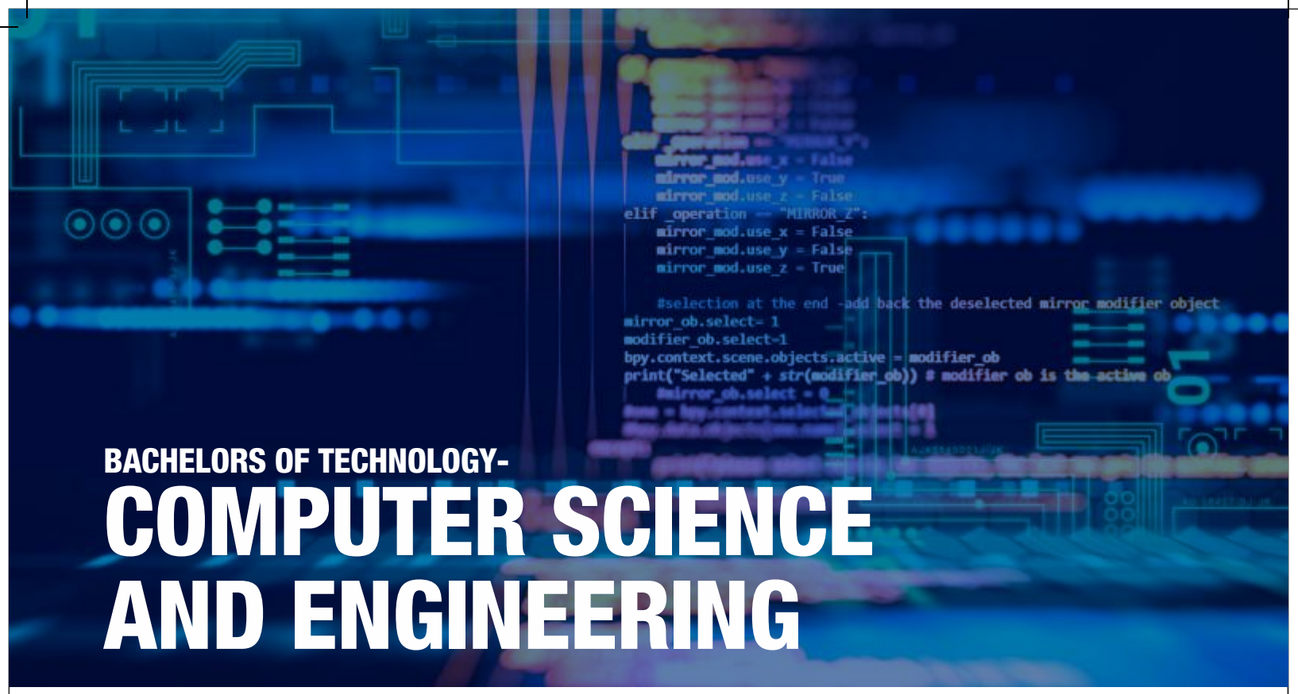

BACHELORS OF TECHNOLOGY-

COMPUTER SCIENCE AND ENGINEERING

This programme equips students with the skills needed to contribute to this exciting and rapidly evolving field. It is this combination of skills that enable our graduates to keep pace with this fast-moving subject and secure rewarding careers that can be pursued almost anywhere in the world. The students acquire technical knowledge, skills and background for designing and organisation of computer systems.

The programme helps the students in their ability to critically evaluate design paradigms, languages, algorithms, and techniques used to develop complex software systems. They also learn to evaluate and respond to opportunities for developing and exploiting new technologies. The programme offers tremendous flexibility and learning opportunities through credit based approach. This programme helps students to undertake professions encompassing innovation and problem solving by means of computational techniques and technologies; students can also undertake advanced studies for research careers; besides they can start up with their own enterprises.

PROGRAMME OUTCOME

Students of B.Tech. - Computer Science & Engineering, on the completion of graduation will be able to:-

1. Acquire and apply mathematical foundations, computer science theory and principles knowledge for modelling and designing of computer based systems.
2. Develop the ability to evaluate design paradigms, languages, algorithms, and techniques to develop complex hardware/software systems in all domains like health care, banking and finance, law, etc
3. Develop innovative technical solutions to fulfil the rapidly evolving industry demands.
4. Think independently, take initiative, lead a team of engineers or researchers and inculcate team spirit.

CAREER OPTIONS

Computer Science & Engineering graduates can make a career in areas like:

- Web Applications
- Embedded Systems
- Computer Security
- Computer Graphics
- Network Administration
- Database Systems
- Video Games
- Mobile Applications
- Animation
- Enterprise Computing
- Scientific Modelling
- Wireless Network

PROGRAMME FEE

Fee Per Year (In USD)	*Fee Per Year (In so'm)*	*Fee Per Semester (In USD)*	*Fee Per Semester (In so'm)*
$5000	42,800,000	$2550	21,830,000

SPECIALIZATIONS OFFERED

- CSE with specialization in Cyber Security
- CSE with specialization in Artificial Intelligence & Machine Learning

PROGRAMME STRUCTURE

- Credits required for graduation: 240
- Credits required as essential distribution requirement: 200
- Credits free to choose from anywhere (including from programme and specialization beyond minimum): 40 (Subject to meeting the prerequisites).

UNIVERSITY CORE:

- Basic English course OR Intermediate English Course
- Proficient English Language Course OR Advanced English Language through Literature
- Professional Ethics
- Principles of Management for Engineers
- Introduction to Sociology-humanities
- Uzbekistan History-I/Uzbekistan History-II
- Capstone Design-I
- Capstone Design-II

SCHOOL CORE:

- Problem Solving Using Programming Language with Lab
- Object Oriented Programming with LAB
- Programming Project Lab
- Chemistry
- Chemistry Lab
- Principles of Electrical Engineering and Electronics
- Basics of Electronics
- Principles of Electrical Engineering and Electronics Lab
- Math-I
- Math-II
- Discrete Structure
- Physics-I with Lab
- Physics-II

PROGRAMME CORE:

- Computer Organization and Architecture
- Data Structures with Lab
- Introduction to Computer Science & Engineering/ Introduction to AI-ML/Introduction to Cyber Security & Laws
- Principles of Operating System with Lab
- Theory of Computation
- Database Management System with Lab
- Project Based Learning (PBL) - 1
- Design and Analysis of Algorithm with Lab
- Software Engineering and Testing Methodologies with Lab
- Computer Networks with Lab
- Project Based Learning (PBL) -2
- Internet & Web Technologies with Lab
- Compiler Design with Lab
- System Simulation & Modeling
- Project Based Learning (PBL) -3
- Artificial Intelligence with Lab
- Introduction to Virtualization and Cloud Computing

ELECTIVES

COMPUTER SCIENCE AND ENGINEERING:

Mathematical Techniques
Introduction to Graph Theory and its Applications
Application Development with Android
Concepts of Neural Networks
Introduction to Cloud Computing
Ethical Hacking
Quantum Computing
Digital Image Processing
Free and Open source software
Human Computer Interaction with Lab
Introduction to Big data
Cryptography and Network Security
3D Printing and Software Tools
Risk Management
Software Project Management
Introduction to Internet of Things
Parallel Computing Algorithms
Mobile Computing
Software Testing
Wireless networks

COMPUTER SCIENCE AND ENGINEERING WITH SPECIALISATION IN ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

Concept of Machine Learning
Concepts of Neural Networks
Soft Computing
Digital Image Processing
Pattern Recognition
Deep Learning and Its Applications
Recommender Systems
Introduction to Natural Language Processing
Applications of AIML in healthcare/ICT/Computer Networks
Computer Vision

COMPUTER SCIENCE AND ENGINEERING WITH SPECIALISATION IN CYBER SECURITY

Digital forensics
Security Architecture
Ethical Hacking
Disaster Recovery Management
Cryptography and Network Security
Malware Analysis
Information Security & Audit Monitoring
Intrusion Detection and Prevention System
Introduction to IoT and It's Security
Security Threats Intelligence and Risk Management

BACHELORS OF TECHNOLOGY-

INFORMATION TECHNOLOGY

B.Tech in Information Technology prepares students to learn to programme in a higher-level language, work effectively with a client and members of a software development team to analyse, specify, design, implement test and document software that meets the client's needs. It also prepares students to acquire new computer-related skills independently as technologies evolve, communicate technical concepts to non-technical persons, develop a plan to integrate hardware and software into a particular environment and conduct themselves in an ethical and professional manner. This programme equips students to prepare for management and support positions in the field of information technology by providing hands-on training in hardware, software, networking, user support, project management, technology maintenance and trouble-shooting etc. Information Technology deals with the use of electronic computers and computer software to store, protect, process, transmit and securely retrieve data. This programme offers myriad opportunities from programming to network development to software design effectively in every walk of life.

PROGRAMME OUTCOME

Students of B.Tech - Information Technology, on the completion of graduation will be able to:-

1. Acquire and apply mathematical, science knowledge and engineering skills for modelling and designing solutions to real world problems.
2. Analyze and recommend the appropriate IT infrastructure required for the implementation of a project.
3. Explore IT specific literature/research and analyse design and develop IT solutions for emerging problems in various domains like health care, banking and finance, law, etc
4. Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools.
5. Install technical hardware and software including network, database and security components.

CAREER OPTIONS

Information Technology graduates can achieve career as:

- Computer Hardware Engineer
- Network Systems and Data Analyst
- Database Administrator
- Computer and Information Scientist
- Software Engineer
- Programmer
- Systems Administrator
- Information Systems Manager
- Systems Analyst
- Support Specialist

PROGRAMME FEE

Fee Per Year (In USD)	*Fee Per Year (In so'm)*	*Fee Per Semester (In USD)*	*Fee Per Semester (In so'm)*
$5000	42,800,000	$2550	21,830,000

SPECIALIZATIONS OFFERED

- IT with specialization in Business Analytics
- IT with specialization in Internet of Things (IoT)

PROGRAMME STRUCTURE

- Credits required for graduation: 240
- Credits required as essential distribution requirement: 200
- Credits free to choose from anywhere (including from programme and specialization beyond minimum): 40 (Subject to meeting the prerequisites).

UNIVERSITY CORE

- Basic English course OR Intermediate English Course
- Proficient English Language Course OR Advanced English Language through Literature
- Professional Ethics
- Principles of Management for Engineers
- Introduction to Sociology-humanities
- Uzbekistan History-I/Uzbekistan History-II
- Capstone Design-I
- Capstone Design-II

SCHOOL CORE

- Problem Solving Using Programming Language with Lab
- Object Oriented Programming with Lab
- Programming Project Lab
- Chemistry
- Chemistry Lab
- Principles of Electrical Engineering and Electronics
- Basics of Electronics
- Principles of Electrical Engineering and Electronics Lab
- Math-I
- Math-II
- Discrete Structure
- Physics-I with Lab
- Physics-II

PROGRAMME CORE

- Computer Organization and Architecture
- Data Structures with Lab
- Introduction to Information Technology
- Principles of Operating System with Lab
- Android Application Development with Lab
- Data Base Management System with Lab
- Project Based Learning (PBL)-I
- Design and Analysis of Algorithm with Lab
- Software Engineering and Testing Methodologies with Lab
- Human Computer Interaction with Lab
- Project Based Learning (PBL)-II
- Internet & Web Technologies with Lab
- Compiler Design with Lab
- Introduction to open source and Open standards
- Project Based Learning (PBL)-III
- Artificial Intelligence with Lab
- Introduction to Virtualization and Cloud Computing

ELECTIVES

INFORMATION TECHNOLOGY:

Mathematical Techniques
Introduction to Graph Theory and its Applications
Application Development with Android
Advanced Computer Architecture
Concepts of Neural Networks
Introduction to Cloud Computing
Ethical Hacking
IT Infrastructure
Digital Image Processing
Free and Open source software
IT Infrastructure Management
Introduction to Big data
Cryptography and Network Security
Managing Big data Infrastructure
Risk Management
E-Commerce
Introduction to Internet of Things
Network Programming & Administration
Mobile Computing
Enterprise Resource Planning
Wireless networks

INFORMATION TECHNOLOGY WITH SPECIALIZATION IN INTERNET OF THINGS (IOT)

Embedded System
IoT Architecture and Programming
Raspberry Pi and its Programming
IoT: Sensing & Actuator Devices
Wireless Technologies for IoT
Android with IoT
Artificial Intelligence for IoT
Industrial IoT 4.0
IoT Security
IoT Applications

INFORMATION TECHNOLOGY WITH SPECIALIZATION IN BUSINESS ANALYTICS

Probability and Statistics
Business Process Management
Data Mining & Data Warehousing
Data Exploration and Visualization
Statistical Analysis
Business for Data driven Companies
Predictive Analytics
Big Data Analytics
Business Intelligence
Marketing Analytics