

**Institute of Information & Communication
Technology (IICT)**

**Dhaka University of Engineering &
Technology (DUET)**

Program: Postgraduate Diploma in Business IT

Preface: In the current world, Information Technology (IT) is closely connected in every aspect of life including the business world. Businesses now use different types of software and IT systems for management, communication, production, etc. Moreover, to face the challenges of 4IR, the business professionals would require related IT knowledge. This new program, Postgraduate Diploma in Business IT, will help create more professionals in this field with advanced knowledge and practical skills in IT.

Objective: The objective of this program is to prepare students for professional career in business sector with necessary information technology knowledge and practical skills. The program focuses on business process and strategy, marketing and management science, business intelligence and information security.

Minimum Qualification for Admission:

For admission in PGD in Business Program, a candidate

1. must have four-year B.Sc. Engg./ B.Sc. In Mathematics, Physics, Statistics, or equivalent/ BBA, or equivalent degree from any recognized University.
2. must have a minimum GPA of 3.50 out of 5.00 or a first division or equivalent in S.S.C and H.S.C or in equivalent examinations.
3. must have at least 50% marks or a minimum GPA of 2.50 out of 4.0 or its equivalent in four-year Bachelor degree.

Degree Requirement

Minimum requirement for the degree is 24 credit hours of which 6 credit hours shall be assigned for a project.

Syllabus for PG Dip. in Business IT

Course No.	Course Title	Credit
ICT 5000	Project	6
Core Courses		
ICT 5107	Introduction to Business IT	3
ICT 5108	Database Management System	3
ICT 5109	Project Management for IT	3
ICT 5110	Information Security	3
Optional Courses		
ICT 5206	Accounting with IT	3
ICT 5207	Computing in Business	3
ICT 5208	Data Analytics	3
ICT 5209	Strategy and Technology	3
ICT 5210	Business Intelligence	3
ICT 5211	Business Process Management	3
ICT 5212	Marketing Science	3

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ICT 5213	Management Science	3
ICT 5214	Strategic Financial Management	3
ICT 5215	AI for Strategy	3
ICT 5216	IoT in Business	3
ICT 5217	Cloud Computing and Virtualization	3
ICT 5218	Ethics in ICT	3
ICT 5109	Enterprise Resource Planning (ERP) Systems	3

Details of the Offered Courses

ICT 5107: Introduction to Business IT **3 Credits**

Foundational Concepts of IT, Evolution of IT in Business, IT Infrastructure in Business, Business Process Optimization, Case Studies and Real-world Examples, Ethical Considerations, Emerging Trends, Organizational Implications, Role of IT Professionals, Skills Development

ICT 5108: Database Management System **3 Credits**

Introduction to Databases, Database Environment, Database Modeling, Enhanced ER Model, Relational Model and Logical Database Design, Physical Database Design, relational algebra, SQL and advanced SQL, database design and the entity-relationship model, Relational database design and normalization, application design and development, indexing, Database storage and file structure, transaction management, concurrency control recovery management, object database and database administration, Database Security, Emerging Trends in Database Management.

ICT 5109: Project Management for IT **3 Credits**

Introduction to Project Management, Project Initiation and requirement engineering, Project Planning, Agile Methodologies, Waterfall Methodology, Project Execution, Change Management, Risk Management, Quality Management, Project Closure, IT Tools and Software, Case Studies and Practical Applications.

ICT 5110: Information Security

3 Credits

Introduction to information security: security principles, access control mechanisms, authentication schemes; cyber-attacks: examples, tools, and methodologies, network security: firewall, intrusion detection system; cyber defense techniques; Intellectual properties in business; Cyber Security laws; information security policies for sustainable business.

ICT 5206: Accounting with IT

3 Credits

Fundamentals of Accounting, Accounting Software, Integration of IT in Accounting Processes, Data Management and Analysis, Automation and Artificial Intelligence (AI) in Accounting, Cloud-Based Accounting Systems, Security and Data Privacy, Integration with Enterprise Systems, Reporting and Analytics, Auditing and Compliance, Emerging Trends such as blockchain for auditing and distributed ledger technology (DLT) for transaction recording

ICT 5207: Computing in Business

3 Credits

Introduction to programming: Logic flow, procedural versus object-oriented programming, data types, operators, expressions, input-output, control structures, arrays, functions, file access, exception handling; Developing algorithms and user-defined functions; Simple programming with Matlab; Web programming: HTML, CSS, Browsers; Application of programming in business: case studies.

ICT 5208: Data Analytics

3 Credits

Overview of data: data attributes, data structures, data ecosystem, examples of data analytics; Analytical theory and methods: recommendation, clustering, classification, regression; Application of tensor flow and neural network in data analysis: analysis of images, OCR applications; data visualization techniques; data analytics applications in business.

ICT 5209: Strategy and Technology

3 Credits

Overview of structural and strategic analysis, strategy information, strategy execution, competitive strategy; Dynamic Strategy Equilibrium; Technology focused strategy: Strategy driver, business case studies; Challenges of governing technology-intensive firms; Build and sustain competitive advantage in new, emerging technologies with high degrees of uncertainty.

ICT 5210: Business Intelligence

3 Credits

Concepts of business intelligence (BI): components and functionality of information systems; business problems solving using operational data; Data warehouse: data management systems, decision support systems, knowledge management systems, big data; Design and implementation of BI: Online analytical processing (OLAP) and Visualization capabilities to create visualizations and dashboards; Case studies to explore the use of application software, web tools, success and limitations of BI as well as technical and social issues.

ICT 5211: Business Process Management

3 Credits

Overview of business analysis, Business processes and business process analysis, business analysis planning and monitoring, Elicitation and collaboration, Life cycle management, Strategy analysis, Identifying organization's key performance indicators (KPIs), dashboard, balance scorecard, strengths, weaknesses, opportunities, and threats (SWOT); Requirements analysis and design definition; Application of process modeling techniques and decision modelling techniques; Process performance measurement and assessment, Solution evaluation and Process transformation; Business process management (BPM): overview and its relationships with total quality management (TQM), business process re-engineering (BPR) and enterprise resource planning (ERP).

ICT 5212: Marketing Science

3 Credits

Key concepts: Definition of markets, customers, and competitors; Analyzing the company, context, competition, and consumer to draw marketing implications; Evaluation of marketing alternatives in terms of their potential profitability; Apply the concept of the product life cycle to understand how consumer needs change over time and draw implications for marketing decisions, segmentation, targeting and product design, product launch and forecasting, pricing strategy and communications, distribution and strategic channel decisions; Corporate management; Management simulation: case studies.

ICT 5213: Management Science

3 Credits

Introduction to management science: Problem solving and decision making, quantitative analysis models of cost, revenue, and profit; Project evaluation and review technique (PERT) and critical path method (CPM): overview, modeling, estimation, and review techniques; material management: objectives, inventory functions, inventory models with probabilistic demand, store management; Simulations: Real applications of simulation, operational and financial models, simulating games of chance.

ICT 5214: Strategic Financial Management **3 Credits**

Introduction: meaning, functions, characteristics, scope, importance and constraints of strategic financial management (SFM), profit maximization vs wealth maximization, financial management (FM); Strategic decision making: strategic decision making and its importance, steps involved in decision making process, approaches, rationality in decision making, classes of decision making, decisions under certainty, risk, and uncertainty; Investment strategy: risk and uncertainty, sources of risk, techniques of investment decision under risk and uncertainty, certainty equivalent method, statistical methods, decision tree analysis; Financial analysis: meaning and objectives of financial analysis, sources of information for financial statement analysis, steps of a financial statement analysis, traditional and modern approaches to financial statement analysis; Forecasting financial statements: meaning and definition of financial forecasting, purpose, use, and importance of financial forecasting, tools of forecasting financial statement.

ICT 5215: AI for Strategy **3 Credits**

Converging technologies and the rise of the fourth industrial revolution; Understanding AI and machine learning (ML); Exploring AI applications: visual, linguistic, and predictive tasks, considerations for developing an AI strategy; AI powered technology: use cases in the industry, examining the role of humans and AI, comprehending the benefits and opportunities of AI in business; Generating AI opportunities and ideas for business, identifying the people, resources, and project management capabilities required for an AI idea; AI and business support functions; AI applications in autonomous vehicles and transportation.

ICT 5216: IoT in Business

3 Credits

Introduction to IoT: definition, characteristics, physical and logical design, and functional block of IoT; IoT and Machine2Machine(M2M): M2M, similarities and differences between M2M and IoT; IoT Business: home automation, application in cities, industries and agriculture, applications in health and lifestyle; IoT system implementation strategies.

ICT 5217: Cloud Computing and Virtualization

3 Credits

Introduction to Cloud Computing, Cloud Deployment Models, Virtualization Technology, Cloud Service Providers, Cloud Infrastructure Management, Cloud Security and Compliance, Cloud Migration Strategies, Scalability and Elasticity, DevOps and Continuous Integration/Continuous Deployment (CI/CD), Serverless Computing, Cost Management, Emerging Trends.

ICT 5218: Ethics in ICT

3 Credits

Ethics & Info Technology, Ethics in the Field, Ethical Theories, Privacy & Surveillance, Internet of Things, Intellectual Property, Controlling Content, Love & Sex, War & Play, Human & Non-Human, Money & eWaste, Hacking & Fake News, Info Justice, Professional Ethics.

**ICT 5109: Enterprise Resource Planning (ERP) 3 Credits
Systems**

Introduction to ERP Systems, ERP System Architecture, ERP Implementation Methodologies, Business Process Mapping and Reengineering, ERP Modules, Customization and Configuration, Data Migration and Integration, User Training and Change Management, ERP System Maintenance and Support, ERP System Governance and Security.