions and exercises 3. Case studies and simulations 4. Group Projects and Presentations			
Assignments: Types and Number with Calendar			
1. Assignment 1 (Week 1–2): Topic brainstorm with three candidate questions. 2. Assignment 2 (Week 2–4): Mini literature matrix summarizing three academic sources for one topic. 3. Assignment 3 (Week 4–6): Survey instrument with 8–10 items across at least two constructs. 4. Assignment 4 (Week 5–7): Sampling plan specifying population, method, justification, and basic size approach. 5. Assignment 5 (Week 7–9): Mini analysis task (quantitative descriptives or qualitative coding) with short interpretation. 6. Assignment 6 (Week 9–12): Research proposal outline integrating topic, literature snapshot, methodology, sampling, analysis plan, and ethics.			
Assessment			
Sr. No.	Elements	Weightage	Details
4.	Midterm Assessment	35%	Written Assessment at the mid:point of the semester.
5.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands:on:activities, short tests, projects, practical, reflections, readings, quizzes etc.

6.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.
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Programme	BSQPM	Course Code	QPM-320	Credit Hours	3
Course Title	Decision Making and Analytics				
Course Introduction					
Critical thinking is the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action.					
Learning Outcomes					
On the completion of the course, the students will: 18. Understand key concepts of critical thinking 19. Clarify the difference in cognition, reasoning and logics 20. Improve their decision making based on facts, assumptions, arguments etc. 21. Able to see a problem with a logical approach to find a quick solution 22. Understand the importance of bias in critical thinking 23. Apply Critical Thinking in practical situations					
Course Content			Assignments/Readings		
Week 1	Introduction to Decision Making & Analytics — Concepts, applications, and importance; history and evolution of analytics; management science modeling approach.		Assignment 1: Short report on “How analytics improves decision-making in organizations.”		
Week 2	Decision Models and Management Science Methodology — Problem formulation, model building, and implementation steps		In-class activity: Identify decision variables, objectives, and constraints in a sample business scenario.		
Week 3	Linear Programming (LP): Concepts and Formulation — Structure of LP models, real-world examples.		Assignment 2: Formulate three LP problems from business or operations contexts.		
Week 4	Graphical Solution and Simplex Algorithm — Feasible region, optimal solutions, and use of solver tools.		Spreadsheet Exercise: Solve LP problems using Excel Solver.		
Week 5	Sensitivity Analysis and Applications of LP — Shadow prices, reduced costs, and interpretation of results.		Assignment 3: Conduct sensitivity analysis for a solved LP model and interpret results		
Week 6	Integer Programming (IP): Concepts and Formulation — Binary and mixed-integer programming; applications.		Activity: Model an IP problem for project selection or facility location.		
Week 7	Solving IP Models — Branch and Bound method, Excel Solver application.		Assignment 4: Solve an IP problem using spreadsheet-based solver.		
Week 8	Network Models: Introduction and Applications — Transportation, assignment, and shortest path problems		Lab Activity: Build and solve a transportation problem using Excel.		
Week 9	Network Flow Problems — Maximum flow, minimum cost flow, and project management (PERT/CPM basics).		Assignment 5: Analyze a project network and determine the critical path.		

Week 10	Queueing Models — Components, examples, and applications of waiting line systems; Little’s Law.	Assignment 6: Compute performance measures for single- and multi-server queue systems.
Week 11	Queueing Models (Continued) — Priority models and economic analysis of waiting systems.	<i>Class Exercise:</i> Model queue performance in a service environment (e.g., bank or call center).
Week 12	Dynamic Programming (DP): Concepts and Applications — Sequential decision processes and resource allocation.	Assignment 7: Solve a resource allocation problem using DP approach.
Week 13	Spreadsheet Modeling in Practice — Model design, validation, and error testing.	<i>Hands-on Exercise:</i> Develop and test a spreadsheet model for decision-making.
Week 14	Integrating Analytics in Decision Making — Combining models for business strategy; interpreting and presenting results.	Assignment 8: Write a management report summarizing model-based decision results.
Week 15	Case Study and Review — Real-life applications of management science techniques in decision-making.	Group Project: Present a case study applying at least two analytical models.
Week 16	Final Evaluation and Course Summary — Course reflection and final assessment.	Final Assessment: Written exam or project report submission.

Textbooks and Reading Material

Main Textbook:

1. Ragsdale, Cliff T. Spreadsheet Modelling & Decision Analysis. Latest Edition, Thomson South-Western.
2. Hillier, F. S., & Hillier, M. S. Introduction to Management Science. Latest Edition, McGraw Hill.
3. Balakrishnan, Render, & Stair. Managerial Decision Modelling with Spreadsheets. Latest Edition.

Suggested Readings:

1. Winston, Wayne L. *Operations Research: Applications and Algorithms*. Cengage Learning
2. 5. Anderson, David R. *An Introduction to Management Science: Quantitative Approaches to Decision Making*. Cengage.
3. Powell, Stephen G., & Baker, Kenneth R. *Management Science: The Art of Modeling with Spreadsheets*. Wiley.

Teaching Learning Strategies

1. Lectures using multimedia and whiteboard
2. Interactive discussions and exercises
3. Case studies and simulations
4. Group Projects and Presentations

Assignments: Types and Number with Calendar

1. **Assignment 1 (Week 1–2):** Identify three real-world decision-making problems and outline possible analytical approaches for each.
2. **Assignment 2 (Week 3–4):** Develop and submit a basic linear programming (LP) model in Excel, explaining objective function and constraints.
3. **Assignment 3 (Week 5–6):** Apply an integer programming technique to a simple resource allocation or scheduling problem and interpret results.
4. **Assignment 4 (Week 7–8):** Analyze a network problem (transportation or shortest path) and present a flow diagram with optimized results.
5. **Assignment 5 (Week 9–10):** Conduct a mini-queueing analysis—collect sample data, calculate waiting time metrics, and interpret findings.
6. **Assignment 6 (Week 11–12):** Prepare a decision-making model integrating linear, network, or dynamic programming for a real or hypothetical business scenario.
7. **Assignment 7 (Week 13–14):** Design a spreadsheet-based simulation (Monte Carlo or scenario analysis) to test decision outcomes under uncertainty.
8. **Assignment 8 (Week 15–16):** Final project—develop a comprehensive analytics-based decision model and present findings with managerial recommendations.

Assessment

Sr. No.	Elements	Weightage	Details
22.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
23.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
24.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

Semester VII

Program	BSQPM	Course Code	CP-401	Credit Hours	3
Course Title	Internship				
Learning Outcomes					
1. Establish a sound knowledge of their field work 2. Follow the time and guide lines and submit the report accordingly.					
Course Content					
Students have to do internship to undertake a field within the domain of quality and operational excellence or an inter- or multi-disciplinary area involving the application of quality and performance tools, techniques, and concepts both in depth and breadth.					

Program	BSQPM	Course Code	QPM-421	Credit Hours	3
Course Title	Supply Chain Management				
Course Introduction					
Supply Chain Management (SCM) is a critical field that focuses on the flow of goods, information, and finances across the entire supply chain, from raw material suppliers to end consumers. This course aims to provide students with a comprehensive understanding of the principles, strategies, and best practices involved in managing supply chains effectively. In today's globalized economy, efficient supply chain management is essential for organizations to maintain competitiveness, reduce costs, and improve customer satisfaction. This course will cover key topics such as demand forecasting, inventory management, logistics, procurement, and the role of technology in supply chain optimization.					
Learning Outcomes					
After completing this course, the student will be able to: 1. Understand the fundamental concepts, drivers, and objectives of supply chain management. 2. Analyze the role of supply chains in improving organizational competitiveness and performance. 3. Apply supply chain models and strategies for sourcing, production, distribution, and customer fulfillment. 4. Recognize the importance of collaboration, integration, and technology in supply chain effectiveness. 5. Evaluate supply chain performance with respect to cost, quality, responsiveness, and sustainability					
Course Content				Assignments/Readings	
Week 1	Unit I: Introduction to Supply Chain Management 1.1 Definition, objectives, and scope of SCM 1.2 Supply chain structure and flows (material, information, and finance) 1.3 The role of SCM in competitiveness			Reading: Chopra & Meindl, Ch. 1 Class Activity: Map the supply chain of a local apparel company	
Week 2	Unit II: Supply Chain Drivers and Metrics 2.1 Drivers: Facilities, inventory, transportation, information, sourcing, and pricing 2.2 Performance metrics: cost, quality, time, flexibility, and sustainability			Reading: Wisner et al., Ch. 3 Assignment 1: Analyze drivers of a chosen company’s supply chain performance	
Week 3	Unit III: Supply Chain Strategies 3.1 Achieving strategic fit between competitive and supply chain strategies 3.2 Efficiency vs. responsiveness trade-offs 3.3 Lean vs. agile supply chains; push vs. pull systems			Reading: Chopra & Meindl, Ch. 2 Exercise: Compare lean and agile practices in textile vs. food industries	
Week 4	Unit IV: Network Design and Facility Location 4.1 Role of network design in SCM 4.2 Facility location models and factors 4.3 Distribution network design and channel strategies			Reading: Wisner et al., Ch. 5 Assignment 2: Develop a basic facility location model in Excel	
Week 5	Unit V: Demand Management and Forecasting 5.1 Demand forecasting in supply chains 5.2 Qualitative and quantitative forecasting techniques 5.3 Linking forecasting with planning decisions			Reading: Chopra & Meindl, Ch. 7 Lab: Use Excel to create a simple moving average forecast	
Week 6	Unit VI: Sourcing and Procurement 6.1 Supplier selection and evaluation criteria 6.2 Outsourcing, offshoring, and global sourcing 6.3 Supplier relationship management			Reading: Monczka et al., Ch. 6–8	

		Assignment 3: Evaluate sourcing options for a manufacturing case
Week 7	Unit VII: Inventory Management in Supply Chains 7.1 Role and types of inventories 7.2 Bullwhip effect and risk pooling 7.3 Safety stock and service level trade-offs	Reading: Wisner et al., Ch. 7; Chopra & Meindl, Ch. 8 Exercise: Calculate EOQ and safety stock using given data
Week 8	Midterm Exam	Midterm Exam
Week 9	Unit VIII: Logistics and Transportation Management 8.1 Role of logistics in SCM 8.2 Transportation modes and cost trade-offs 8.3 Warehouse design and layout	Reading: Wisner et al., Ch. 8; Chopra & Meindl, Ch. 9
Week 10	Unit IX: Coordination and Collaboration in Supply Chains 9.1 Importance of coordination and information sharing 9.2 Barriers to supply chain integration 9.3 Collaborative planning, forecasting, and replenishment (CPFR)	Reading: Chopra & Meindl, Ch. 10 Assignment 4: Evaluate collaboration challenges in a multi-tier supply chain
Week 11	Unit X: Technology in SCM 10.1 Role of ERP, RFID, and barcoding 10.2 Blockchain and digital supply chain platforms 10.3 Artificial Intelligence and analytics in SCM	Reading: Wisner et al., Ch. 11
Week 12	Unit XI: Global Supply Chains and Risk Management 11.1 Characteristics of global supply chains 11.2 Risk sources and mitigation strategies 11.3 Trade-offs in global logistics and sourcing	Reading: Chopra & Meindl, Ch. 15 Assignment 5: Analyze global risk scenarios in a multinational supply chain
Week 13	Unit XII: Sustainable and Ethical Supply Chains 12.1 Green supply chain management 12.2 Circular economy principles 12.3 Corporate social responsibility (CSR) and ethical sourcing	Reading: Wisner et al., Ch. 14
Week 14	Unit XIII: Performance Measurement and Benchmarking 13.1 Supply chain performance dimensions (cost, service, quality) 13.2 SCOR model overview 13.3 Benchmarking best practices	Reading: Chopra & Meindl, Ch. 4
Week 15	Unit XIV: Emerging Trends and Future Directions in SCM 14.1 Digital transformation and Industry 4.0 14.2 Resilient and responsive supply chains 14.3 Case study integration and final project presentations	Reading: Selected research articles/case studies
Week 16	Final Exam	Final Exam
Textbooks and Reading Material		
1. Textbooks. i. Wisner, J. D., Tan, K.-C., & Leong, G. K. (Latest Edition). <i>Principles of Supply Chain Management: A Balanced Approach</i>. Cengage Learning.		

ii. Chopra, S., Meindl, P., & Kalra, D. V. (Latest Edition). <i>Supply Chain Management: Strategy, Planning, and Operation</i>. Pearson. iii. Monczka, R. M., Trent, R. J., & Handfield, R. B. (Latest Edition). <i>Purchasing and Supply Chain Management</i>. Cengage Learning.			
2. Suggested Readings			
i. Christopher, M. Logistics and Supply Chain Management. Pearson. ii. Hugos, M. Essentials of Supply Chain Management. Wiley. iii. Selected case studies from Harvard Business Review and MIT Center for Transportation & Logistics.			
Teaching Learning Strategies			
1. Lectures supported by case discussions and multimedia presentations. 2. Group exercises and in-class simulations (e.g., Beer Game). 3. Applied assignments using Excel or Python for network and inventory modeling. 4. Industry guest lectures from the manufacturing, logistics, and retail sectors. 5. Capstone group project linking theory with real-world SCM challenges.			
Assignments: Types and Number with Calendar			
1. Assignment 1 (Week 2): Supply Chain Drivers Analysis 2. Assignment 2 (Week 4): Facility Location Model (Excel-based) 3. Assignment 3 (Week 6): Supplier Evaluation & Sourcing Case 4. Assignment 4 (Week 10): Supply Chain Collaboration Study 5. Assignment 5 (Week 12): Global Risk & Resilience Analysis			
Assessment			
Sr. No.	Elements	Weightage	Details
1.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
2.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
3.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

Programme	BSQPM	Course Code	QPM-422	Credit Hours	3
Course Title	Strategic Management				
Course Introduction					
Introduction to strategy and its role in achieving organizational goals, overview of strategic management process, importance of strategic thinking and decision-making in competitive business environments.					
Learning Outcomes					
After completing this course, the student will be able to: 1. Understand fundamental concepts, theories, and frameworks of strategy. 2. Analyze internal and external environments affecting organizations. 3. Formulate and implement effective business and corporate strategies. 4. Evaluate strategic options and their impact on organizational performance. 5. Apply strategic tools in real-world business cases.					
Course Content				Assignments/Readings	
Week 1	Unit-I: Introduction to Strategy: Definition, levels of strategy, vision, mission, objectives, strategic intent.			Reading: (Ch. 1); Assignment: Relevant Case Study Course Outline Briefing Final Project Briefing	
Week 2	Unit-III: Environmental scanning, strategy formulation, implementation, and evaluation.			Reading: Wheelen, (Ch. 3, 4) Assignment: Relevant Case Study	
Week 3	External Environment Analysis: PESTEL analysis, Porter’s Five Forces, industry structure, competitive dynamics.			Reading: Wheelen, (Ch. 3)	
Week 4	Unit-IV: Internal Environment Analysis: Resource-based view (RBV), core competencies, value chain analysis, SWOT analysis.			Reading: : Wheelen, (Ch. 5, 6)	
Week 5	Unit-V: Strategy Formulation: Business-level strategies (cost leadership, differentiation, focus);			Reading: Wheelen, (Ch. 6, 7)	
Week 6	Unit-VI: Corporate-level strategies (growth, stability, retrenchment, diversification), global and international strategies.			Reading:Wheelen, (Ch. 8) Assignment: Relevant Case Study	

Week 7	Unit-VII: Strategy Implementation: Organizational structure and design, leadership and culture, strategic change, resource allocation, communication of strategy.	Reading: Wheelen, (Ch. 9)
Week 8	Midterm Review and Exam	Midterm Exam covering Units I–VII
Week 9	Unit-VIII: Strategy Evaluation and Control: Performance measurement, balanced scorecard	Reading: Wheelen, (Ch. 9) Assignment: Case study
Week 10	Strategic audits, feedback and corrective action.	Reading: Wheelen, (Ch. 11)
Week 11	Innovation and Strategic Change: Disruptive innovation, digital transformation	Reading: Wheelen, (Ch. 13)
Week 12	Strategic agility, learning organizations	Reading: Wheelen, (Ch. 14)
Week 13	Corporate Governance and Ethics: stakeholder management, sustainability in strategy.	Reading: Wheelen, (Ch. 15) Assignment: Case study
Week 14	Corporate Governance and Ethics: Board roles, social responsibility	Reading: Wheelen, (Ch. 16)
Week 15	Case Studies and Applications: Analysis of real-world business strategies, strategy simulation exercises, group presentations and discussions.	Reading: Wheelen, (Ch. 17)
Week 16	Course Review and Final Project Presentation	Final Exam

Textbooks and Reading Material

Textbooks.

1. Strategic Management and Business Policy: Globalization, Innovation, and Sustainability; Wheelen, T.L., Hunger, J.D., Hoffman, A.N., Bamford, C.E.; latest edition; Pearson Education.
2. Strategic Management: Theory – An Integrated Approach; Hill, C.W.L., Schilling, M.A., Jones, G.R.; latest edition; Cengage Learning.
3. Strategic Management: Concepts and Cases; David, F.R., David, F.R. Jr.; latest edition; Pearson Education, New Jersey.

Reading Material

1. Hill, C. W. L., Jones, G. R., & Schilling, M. A. – Strategic Management: An Integrated Approach.
2. A leading textbook covering core strategy models, analysis tools, and case studies.
3. David, F. R., & David, F. R. – Strategic Management: Concepts and Cases. Pearson Education.
4. Known for its practical, case-based approach to strategic planning and execution.
5. Dess, G. G., McNamara, G., Eisner, A. B., & Lee, S. – Strategic Management: Text and Cases. McGraw-Hill Education.
6. Balanced coverage of theory and real-world application with current global examples.
7. Wheelen, T. L., & Hunger, J. D. – Strategic Management and Business Policy: Globalization, Innovation, and Sustainability.
8. Focuses on integrating strategy with ethical, environmental, and innovation issues.

Teaching Learning Strategies

1. Lectures using multimedia and whiteboard
2. Interactive discussions and exercises
3. Case studies and simulations
4. Group Projects and Presentations

Assignments: Types and Number with Calendar

1. Assignment 1 (Week 1–2): Case study
2. Assignment 2 (Week 4): Case study
3. Assignment 3 (Week 9): Case study
4. Assignment 4 (Week 13): Case study

Assessment

Sr. No.	Elements	Weightage	Details
1.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
2.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
3.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

Programme	BSQPM	Course Code	QPM-320	Credit Hours	3
Course Title	Project Management				
Course Introduction					
This course develops a practical, end-to-end understanding of contemporary project management. Students learn how to align projects with strategy, define scope, estimate and schedule work, manage risk and resources, lead teams, engage stakeholders, and track value delivery through closure. The course blends a socio-technical view of projects with the PMI® principles to prepare students for real-world execution across industries.					
Learning Outcomes					
On completion of the course, students will be able to:					
1. Align projects with organizational strategy and select projects using defensible criteria. 2. Define scope, create WBS, estimate time and cost, and build feasible schedules. 3. Identify, analyze, and respond to risks; plan resources and budgets; manage trade-offs. 4. Lead and develop teams, engage stakeholders, and tailor delivery approaches to context. 5. Measure progress and value (including earned value), manage changes, and close projects professionally.					
Course Content				Assignments/Readings	
Week	Unit / Topics			Assignments / Readings	
Week 1	Unit I: Modern Project Management — the project environment, project life cycle, why projects succeed/fail; overview of PMI® principles.			Reading: Larson & Gray, <i>Project Management: A Socio-Technical Approach</i> , Ch. 1. PMI, “12 Principles of Project Management” (overview).	
Week 2	Unit II: Strategy and Selection — portfolios, alignment, selection methods. Unit III: Organization, Structure, and Culture — project roles, PMO types, culture fit.			Reading: Larson & Gray, Ch. 2 and Ch. 3.	
Week 3	Unit IV: Defining the Project — scope statements, deliverables, WBS, responsibility matrices.			Reading: Larson & Gray, Ch. 4. Assignment 1: Project Charter and WBS	
Week 4	Unit V: Estimating Times and Costs — estimating methods, uncertainty, buffers.			Reading: Larson & Gray, Ch. 5.	
Week 5	Unit VI: Developing the Project Schedule — networks, CPM, critical path, lags, constraints.			Reading: Larson & Gray, Ch. 6.	
Week 6	Unit VII: Managing Risk — identification, analysis, responses, risk registers.			Reading: Larson & Gray, Ch. 7.	
Week 7	Unit VIII: Scheduling Resources and Costs — resource loading/leveling, cost profiles. Unit IX: Reducing Project Duration — crashing and fast-tracking trade-offs.			Reading: Larson & Gray, Ch. 8 and Ch. 9. Assignment 2: Gantt Chart	

Week 8	Midterm Exam — Units I–IX.	—
Week 9	Unit X: Being an Effective Project Manager — leadership behaviors, ethics, tailoring; PMI principles linkage.	Reading: Larson & Gray, Ch. 10; PMI principles on Leadership, Stewardship, Tailoring.
Week 10	Unit XI: Managing Project Teams — forming to performing, motivation, conflict and negotiation, virtual teams.	Reading: Larson & Gray, Ch. 11.
Week 11	Unit XII: Outsourcing & Interorganizational Relations — procurement basics, make-or-buy, contracts, vendor coordination.	Reading: Larson & Gray, Ch. 12.
Week 12	Unit XIII: Progress & Performance Measurement — status reporting, earned value analysis, forecasting (EAC/ETC).	Reading: Larson & Gray, Ch. 13.
Week 13	Unit XIV: Project Closure — administrative and contract closeout, retrospectives, benefits realization handoff.	Reading: Larson & Gray, Ch. 14. Assignment 3: Project performance report
Week 14	PMI® Principles Integration Workshop — value focus, systems thinking, stakeholder engagement, risk, quality, adaptability and change enablement; tying principles to cases from the term.	Reading: PMI, “12 Principles of Project Management” (full review).
Week 15	Course Review & Project Presentations — integrated schedule–cost–risk narratives; lessons learned.	Deliverable: Team project report and presentation.
Week 16	Final Exam — comprehensive.	—
Textbooks and Reading Material		
3. Textbook (Primary) Larson, E. W., & Gray, C. F. <i>Project Management: A Socio-Technical Approach</i> . New York: McGraw-Hill. 4. Standard (Required excerpts) Project Management Institute (PMI). <i>12 Principles of Project Management</i> (PMBOK® Guide, 7th-edition). 5. Suggested Kerzner, H. <i>Project Management: A Systems Approach to Planning, Scheduling, and Controlling</i> (latest ed.). Hoboken: Wiley. (Use selectively for deeper topics.)		
Teaching Learning Strategies		
5. Lectures using multimedia and a whiteboard 6. Interactive discussions and exercises 7. Case studies and simulations 8. Group Projects and Presentations		
Assignments: Types and Number with Calendar		
1. Assignment 1 (Week 3–4): Project Charter and WBS: Develop a brief project charter outlining objectives, scope, and deliverables. Create a Work Breakdown Structure (WBS) for the same project.		

2. Assignment 2 (Week 6–7): Project Schedule and Risk Plan: Prepare a Gantt chart showing activity timelines and dependencies. Identify key project risks and propose mitigation strategies.
3. Assignment 3 (Week 12–13): Project Performance Report: Analyze project progress using earned value metrics (CPI, SPI) and summarize lessons learned in a short closure report.

Assessment

Sr. No.	Elements	Weightage	Details
7.	Midterm Assessment	35%	Written Assessment at the mid:point of the semester.
8.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands:on:activities, short tests, projects, practical, reflections, readings, quizzes etc.
9.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

Program	BSQPM	Course Code	CP-402	Credit Hours	1
Course Title	Project				
Learning Outcomes					
After completing this course, the student will be able to: 1. Establish a sound knowledge of their assigned project topic 2. Use the appropriate tools and techniques for analysis of gathered data 3. Follow the time and guide lines to carry out project 4. Approval of Synopsis					
Course Content					
Students have to work individually to undertake a project within the domain of quality and performance management or an inter- or multi-disciplinary area involving the application of quality and performance tools, techniques, and concepts both in depth and breadth. Approval of synopsis is mandatory					

Semester VIII

Program	BSQPM	Course Code	CP-403	Credit Hours	2
Course Title	Project				
Learning Outcomes					
After completing this course, the student will be able to:					
1. Data Collection & Analysis					
2. Submission of Project					
Course Content					
Students have to work individually to undertake a project within the domain of quality and performance management or an inter- or multi-disciplinary area involving the application of quality and performance tools, techniques, and concepts both in depth and breadth.					

Programme	BSQPM	Course Code	QPM-425	Credit Hours	3
Course Title	Human Resource Management				
Course Introduction					
Human Resource Management (HRM) is about managing people within an organization to ensure that business goals are met effectively. This course introduces the key HR functions, from hiring to performance management, training, employee relations, and compliance with labor laws.					
Learning Outcomes					
After completing this course, the student will be able to: 1. Appreciate the importance of human resource management as a field of study and as a central management function 2. Understand the implications for human resource management of the behavioral sciences, government regulations, and court decisions 3. Know the elements of the HR function (e.g. – recruitment, selection, training and development, etc.) and be familiar with each element’s key concepts & terminology; and 4. Apply the principles and techniques of human resource management gained through this course to the discussion of major personnel issues and the solution of typical case problems.					
Course Content				Assignments/Readings	
Week 1	Unit-I: Overview of Human Resource Management Unit-II: Key Trends Shaping HRM Challenges and opportunities			Reading: Dessler (Ch. 1); Assignment: Relevant Case Study Course Outline Briefing Final Project Briefing	
Week 2	Unit-III: Human Resource Planning, Job Analysis: Sources, Job Description, Job Evaluation: Ranking, Paired Comparison, Point Method			Reading: Dessler (Ch. 3, 4) Assignment: Relevant Case Study	
Week 3	Strategic Human Resource Management and the HR Scorecard			Reading: Dessler (Ch. 3)	
Week 4	Unit-IV: Recruitment & Selection: Difference between Recruitment & Selection, Recruitment Techniques, Selection Techniques,			Reading: : Dessler (Ch. 5, 6)	
Week 5	Unit-V: Testing & Interviewing			Reading: Dessler (Ch. 6, 7)	
Week 6	Unit-VI: Training and Developing			Reading: Dessler (Ch. 8) Assignment: Relevant Case Study	
Week 7	Unit-VII: Performance Management and Appraisal			Reading: Dessler (Ch. 9)	

Week 8	Midterm Review and Exam	Midterm Exam covering Units I–VII
Week 9	Unit-VIII: Performance Appraisal processes	Reading: Dessler (Ch. 9) Assignment: Case study
Week 10	Establishing Strategic Pay Plans Compensation	Reading: Dessler (Ch. 11)
Week 11	Benefits and Services	Reading: Dessler (Ch. 13)
Week 12	Ethics, Justice, and Fair Treatment in HR Management	Reading: Dessler (Ch. 14)
Week 13	Labor Relations and Collective Bargaining	Reading: Dessler (Ch. 15) Assignment: Case study
Week 14	Employee Safety and Health	Reading: Dessler (Ch. 16)
Week 15	International Human Resource Management	Reading: Dessler (Ch. 17)
Week 16	Course Review and Final Project Presentation	Final Exam

Textbooks and Reading Material

Textbooks.

1. Human resource management: Concepts and practices; Latest Edition; De Cenzo, D. A., & Robbins, S. P; John Wiley.
2. Human resource management; Latest Edition; Dessler, G.; Prentice Hall.
3. Labour Code of Pakistan; Shafi, M.; latest edition; Bureau of Labour Publications
4. SA 8000; Latest Edition; SAI

Reading Material

1. Michael Armstrong – Armstrong’s Handbook of Human Resource Management Practice, A practical guide to modern HRM techniques, performance management, and employee engagement.
2. John Bratton & Jeff Gold – Human Resource Management: Theory and Practice, Combines theory with real-world case studies — great for classroom discussion!
3. Ivancevich, J. M. – Human Resource Management (McGraw-Hill), Focuses on HR strategies that improve productivity and job satisfaction.
4. Bohlander, G., & Snell, S. – Principles of Human Resource Management, Emphasizes the strategic role of HR in achieving organizational effectiveness

Teaching Learning Strategies

1. Lectures using multimedia and whiteboard
2. Interactive discussions and exercises
3. Case studies and simulations
4. Group Projects and Presentations

Assignments: Types and Number with Calendar			
1. Assignment 1 (Week 1–2): Case study 2. Assignment 2 (Week 4): Case study 3. Assignment 3 (Week 9): Case study 4. Assignment 4 (Week 13): Case study			
Assessment			
Sr. No.	Elements	Weightage	Details
4.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
5.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
6.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

Programme	BSQPM	Course Code	QPM-426	Credit Hours	3
Course Title	Energy & Sustainability Management				
Course Introduction					
Energy Management" focuses on efficiently using energy resources to minimize costs, reduce environmental impact, and ensure sustainable use. This module covers energy auditing, conservation techniques, renewable energy integration, and strategies for optimizing energy use in various sectors. Sustainability" is about meeting our current needs without harming future generations' ability to meet theirs. This course explores how we can manage resources like water, energy, and food to balance environmental health, economic growth, and social well-being. We'll look at topics like renewable energy, waste reduction, and sustainable communities, learning ways to protect our planet while ensuring a good quality of life for everyone					
Learning Outcomes					
On the completion of the course, the students will: 1. Understand the principles of energy management and sustainability in organizational contexts. 2. Apply tools and techniques to improve energy efficiency and reduce environmental impact. 3. Explain international frameworks and standards for energy and sustainability management (ISO 50001, UN SDGs, GRI). 4. Evaluate the role of sustainable practices in enhancing organizational performance and competitiveness. 5. Propose energy and sustainability initiatives that align with quality and performance management objectives.					
Course Content				Assignments/Readings	
Week 1	Introduction to Energy & Sustainability – Key concepts, importance for organizations, and link with quality & performance management.			Reading: Capehart et al., <i>Guide to Energy Management</i> , Ch. 1–2	
Week 2	Global Energy Landscape – Overview of global and national energy scenarios; Pakistan’s energy mix and sustainability challenges.			Assignment 1: Short report on Pakistan’s current energy challenges	
Week 3	Energy Management Fundamentals – Energy demand and supply analysis, energy conservation principles.			Reading: Thumann & Younger, <i>Handbook of Energy Audits</i> , Ch. 1–2	
Week 4	Energy Auditing – Steps in conducting energy audits, tools, data collection, and reporting.			Practical Task: Prepare a sample energy audit checklist	
Week 5	Tools for Energy Efficiency – Benchmarking, monitoring & targeting, and energy performance KPIs.			Reading: Capehart et al., <i>Guide to Energy Management</i> , Ch. 5	
Week 6	Sustainability Management Concepts – The triple bottom line: economic, social, and environmental dimensions.			Assignment 2: Essay on the importance of sustainability in busine	
Week 7	UN Sustainable Development Goals (SDGs) – Understanding SDGs, corporate alignment, and sustainability frameworks.			Reading: UN Global Compact, <i>SDG Compas</i>	

Week 8	Midterm Review & Case Study Discussion – Case analysis: Energy management in a manufacturing or service organization.	Case Study Submission
Week 9	Energy & Environmental Standards – ISO 50001 (Energy Management System), ISO 14001 (Environmental Management System).	Reading: ISO 50001: EMS Requirements
Week 10	Sustainable Business Practices – Green manufacturing, cleaner production, and waste minimization strategies.	Assignment 3: Develop a green manufacturing propos
Week 11	Renewable Energy & Industry Applications – Solar, wind, biomass, hydro; renewable integration in production sectors.	Reading: Capehart et al., <i>Guide to Energy Management</i> , Ch. 9
Week 12	Carbon Footprint & Emission Reduction – Methods for calculating carbon footprints and strategies for mitigation.	Workshop: Calculate your institution's estimated carbon footprint
Week 13	Sustainability Reporting & Compliance – GRI Standards, ESG reporting, and corporate social responsibility.	Reading: GRI Standards (latest edition)
Week 14	Linking Sustainability with Quality & Performance – Integrating energy management with performance measurement systems.	Assignment 4: Report on energy-performance linkage in organizations
Week 15	Emerging Trends in Energy & Sustainability – Circular economy, green innovation, and digital transformation (IoT, AI in energy).	Group Presentation: Innovative sustainability solutions
Week 16	Course Review & Final Assessment – Comprehensive review and final project presentations.	Final Project: Energy & Sustainability Improvement Plan
		Final Exam

Textbooks and Reading Material

Textbooks.

1. *Guide to Energy Management*. CRC Press, Latest Edition; Capehart, B.L., Turner, W.C., & Kennedy, W.J.
2. *Handbook of Energy Audits*. Fairmont Press, Latest Edition; Thumann, A., & Younger, W.J.
3. United Nations Global Compact. *SDG Compass: The Guide for Business Action on the SDGs*.
4. ISO 50001: *Energy Management Systems – Requirements with Guidance for Use*. Latest Edition.
5. GRI Standards (Global Reporting Initiative).

Suggested Readings

6. **Rao, P.S.** (Latest Edition). *Textbook of Environmental Engineering*. Prentice Hall.
→ Explains energy-environment linkages, pollution control, and sustainable systems.
7. **Klemeš, J.J.** (2022). *Sustainable Process Integration and Intensification: Saving Energy, Water, and Resources*. Elsevier.
Advanced insight into sustainable industrial practices and optimization.
8. **Boyle, G.** (2012). *Renewable Energy: Power for a Sustainable Future*. Oxford University Press.
→ Excellent introduction to renewable energy sources and technologies.
9. **Shrivastava, P.** (2019). *Sustainable Business: Concepts, Methodologies, Tools, and Applications*. IGI Global.
→ Covers sustainability management in business operations and policy.

10. United Nations Environment Programme (UNEP). <i>Global Environment Outlook (GEO) Reports.</i> → Updated reports on global energy and sustainability trends.			
Teaching Learning Strategies			
1. Lectures using multimedia and whiteboard 2. Interactive discussions and exercises 3. Case studies and simulations 4. Group Projects and Presentations			
Assignments: Types and Number with Calendar			
1. Assignment 1 (Week 2): Report on Pakistan's Energy Profile 2. Assignment 2 (Week 6): Essay on Triple Bottom Line Implementation in Business 3. Assignment 3 (Week 10): Proposal on Waste Reduction Strategies for an Organization 4. Assignment 4 (Week 12): Renewable Energy Integration Proposal 5. Assignment 5 (Week 14): Case Study on Energy-Performance Improvement 6. Assignment 6 (Week 15): Group Sustainability Project Presentation			
Assessment			
Sr. No.	Elements	Weightage	Details
1.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
2.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
3.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

Program	BSQPM	Course Code	QPM 427	Credit Hours	3
Course Title	Logistic Management				
Course Introduction					
Logistics Management is a critical component of supply chain management that focuses on the efficient movement and storage of goods. This course provides students with essential knowledge of logistics principles, including transportation, warehousing, inventory management, and distribution. Students will learn how to design and optimize logistics networks to improve service levels and reduce costs. Through case studies and practical exercises, participants will develop skills in planning and executing logistics strategies effectively.					
Learning Outcomes					
After completing this course, the student will be able to: 1. Understand the fundamental role of logistics in supply chains and business competitiveness. 2. Apply logistics concepts in transportation, warehousing, inventory handling, and distribution. 3. Design efficient logistics networks that balance cost, service level, and sustainability. 4. Analyze logistics performance using appropriate metrics and decision tools. 5. Recognize the role of technology and third-party logistics in modern logistics systems					
Course Content				Assignments/Readings	
Week 1	Unit I: Introduction to Logistics Management 1.1 Definitions, scope, and evolution of logistics 1.2 Role of logistics in supply chain and quality/performance management 1.3 Logistics vs. supply chain management			Reading: Lambert et al., Ch. 1	
Week 2	Unit II: Logistics Strategy and Competitive Advantage 2.1 Linking logistics to customer service 2.2 Service-quality trade-offs and cost implications 2.3 Strategic logistics planning			Reading: Rushton et al., Ch. 2 Assignment 1: Analyze logistics strategies of two competing companies	
Week 3	Unit III: Transportation Management (I) 3.1 Modes of transportation: road, rail, air, sea 3.2 Selection criteria and cost structure			Reading: Lambert et al., Ch. 3 Exercise: Compare transport modes for domestic vs. international trade	
Week 4	Unit IV: Transportation Management (II) 4.1 Carrier selection and freight cost analysis 4.2 Intermodal transportation and route optimization			Reading: Rushton et al., Ch. 3 Assignment 2: Calculate optimal transport routes using Excel	
Week 5	Unit V: Warehousing and Facility Layout (I) 5.1 Warehouse functions and types 5.2 Material flow, layout, and storage systems			Reading: Lambert et al., Ch. 5	
Week 6	Unit VI: Warehousing and Facility Layout (II) 6.1 Cross-docking and distribution centers 6.2 Automation in warehousing and layout efficiency			Reading: Rushton et al., Ch. 5 Assignment 3: Case analysis on Amazon’s warehousing practices	
Week 7	Unit VII: Inventory and Materials Handling 7.1 Inventory positioning and packaging in logistics 7.2 Handling systems and equipment types			Reading: Lambert et al., Ch. 6	
Week 8	Midterm Examination			Midterm Exam	

Week 9	Unit VIII: Logistics Network Design (I) 9.1 Location decisions and facility layout 9.2 Network optimization basics	Reading: Rushton et al., Ch. 6 Assignment 4: Design a logistics network for a distribution company
Week 10	Unit IX: Information Technology in Logistics (I) 10.1 ERP, WMS, and TMS overview 10.2 Integration of logistics information systems	Reading: Lambert et al., Ch. 7
Week 11	Unit X: Information Technology in Logistics (II) 10.3 RFID, IoT, and blockchain applications 10.4 Data analytics in logistics optimization	Reading: Rushton et al., Ch. 7
Week 12	Unit XI: Global Logistics Management 11.1 International logistics and InCoTerms 11.2 Trade documentation and customs clearance	Reading: Lambert et al., Ch. 9 Assignment 5: Create a trade documentation checklist for an export shipment
Week 13	Unit XII: Outsourcing and 3PL/4PL Services 12.1 Role and types of logistics service providers 12.2 Advantages and challenges of outsourcing	Reading: Rushton et al., Ch. 10
Week 14	Unit XIII: Logistics Performance Measurement 13.1 Key metrics: cost, reliability, responsiveness, cycle time, and satisfaction 13.2 Benchmarking and continuous improvement	Reading: Lambert et al., Ch. 11
Week 15	Unit XIV: Sustainable and Green Logistics 14.1 Reverse logistics and recycling 14.2 Green transport and circular economy practices 14.3 Corporate responsibility and environmental compliance	Reading: Rushton et al., Ch. 12
Week 16	Final Examination	Final Exam
Textbooks and Reading Material		
1. Textbooks. - Lambert, D. M., Stock, J. R., & Ellram, L. M. Fundamentals of Logistics Management, Latest Edition. - Rushton, A., Croucher, P., & Baker, P. The Handbook of Logistics and Distribution Management, Latest Edition, Kogan Page. 2. Suggested Readings - Christopher, M. Logistics and Supply Chain Management, Pearson. - Coyle, J. J., et al. Transportation: A Supply Chain Perspective, Cengage Learning. - Selected case studies from Harvard Business Review and MIT Center for Transportation & Logistics.		
Teaching Learning Strategies		
- Lectures supported by case discussions and multimedia presentations. - Practical exercises using Excel, Power BI, or logistics simulation tools. - Group projects and in-class simulations (e.g., warehouse layout design, route optimization). - Guest lectures from logistics service providers and supply chain experts. - Field visits or virtual tours of warehouses or distribution centers		
Assignments: Types and Number with Calendar		
- Assignment 1 (Week 2): Logistics Strategy Analysis - Assignment 2 (Week 4): Transportation Route Optimization - Assignment 3 (Week 6): Warehousing Practices Case Study		

4. Assignment 4 (Week 9): Logistics Network Design
5. Assignment 5 (Week 12): International Logistics Documentation

Assessment

Sr. No.	Elements	Weightage	Details
1.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
2.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
3.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

Programme	BSQPM	Course Code	QPM-428	Credit Hours	3
Course Title	Service Management				
Course Introduction					
Service Management is the strategic approach to designing, delivering, managing, and improving the services an organization provides to its customers. This course explores the principles and practices essential for creating exceptional service experiences and fostering customer loyalty. Students will learn about service design, quality management, and the role of technology in service delivery. Key topics include service operations, customer relationship management, and performance measurement. Through case studies and real-world applications, participants will develop the skills necessary to manage services effectively in various industries.					
Learning Outcomes					
After completing this course, the student will be able to: 1. Provide an in-depth insight in managing and delivering quality services 2. Develop an understanding of the “state of the art” service management thinking Promote a customer service-oriented thinking					
Course Content				Assignments/Readings	
Week 1	Unit-I: The Role of Services in an Economy 1.1Importance of Services Sector 1.2 Dependency of Manufacturing on Services			● Reading: James A. Fitzsimmons (Ch. 1); Assignment: ● Relevant Case Study ● Course Outline Briefing Final Project Briefing	
Week 2	Unit-II: The Nature of Services			Reading: James A. Fitzsimmons(Ch. 2) Assignment: Relevant Case Study	
Week 3	Unit-III: Service Strategy			Reading: James A. Fitzsimmons(Ch. 3)	
Week 4	Unit-IV: DESIGNING THE SERVICE ENTERPRISE 4.1 New Service Development 4.2 Generic Approaches to Service System Design			Reading: James A. Fitzsimmons(Ch. 4)	
Week 5	Unit-V: Technology in Services			Reading: James A. Fitzsimmons(Ch. 5)	
Week 6	Unit-VI: Service Quality			Reading: James A. Fitzsimmons(Ch. 6) Assignment: Relevant Case Study	
Week 7	Unit-VII: Continuous Improvement			Reading: James A. Fitzsimmons(Ch. 6)	
Week 8	Midterm Review and Exam			Midterm Exam covering Units I–VII	

Week 9	Unit-VIII: The Service Encounter	Reading: James A. Fitzsimmons(Ch. 7)
Week 10	The Supporting Facility	Reading: James A. Fitzsimmons(Ch. 8)
Week 11	Service Facility Location	Reading: James A. Fitzsimmons(Ch. 9)
Week 12	Managing Projects	Reading: James A. Fitzsimmons(Ch. 10)
Week 13	Forecasting Demand for Services	Reading: James A. Fitzsimmons(Ch. 11) Assignment: Case study
Week 14	Managing Capacity and Demand	Reading: James A. Fitzsimmons(Ch. 12)
Week 15	Quantitative Models for Service Management ✧ Capacity Planning and Queuing Models ✧ Forecasting Demand for Services ✧ Managing Service Inventory ✧ Managing Waiting Lines	Reading: James A. Fitzsimmons(Ch. 13)
Week 16	Course Review and Final Project Presentation	Final Exam
Textbooks and Reading Material		
Text Books 1. Service management, strategy, operations and information technology; latest edition; Simmons, F., & Simmons, J. A. M. F. 2. Service management: An integrated approach to supply chain management and operations; Haksever, C., & Render, B.; latest edition. FT Press. Reading Material 3. Fitzsimmons, J. A. & Fitzsimmons, M. J. – <i>Service Management: Operations, Strategy, and Information Technology</i>Detailed explanation of service processes, design, and operations management. 4. Haksever, C., Render, B., Russell, R. S., & Murdick, R. G. – <i>Service Management and Operations</i>, Explores service operations strategy, capacity planning, and service quality improvement. 5. Johnston, R., & Clark, G. – <i>Service Operations Management: Improving Service Delivery</i>, focuses on how to design, deliver, and improve services effectively. 6. Grönroos, Christian – <i>Service Management and Marketing: Managing the Service Profit Logic</i> (Wiley), A classic book introducing the concept of service logic and relationship marketing.		
Teaching Learning Strategies		
1. Lectures using multimedia and whiteboard 2. Interactive discussions and exercises 3. Case studies and simulations 4. Group Projects and Presentations		
Assignments: Types and Number with Calendar		
1. Assignment 1 (Week 1–2): Case study 2. Assignment 2 (Week 4): Case study 3. Assignment 3 (Week 9): Case study		

4. Assignment 4 (Week 13): Case study			
Assessment			
Sr. No.	Elements	Weightage	Details
4.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
5.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
6.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.

Checklist for a New Academic Program

Parameters	YES/NO	
1. Department Mission and Introduction	YES ☐	NO ☐
2. Program Introduction	YES ☐	NO ☐
3. Program Alignment with University Mission	YES ☐	NO ☐
4. Program Objectives	YES ☐	NO ☐
5. Market Need/ Rationale	YES ☐	NO ☐
6. Admission Eligibility Criteria	YES ☐	NO ☐
7. Duration of the Program	YES ☐	NO ☐
8. Assessment Criteria	YES ☐	NO ☐
9. Courses Categorization as per HEC Recommendation	YES ☐	NO ☐
10. Curriculum Difference	YES ☐	NO ☐
11. Study Scheme / Semester-wise Workload	YES ☐	NO ☐
12. Award of Degree	YES ☐	NO ☐
13. Faculty Strength	YES ☐	NO ☐
14. NOC from Professional Councils (if applicable)	YES ☐	NO ☐

Program Coordinator

Chairperson