



COMPUTER SCIENCE AND COMMUNICATIONS ENGINEERING

Four-year first cycle academic studies (240 ECTS)
with 9 different specialization/differentiation profiles

STUDY PROGRAM STRUCTURE

Semester 1		EKTC
101.	Calculus 1	6
102.	Structured Programming	6
103.	Application Software	6
104.	Basic Skills English	5
	Elective	6

Semester 2		EKTC
201.	Calculus 2	6
202.	Advanced Programming	6
203.	Digital Logic and Systems	6
204.	Computer Architecture and Organization	6
	Elective	6

Semester 3		EKTC
301.	Algorithms and Data Structures	6
302.	Object-Oriented Programming	6
303.	System Software	6
304.	Data Communications and Networking	6
	Elective	6

Semester 4		EKTC
401.	Database Design and Implementation	6
402.	Visual Programming	5
403.	Software Engineering	6
404.	Fundamentals of Information Systems	6
	Elective	6

Semester 5		EKTC
501.	Database Management Systems	6
502.	Numerical Analysis and Mathematical Modeling	6
503.	Business Information Systems	6
	Elective	6
	Elective	6

Semester 6		EKTC
601.	Computer System and Network Security	6
602.	Principles of Multimedia Systems	5
603.	Computer-Aided Design and Manufacturing	6
	Elective	6
	Elective	6

Semester 7		EKTC
	Elective	6
	Elective	6
	Elective	6
	University Elective	6
	University Elective	6

Semester 8		EKTC
	Elective	6
	Elective	6
	University Elective	6
	University Elective	5
899.	Diploma Thesis	6

Duration: **4 years (8 semesters)**

Degree: **Bachelor of Science in Computer Science and Communications Engineering – BSc CSCE**

ELECTIVES

SEMESTER 1 ELECTIVES

- 105. Core Engineering Concepts in ICT
- 106. Information Society Concepts

SEMESTER 3 ELECTIVES

- 305. Discrete Mathematics
- 306. Introduction to Business
- 307. Business Communication Skills

SEMESTER 5 ELECTIVES

- 504. Information Systems Analysis and Logical Design
- 505. Biomedical Sciences and Health IT
- 506. Biometrics
- 507. Web-Based Systems and Applications
- 508. Industrial Informatics
- 509. Web Programming
- 510. Computer Graphics and Computer Vision
- 511. Modeling for Games
- 512. Networking Standards and Devices
- 513. Computer Networks Design and Management
- 514. Parallel and Multicore Computing
- 515. Organizational Entrepreneurship
- 516. Financial Informatics
- 517. Virtual Societies

SEMESTER 7 ELECTIVES

- 701. 3D Computer Modeling
- 702. Network Services Administration
- 703. Enterprise Systems
- 704. User Interfaces and HCI
- 705. Cryptographic Algorithms and Protocols
- 706. Health Informatics
- 707. E-Business Process Modeling
- 708. Network Forensics
- 709. Multimedia Networks
- 710. Optical Communications
- 711. Special Effects Game Programming
- 712. Sensor Networks and Systems
- 713. Service-Oriented Architecture
- 714. Systems of Knowledge
- 715. Data Warehouses and Analytical Processing
- 716. Electronic Funds Transfers and Payments
- 717. ICT Project Management
- 718. Entrepreneurial Economics
- 719. Organizational Behavior and Development

SEMESTER 2 ELECTIVES

- 205. Web Design
- 206. Computer-Mediated Communication and Social Networking

SEMESTER 4 ELECTIVES

- 405. Probability and Statistics
- 406. Scientific Visualization and Virtual Environments
- 407. Operations Research
- 408. Small Business Management
- 409. Teams and Teamwork

SEMESTER 6 ELECTIVES

- 604. Database Administration
- 605. Wireless Electromagnetic Channels
- 606. Digital Forensics and Investigations
- 607. Game Dynamics
- 608. Advanced Game Graphics
- 609. Bioengineering Fundamentals
- 610. Fundamentals of Artificial Intelligence
- 611. Software Requirements and Business Analysis
- 612. Physical Design and Implementation of Information Sms.
- 613. Innovation Management
- 614. Financial Engineering Software
- 615. E-Government and e-governance
- 616. English for Specific Purposes

SEMESTER 8 ELECTIVES

- 801. Wireless and Mobile Networks
- 802. Artificial Intelligence for Video-Games
- 803. Virtualization and Cloud Computing
- 804. Electronic Health Records
- 805. E-Learning
- 806. Intelligent Systems
- 807. Health Information Systems
- 808. IT Security Policies and Procedures
- 809. Computer-Integrated Manufacturing
- 810. Mobile Applications
- 811. Data Mining and Big Data Analytics
- 812. Development for Mobile Platforms
- 813. Robotics and Automation
- 814. Decision Support Systems and Business Intelligence
- 815. Internet Banking
- 816. Technical Support Operations Management
- 817. Intellectual Capital and Competitiveness
- 818. Introduction to Ethics

Core academic subjects
Soft skills

SPECIALIZATION AND/OR DIFFERENTIATION PROFILES

- RECOMMENDED ELECTIVES BY SEMESTER -

1 Computer Science and Computational Engineering

Core Engineering Concepts in ICT

Discrete Mathematics

Parallel and Multicore Computing

Information Systems Analysis and Logical Design

Web Programming

Systems of Knowledge

Data Warehouses and Analytical Processing

Service-Oriented Architecture

Organizational Entrepreneurship

Entrepreneurial Economics

Web Design

Probability and Statistics

Fundamentals of Artificial Intelligence

Bioengineering Fundamentals

Virtualization and Cloud Computing

Data Mining and Big Data Analytics

Innovation Management

Intellectual Capital and Competitiveness

English for Specific Purposes *

2 Software Engineering

Information Society Concepts

Business Communication Skills

Web Programming

Web-Based Systems and Applications

Service-Oriented Architecture

User Interfaces and HCI

Special Effects Game Programming

Parallel and Multicore Computing

ICT Project Management

Web Design

Teams and Teamwork

Software Requirements and Business Analysis

Financial Engineering Software

Development for Mobile Platforms

Mobile Applications

IT Security Policies and Procedures

Intellectual Capital and Competitiveness

English for Specific Purposes *

3 Computer Graphics and Game Programming

Core Engineering Concepts in ICT

Business Communication Skills

Computer Graphics and Computer Vision

Modeling for Games

3D Computer Modeling

User Interfaces and HCI

Special Effects Game Programming

ICT Project Management

Organizational Behavior and Development

Web Design

Scientific Visualization and Virtual Environments

Advanced Game Graphics

Game Dynamics

Artificial Intelligence for Video-Games

Development for Mobile Platforms

Mobile Applications

Innovation Management

English for Specific Purposes *

4 Communication Technologies

Core Engineering Concepts in ICT

Discrete Mathematics

Computer Networks Design and Management

Networking Standards and Devices

Network Services Administration

Multimedia Networks

Cryptographic Algorithms and Protocols

Sensor Networks and Systems

Optical Communications

Computer-Mediated Communication and Social Networking

Probability and Statistics

Wireless Electromagnetic Channels

Physical Design and Implementation of Information Systems

Wireless and Mobile Networks

Virtualization and Cloud Computing

Technical Support Operations Management

Introduction to Ethics

English for Specific Purposes *

5 Computer Forensics

Core Engineering Concepts in ICT

Discrete Mathematics

Biometrics

Networking Standards and Devices

Network Services Administration

Cryptographic Algorithms and Protocols

Network Forensics

Electronic Funds Transfers and Payments

Virtual Societies

Computer-Mediated Communication and Social Networking

Operations Research

Digital Forensics and Investigations

Database Administration

IT Security Policies and Procedures

Wireless and Mobile Networks

Data Mining and Big Data Analytics

Technical Support Operations Management

Introduction to Ethics

English for Specific Purposes *

6 Information Systems

Information Society Concepts

Introduction to Business

Information Systems Analysis and Logical Design

Web-Based Systems and Applications

Enterprise Systems

Systems of Knowledge

Data Warehouses and Analytical Processing

Electronic Funds Transfers and Payments

Organizational Behavior and Development

ICT Project Management

Web Design

Teams and Teamwork

Physical Design and Implementation of Information Systems

Database Administration

Decision Support Systems and Business Intelligence

E-Learning

E-Government and e-governance

Internet Banking

English for Specific Purposes *

7 Applied e-Technologies

Information Society Concepts

Introduction to Business

Biomedical Sciences and Health IT

Virtual Societies

E-Business Process Modeling

Systems of Knowledge

Health Informatics

Enterprise Systems

Electronic Funds Transfers and Payments

Financial Informatics

Computer-Mediated Communication and Social Networking

Small Business Management

E-Government and e-governance

Bioengineering Fundamentals

Financial Engineering Software

E-Learning

Electronic Health Records

Health Information Systems

Decision Support Systems and Business Intelligence

Internet Banking

English for Specific Purposes *

8 Machine Intelligence and Manufacturing Systems Engineering

Core Engineering Concepts in ICT

Business Communication Skills

Industrial Informatics

Computer Graphics and Computer Vision

Sensor Networks and Systems

3D Computer Modeling

User Interfaces and HCI

Organizational Entrepreneurship

Entrepreneurial Economics

Web Design

Scientific Visualization and Virtual Environments

Fundamentals of Artificial Intelligence

Bioengineering Fundamentals

Robotics and Automation

Intelligent Systems

Computer-Integrated Manufacturing

Data Mining and Big Data Analytics

English for Specific Purposes *

9 ICT Entrepreneurship and Small Business Management

Information Society Concepts

Introduction to Business

Organizational Entrepreneurship

Financial Informatics

Virtual Societies

Electronic Funds Transfers and Payments

ICT Project Management

Entrepreneurial Economics

Organizational Behavior and Development

Enterprise Systems

Computer-Mediated Communication and Social Networking

Small Business Management

Innovation Management

Financial Engineering Software

E-Government and e-governance

English for Specific Purposes (ESP) *

Internet Banking

Technical Support Operations Management

Intellectual Capital and Competitiveness

Introduction to Ethics

Decision Support Systems and Business Intelligence



... Be Smart!