Course Title

Information & Communication Technologies (ICT)

Knowledge Pillar	Level	Name of Course	Course Code	Total Marks
Information Technology & Business Analytics [ITBA]	Intermediate Level I	Information & Communication Technologies (ICT)	TA223	50

Syllabus Structure

The syllabus comprises the following main topics with the relative study weightings:

Segment	Segment Title	Weight
A	Network Enterprise & the Digital Transformation	10%
B	Business Information Systems	20%
C	Planning, Design,& Implementations of Information Systems	30%
D	Real-world Business Information System	20%
E	Disruptive Technology	20%

Course Description

The Course is designed to provide a conceptual framework of Information Technologies that are directly associated with and affecting the career path of a professional accountant. It is assumed that the financial leader, e.g., the CMAs, should have basic computing and networking knowledge. Thus, the course emphasizes the Business Information System. This subject is designed to enable learners in providing knowledge of information technology with IT Infrastructure of Hardware and software, system development process and project, Internet, Cyber Security, Social collaboration and link with the enterprise and its application in day-to-day activities. Finally, the emphasis is given on disruptive technologies that are constantly changing our personal, business, or professional life. These will enable the aspiring professional accountant to keep pace with the trending IT world and lead the business from the front.

Course Objectives

This course aims to provide aspiring professional accountants a clear understanding of the digital transformation of business activities. The transformation wave necessitates a business leader to understand the concept of a business information system, it's planning, design and implementation process to gain optimum benefits in a digital environment and using information technology. This course also ensures learners to understand the alignment of business information systems with the strategies and with the social collaboration converging necessary ethical and security considerations.

Course Learning Outcomes

On successful completion of this course, the aspiring professional accountants will be able to:

1. demonstrate the effective use of information technology in business;
2. identify and analyze user needs in implementing computing-based systems;

3. understand and apply course of action appropriate for an ethical computing professional;
4. illustrate the organization of information technology in day-to-day business undertakings;
5. prepare a proposal of an IT project for an identified need within a specific scope;
6. understand the effect of contemporary changes in the field of computer science on business; and
7. align business information systems with the organizational strategic goals.

DETAILED CONTENTS

Parts	Topics	Level of study required	Subtopics	Learning outcomes of topics	Probable weight
A. Networked Enterprise & the Digital Transformation (10 Marks)	A1. Information Systems in Global Business	R, U, AP	• Information system (IS); • IS in business transformation; • Complementary assets; • IS and business processes; • IT and Business Processes; • Role of IS; • Role of IT in the systems for collaboration and social business; • Collaborative Culture and Business Processes; • Requirements for a successful IS; • Impact of IS on organizations; • Challenges of strategic IS.	Upon successful completion, students shall be able to: 1. describe how an information system works; 2. understand the strategic implications of IT on the business environment; 3. explain how IT is shaping business strategies.	70%
	A2. Ethical and Social Issues in Information Systems	U, C	• Ethical, social and political issues of an IS; • Concerns for individual privacy and intellectual property; • Effects of haws information systems.	4. build arguments in designing an information system focusing on the ethical, social and political aspects.	30%
B. Business Information Systems (20 Marks)	B1. Transaction processing and IT infrastructure	R, U	• Electronic & Mobile Commerce; • E-Commerce and M-Commerce; • Transaction Processing Activities, Control and Management Issues; • IT infrastructure; • Trends in computer hardware & software platforms; • Challenges of managing IT	5. understand the present trends and technologies that are being used in day-to-day trade practice.	40%

Parts	Topics	Level of study required	Subtopics	Learning outcomes of topics	Probable weight
			infrastructure and management solutions; • Principal components of the telecommunication network and key networking technologies; • Types of networks; • Internet Technology; • Wireless network, communication and Internet access.		
	B2. Foundations of Business Intelligence: Database and Information Management	U, AP, E	• File organization concepts; • Database management systems (DBMS); • Relational Database Management System (RDBMS); • Non-relational databases; • Designing Database; • Information policy, data administration and data quality assurance; • Vulnerability of information systems; • Business value of security and control; • Organizational framework for security and control; • IS Control, Risk Assessment, Security Policy, DR Planning and Business Continuity Planning; • Auditing Information Systems; • Tools and technologies for safeguarding information resources.	6. contrast different concepts of file organization; 7. describe steps in designing a database; 8. recognize the importance of information or cyber security.	60%
C. Planning, Design, & Implementations of Information Systems (30 Marks)	C1. Information Systems Planning Issues	R, U	• IS Planning: short-and long-range technology planning; • Data and information management issues; • IS Economics; • IS HR Planning; • Developing an IS strategic plan.	9. outline the requirements of short/long-range technology planning; 10. sketch a strategic plan for the information systems.	30%

Parts	Topics	Level of study required	Subtopics	Learning outcomes of topics	Probable weight
	C2. Information Systems Development	U, AP	• Overview of Systems Development; • Phases of SDLC; • SDLC Models; • Factors affecting Systems Development Success, Quality & Standards; • Use of Project Management, CASE, OOSD; • Systems Investigation; • System Analysis.	11. describe the phases in the systems development life cycle.	30%
	C3. Systems Design, Implementation, Maintenance and Review	U, E	• Systems Design; • Systems Implementation; • Systems Operation and Maintenance; • Systems Review; • Application of MIS in Business.	12. actively participate and lead the IT department to design the custom-made IS or procure a standardized solution.	40%
D. Real-world Business Information System (20 Marks)	D1. Enterprise Resource Planning	U, AP	• Introduction and definition of Enterprise Resource Planning (ERP); • Core Modules of an ERP System; • Role of Cost & Management Accountants in implementing practical real-life manufacturing ERP; • Challenges of implementing manufacturing ERP in large Bangladeshi organizations.	13. understand the generic information system, i.e., ERP; 14. discuss the challenges in implementing theoretical Cost and Management Accounting concepts by a real-world manufacturing ERP.	60%
	D2. Managing IT Project	U, AP, C	• Project management (PM); • PM in developing information systems; • Methods for selecting and evaluating IS projects and; • Aligning IS projects with the firm's business goals • Business value of IS; • Risk factors in IS projects.	15. illustrate the importance of project management in the process of systems development; 16. find the way to align IS with organizational goal; 17. identify and manage risk associated with IS projects.	40%

Parts	Topics	Level of study required	Subtopics	Learning outcomes of topics	Probable weight
E. Disruptive Technology (20 Marks)	E1. Blockchain and FinTech	R, U, AP	• Introduction to Blockchain; • Types of Blockchain Technologies, Bitcoin, Ethereum, Hyperledger; • Blockchain and wave of change; • Blockchain Ecosystem, Blockchain Exchanges, Blockchain Miners, Blockchain Applications; • Introduction to Financial Technology (Fintech); • Current Trends in Financial Technology; • The future of Fintech and the Banking Sector; • Fintech Applications.	18. understand how disruptive technology is shaping the new forms of business undertakings; 19. describe how the banking sector is rapidly changing the way it deals with its customers and the way it makes transaction with its stakeholders.	50%
	E2. Fourth Industrial Revolution and related issues	R, U	• Introduction to the Fourth Industrial revolution; • Impact of the Fourth Industrial Revolution on finance and accounts; • Opportunities & Challenges of the Fourth Industrial Revolution; • Introduction to Data Science Data Science for the Cost & Management Accountants; • Big Data; • Internet of Things (IoT); • Machine Learning.	20. understand the latest developments of computer science and its application in business.	50%

Here, R = Remembering; U = Understanding; AP = Applying; AN = Analyzing; E = Evaluating; C = Creating; D = Decision making; are the seven levels of learning developed based on the Bloom's Taxonomy.

Recommended Books and Learning Materials

Primary Textbook
1. ICMAB. (2021). ICMAB Learning Manual for Information & Communication Technologies.

Recommended Textbook (Latest Edition)
1. Laudon, K. C., & Laudon, J. P. (2020). *Management information systems: Managing the digital firm*. (16th ed.). Pearson.
2. Brien, J. O. (2011). *Management information systems: Managing information technology in the e-business enterprise*. (11th ed.). McGraw-Hill/Irwin.

Reference Books/Other Learning Materials (Latest Edition)

1. Shokeen, S., Singh, P., & Mann, S. (2018). *Information system management.* (1st ed.). I K International Publishing House.
2. Tapscot, D., & Tapscot, A. (2018). *Blockchain revolution.* (1st ed.). Brilliance Audio.
3. Furlonger, D., & Uzureau, C. (2019). *The real business of blockchain: How leaders can create value in a new digital age.* (1st ed.). Harvard Business Review Press.

ICT Course Mapping

PrOs	POs		POs	CLOs		CLOs	TLOs
PrO1	5		PO1	-		CLO1	1, 3, 5, 13, 14
PrO2	5		PO2	-		CLO2	2, 4, 10, 11, 13, 14
PrO3	7		PO3	-		CLO3	4, 8, 12
PrO4	4, 5		PO4	1, 2		CLO4	5, 6, 7, 8, 13
PrO5	-		PO5	4, 5		CLO5	4, 7, 9, 12, 15, 16, 17
PrO6	5, 6, 7		PO6	6, 7		CLO6	4, 8, 18, 19, 20
PrO7	5, 6, 7		PO7	3		CLO7	3, 9, 10, 16, 18, 20

Here, PrOs = Program Objectives; POs = Pillar Objectives; CLOs = Course Learning Outcomes; TLOs = Topic Learning Outcomes

Course Title

Marketing & Supply Chain Management (MSM)

Knowledge Pillar	Level	Course Title	Course Code	Total Marks
Management & Business Strategy [MBS]	Intermediate Level I	Marketing & Supply Chain Management (MSM)	MS224	50

Syllabus Structure

The syllabus comprises the following topics and study weightings:

Segment	Topics		Weight
A. Marketing (25 Marks)	1.	Marketing and the Marketing Process	10%
	2.	Understanding the Marketplace and Customer Value	10%
	3.	Designing a Customer Value-Driven Strategy and Mix	25%
	4.	Emerging issues in Marketing	5%
B. Supply Chain Management (25 Marks)	1.	Introduction to Supply Chain Management	5%
	2.	Supply chain planning and Design	15%
	3.	Supply Chain Process	20%
	4.	Supply Chain Integration Issues	5%
	5.	Emerging Issues in Supply Chain Management	5%

Course Description

This course describes marketing and supply chain management, the core areas of all business, in two parts. The first part of the course explains marketing as the creation of customer value and engagement in a fast-changing, increasingly digital and social marketplace. The first part of the course describes the key issues of marketing and is associated with basic concepts of marketing and marketing process; understanding the marketplace and customer value; designing customer value-driven strategy and mix and emerging issues in marketing. The second part of the course explains supply chain management as a systematic approach to manage the entire flow of information, materials and goods/services from raw material suppliers through factories and warehouses to the final end-customer in the right quantity and at the right time. This part also describes the key issues of supply chain management; planning and designing the supply chain; supply chain process and integration and the emerging issues related to the supply chain.

Course Objectives

The objective of this course is to develop the theoretical concepts of marketing and supply chain. This course expects to apply the theoretical concepts of marketing and supply chain in solving real-world problems. This course improves the basic understanding of recent developments and emerging issues in marketing and supply chain management. This course is designed to achieve competitive advantage and world-class performance and to improve the essential knowledge, technical skill and professionalism of the business leaders in marketing and supply chain.

Course Learning Outcomes

On successful completion of this course, the aspiring professional accountants will be able to:

1. understand the concept of marketing, marketing process and strategic marketing decisions;
2. understand the market environment and buying behavior of consumers and business buyer;
3. understand the customer value-driven strategy and mix for creating sustainable customer;
4. understand the basic concept of recent development and emerging issues in marketing;
5. understand the basic concept of supply chain and supply chain management;
6. understand the planning, design, process and integration issues of supply chain from raw material suppliers to the final end-customer through comprehensive theoretical discussion with practical applications; and
7. understand the basic concept of recent developments and emerging issues in supply chain.

DETAILED CONTENTS

Parts	Topics	Level of study required	Subtopics	Learning outcomes of topics	Probable weight
A. Marketing (50 Marks)	A1. Marketing and the Marketing Process	U, AP, AN, D	• Marketing: Creating Customer Value and Engagement: What is Marketing; Marketplace and Customer Needs; Designing a Customer Value -Driven Marketing Strategy and plan; Managing customer relationships and capturing customer value; The Changing Marketing Landscape; • Company and Marketing Strategy: Partnering to Build Customer Engagement, Value and Relationships: Company-Wide Strategic Planning: Defining Marketing's Role; Designing the Business Portfolio; Planning Marketing: Partnering to Build Customer Relationships; Marketing Strategy and the Marketing Mix; Managing the Marketing Effort and Marketing Return on Investment.	Upon successful completion, students shall be able to: 1. outline the steps in the marketing process; 2. discuss how to design business portfolios and develop growth strategies; 3. explain marketing's role in strategic planning; 4. sketch marketing strategies considering the relevant driving forces.	20%

Parts	Topics	Level of study required	Subtopics	Learning outcomes of topics	Probable weight
	A2. Understanding the Marketplace and Consumer Value	U, AP, AN, E, D	• Analyzing the Marketing Environment: The Microenvironment and macro environment; The Demographic and Economic Environments; The Natural and Technological Environments; The Political- Social and Cultural Environments; Responding to the Marketing Environment; • Consumer Markets, business market, Buyer Behavior and Business Buyer Behavior: Consumer market and business market; model of consumer behavior and business buyer behavior; Characteristics Affecting Consumer Behavior; Buying Decision Behavior and buyer decision process; The Buyer Decision Process for New Products; Business Buyer Decision Process; Engaging Business buyers with Digital and Social Marketing; Institutional and Government Markets.	5. explain how changes in the environmental factors affect marketing decisions /strategies; 6. identify the major factors that influence consumer and business buyer behavior; 7. describe the adoption and diffusion process for new products.	20%
	A3. Designing a Customer Value-Driven Strategy and Mix	U, AP, AN, E, D	• Customer Value -Driven Marketing Strategy: Creating Value for Target Customers: Customer Value Driven- Marketing Strategy; Market Segmentation; Market Targeting; Differentiation and Positioning; • Products, Services, Product Life- Cycle Strategies and Brands: Building Customer Value: What is a Product; Product and Service Decisions; Services Marketing; New Development	8. decide the major steps in designing a customer-driven marketing strategy; 9. describe the stages of the product life cycle and how marketing strategies change during a product's life cycle; 10. explain how digital marketing is shaping marketing strategy;	50%

Parts	Topics	Level of study required	Subtopics	Learning outcomes of topics	Probable weight
			Strategy; The New Product Development Process and Management; Product Life-Cycle Strategies; Additional Product and Service Considerations; Branding Strategy: Building Strong Brands; • Pricing: Understanding and Capturing Customer Value: What is a price; Major pricing strategies; New Product Pricing Strategies; Product Mix Pricing Strategies; Price Adjustment Strategies; Price Changes; Public Policy and Pricing; Other internal and external considerations affecting price decisions; • Promotional Activities: Advertising, Personal selling, Sales Promotion and Public Relations: Advertising and Major Advertising Decisions; Personal Selling; Managing the Sales Force; The Personal Selling Process; Sales Promotion; Public Relations and Major Public Relations Tools; • Digital and Sustainable Marketing: Direct and digital Marketing and Forms of direct and digital.	11. formulate marketing strategies (for product, promotion, pricing, etc.) considering the relevant internal and external factors; 12. discuss sustainable marketing and major social criticisms of marketing; 13. define consumerism and environmentalism and explain how they affect marketing strategies.	
	A4. Emerging issues in Marketing	U, AP	• Understand the basic concept of recent developments and emerging issues in marketing.	14. discuss the recent developments and emerging issues of marketing.	10%
B. Supply Chain Management (50 Marks)	B1. Introduction to supply chain management	R, U, AP	• Definition, objectives, and importance of supply chain and supply chain management; • decision phases in supply chain;	15. explain the three key phases in supply chain decision.	10%

Parts	Topics	Level of study required	Subtopics	Learning outcomes of topics	Probable weight
			• foundations of supply chain management; • process views of supply chain; • examples of supply chain; • current trends in supply chain management.	16. describe current trends in supply chain management.	
	B2. Supply chain planning and Design	R, U, AP, AN, E, D	• ERP: What is ERP? How ERP Connects the Functional Units; How Supply Chain Planning and Control Fits Within ERP; Performance Metrics to Evaluate Integrated System Effectiveness; • MRP: Understanding Material Requirements Planning; Material Requirements Planning System Structure; Example and Lot Sizing in MRP Systems; • Demand Forecasting in a Supply Chain: Role and characteristics of forecasting in a supply chain; Components of a forecast and forecasting methods; Basic approach to demand forecasting; Time-Series forecasting methods; Measures of forecast error; Selecting the best smoothing constant; Web-Based Forecasting; The role of IT in forecasting; forecasting in Practice; • Managing Demand and Supply in a Supply Chain: Responding to predictable variability in the supply chain; Managing supply; Managing demand; Aggregate Planning Techniques; Implementing sales and operations Planning in Practice; Yield Management;	17. explain and illustrate the implications of ERP and MRP in supply chain planning and design; 18. forecast demand in a supply chain using different methods; 19. design supply chain network managing demand and supply to improve synchronization in a supply chain; 20. comment on the issues in supply chain planning and design; 21. explain different strategies that may be used to mitigate risk in global supply chains.	30%

Parts	Topics	Level of study required	Subtopics	Learning outcomes of topics	Probable weight
			• Designing the Supply Chain Network: Designing the Distribution Network and Applications to Online Sales: The role of distribution in the supply chain; Factors influencing distribution network design; Design options for a distribution network; Online sales and the distribution network; • Designing the Supply Chain Network: Designing the Distribution Network and Applications to Online Sales: The role of distribution in the supply chain; Factors influencing distribution network design; Design options for a distribution network; Online sales and the distribution network; Distribution networks in Practice; • Designing Global Supply Chain Networks: The impact of globalization on supply chain networks; The offshoring decision: Total Cost; Risk management in global supply chains; Discounted cash flows; Evaluating network design Decisions using decision trees; • To Onshore or Offshore: Evaluation of global supply chain design decisions under uncertainty; Making global supply chain design decisions under uncertainty in Practice.		
	B3. Supply chain process	U, AP, AN, E, D	• Purchasing and Supply Chain Management; • Manufacturing in a Supply Chain Context; • Lean and six sigma in the supply Chains;	22. understand the basic concept and process of each element of supply chain process.	40%

Parts	Topics	Level of study required	Subtopics	Learning outcomes of topics	Probable weight
			• Inventory Management; • Logistics, distribution and transportation in a Supply Chain; • Warehousing; • Sourcing and procurement; • Returns Management; • Customer Service in a Supply Chain; • Order Fulfillment.		
	B4. Supply Chain Integration Issues	U, AP, AN, E, D	• Supply Chain Process Integration: The Supply Chain Management Integration Model; Factors Driving Supply Chain Integration; Benefits and obstacles to Process Integration along the Supply Chain; Managing Supply Chain Risk and Security; • Performance Measurement Along the Supply Chain: Viewing the Supply Chain as a Competitive Force; Traditional Performance Measures; World-Class Performance Measurement Systems; Supply Chain Performance Measurement Systems; Drivers of Supply Chain Performance; The Balanced Scorecard and the SCOR Model.	23. explain the reasons and implications of supply chain integration; 24. identify and comment on the major drivers of supply chain performance; 25. discuss how the balanced scorecard and SCOR models work.	10%
	B5. Emerging Issues in Supply Chain Management	U, AP	• Understand the basic concept of recent developments and emerging issues in supply chain: Information technology in supply chain; E- business and supply chain; Financial flow in a supply chain; recent developments and emerging issues in supply chain management.	26. discuss the implications of IT and E-business in supply chain; 27. comment on the recent developments and emerging issues of supply chain.	10%

Here, R = Remembering; U = Understanding; AP = Applying; AN = Analyzing; E = Evaluating; C = Creating; D = Decision making; are the seven levels of learning developed based on the Bloom's Taxonomy.

Recommended Books and Learning Materials

Primary Textbook
1. ICMAB. (2021). ICMAB Learning Manual for Marketing & Supply Chain Management.

Recommended Textbook (Latest Edition)
For Marketing
1. Kotler, P. & Armstrong, G. (2020). *Principles of marketing.* (18th ed.). Pearson.
2. Kotler, P., Kartajaya, H. & Setiawan, I. (2017). *Marketing 4.0: Moving from traditional to digital.* (1st ed.). Willey.
3. Kotler, P., Keller, K. L. & Chernev, A. (2021). *Marketing management.* (16th ed.). Prentice Hall.

For Supply Chain Management
1. Chopra, S. & Meindl, P. (2019). *Supply chain management: Strategy, Planning and operation.* (7th ed.). Pearson.
2. Wisner, J. D., Tan, K. C., & Leong, G. K. (2019). *Principles of supply chain management: A balanced approach.* (5th ed.). South-Western Cengage Learning.
3. Jacobs, F. R., & Chase, R. B. (2020). *Operations and supply chain management.* (16th ed.). McGraw -Hill Education.

Reference Books/Other Learning Materials (Latest Edition)
1. Ivanov, D., Tsipoulanidis, A. and Schonberger, J. (2021). *Global supply chain and operations management a decision-oriented introduction to the creation of value.* (3rd ed.). Springer.
2. Schroeder, R. G. and Goldstein, S. M. (2020). *Operations management in the supply chain decision and cases.* (8th ed.). McGraw- Hill.
3. Min, H. (2015). *The essentials of supply chain management: New business concepts and applications.* (1st ed.). Pearson.
4. Certified Supply Chain Professional. (2018). *Study manual of certified supply chain professional.*

MSM Course Mapping

PrOs	POs
PrO1	2
PrO2	1
PrO3	3
PrO4	4
PrO5	5
PrO6	4
PrO7	5, 7

POs	CLOs
PO1	1, 5
PO2	6
PO3	3
PO4	2,
PO5	2, 3, 6
PO6	-
PO7	4, 7

CLOs	TLOs
CLO1	1, 2, 3, 4, 5,
CLO2	5, 6, 7,
CLO3	7, 8, 9, 11, 12, 13,
CLO4	10, 14
CLO5	15, 16, 22
CLO6	17, 18, 19, 20, 21, 22, 23, 24, 25
CLO7	26, 27

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