MADENAT ALELEM UNIVERSITY

جامعـة مدينـــة العلــم

الكلية التقنية الهندسية

First Cycle – bachelor's degree (B.Eng.)
Department of **Cybersecurity Technology Engineering**
Engineering Technical College
Madenat Alelem University

بكالوريوس - هندسة تقنيات الأمن السيبراني (الدورة الأولى) – الكلية التقنية الهندسية – جامعة مدينة العلم

1. نظرة عامة

يتناول هذا الدليل المقررات الدراسية التي يقدمها برنامج هندسة تقنيات الأمن السيبراني للحصول على درجة البكالوريوس. يقدم البرنامج (49) مادة دراسية، مع (7200) إجمالي ساعات حمل الطالب و٢٤٠ إجمالي وحدات أوروبية. يعتمد تقديم المواد الدراسية على عملية بولونيا.

تتألف المواد الدراسية ال 49 من 45 مادة دراسية موزعة بين اساسية، أولية، وساندة و4 مواد اختيارية يتم اختيارها من ضمن 10 مواد اختيارية كلية.

2. Courses 2025-2026

Module 1

Code	Course/Module Title	ECTS	Semester
CSTE1101	**Introduction to Information System**	6	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
2	3	79	71
Description			
The purpose of this course is to provide computer literacy for the student. The course prepares the student for a successful working relationship with computerized systems. It will present to him/her what the computer is, what it can and cannot do, how it operates, how it is programmed, how it is used as a tool in decision-making, and the social implementations of computer usage.			

Module 2

Code	Course/Module Title	ECTS	Semester
CSTE1102	**Fundamental of Electrical Eng.**	6	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
2	3	79	71
Description			
This Course Specification prepares the student to realize basic parameters in electrical engineering and how to link these parameters. It also makes him capable of solving electrical circuits using different DC theorems.			

Module 3

Code	Course/Module Title	ECTS	Semester
CSTE1104	**Programming Essentials**	6	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
2	3	79	71
Description			

1. To develop problem solving skills and understanding of programming principles.
2. To understand the logic behind programming.
3. This course includes using C++ as a programming language.
4. This course includes algorithm design.
5. To understand how a programmer should prepare his work and think logically.
6. To perform programming project using control statements, functions, and to deal with the data stored in an array or file.

Module 4

Code	Course/Module Title	ECTS	Semester
CSTE1103	**Mathematics I**	5	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
3	1	63	62
Description			
This course is oriented towards providing the 1st year students with the required mathematical preliminaries needed to achieve a full grasp of the knowledge included in the engineering and technical application of their specialization. Furthermore, it is a prerequisite to the course Mathematics II.			

Module 5

Code	Course/Module Title	ECTS	Semester
EETC102	**Engineering Drawing**	5	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
	4	63	62
Description			
1. Introducing the student to the importance of engineering tools and ways to use them in drawing geometric shapes and projections. 2. Training the student to design electrical maps that contain electrical switches and integrated circuits.			

Module 6

Code	Course/Module Title	ECTS	Semester
MTU1006	**Democracy & Human Rights**	2	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
2		33	17
Description			
The lesson aims to teach the student and familiarize him with topics related to human rights, public freedoms, and democracy, history, types and practices, as well as international conventions and national constitutions related to them, and election mechanisms and methods			

Module 7

Code	Course/Module Title	ECTS	Semester
CSTE1201	**Digital Logic Design**	6	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
2	3	79	71
Description			
Training students on the basics of logic circuits used in electronic computers and how they work.			

Module 8

Code	Course/Module Title	ECTS	Semester
CSTE1202	**Ethics for the Information Age**	4	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
2	1	48	52
Description			
An overview of ethics for computing majors, includes history of computing, intellectual property, privacy, ethical frameworks, professional ethical responsibilities, and risks of computer-based systems.			

Module 9

Code	Course/Module Title	ECTS	Semester
CSTE1203	**General Physics**	5	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
2	3	79	46
Description			
provides students with a coherent understanding of energy, matter, and their interrelationships. It focuses on investigating natural phenomena and then applying patterns, models (including mathematical ones), principles, theories and laws to explain the physical behavior of the universe.			

Module 10

Code	Course/Module Title	ECTS	Semester
CSTE1204	**Mathematics II**	5	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
3	1	63	62
Description			
. The course mathematics II is oriented towards providing the 1st year students with the required mathematical preliminaries needed to achieve full grasp of the knowledge included in the engineering and technical application of their specialization. Furthermore, it is a prerequisite to the course Engineering Mathematics.			

Module 11

Code	Course/Module Title	ECTS	Semester
EETC101	**Engineering Workshops**	6	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
	4	64	86
Description			
The student will be able to: 1. Identify electronic components. 2. It uses electronic components to build simple circuits and weld it. 3. Examination of electronic circuits and their components.			

Module 12

Code	Course/Module Title	ECTS	Semester
MTU1001	**Arabic Language**	2	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
2		33	17
Description			
This course aims to teach the students the proper use of the Arabic language in their formal communication, especially written as they become members of a working body whether in the private or public sector. Clear and concise communicable language is a must in any work environment, and this course delivers on the clarity component.			

Module13

Code	Course/Module Title	ECTS	Semester
MTU1002	**English Language (1)**	2	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
1	1	33	17
Description			
Learn the rules of the English language, recognize new words, improve the level of listening, writing and reading, and develop speaking skills			

Module 14

Code	Course/Module Title	ECTS	Semester
CSTE2101	**Engineering Mathematics**	6	3
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
3	1	63	87
Description			
The course Applied Mathematics is oriented towards providing the 2nd year students with the necessary background material to perform mathematical analysis embedded in the engineering and technical application of their specialization. Furthermore, it is a prerequisite to the course advanced applied mathematics.			

Module 15

Code	Course/Module Title	ECTS	Semester
CSTE2104	**Electronics Fundamentals**	6	3
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
2	3	79	71
Description			
Introducing the student to the language of electronics, elements, and basics of electronics, and studying the properties of electronic materials How to manufacture them and understand the practical applications of diodes, transistors and amplifiers.			

Module 16

Code	Course/Module Title	ECTS	Semester
CSTE2106	**Linux Essentials**	5	3
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
2	3	79	46
Description			
1. install, configure and manage Linux-systems, 2. explain the file system structure and the underlying security model, 3. account for and manage the most common commands in a Linux system, 4. write simpler programs in command languages (scripts) and 5. give examples of different techniques used to work with remote computers.			

Module 17

Code	Course/Module Title	ECTS	Semester
CSTE2103	**Computer Organization & Architecture**	6	3
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
2	3	79	71
Description			
Introducing the student to computer architecture and how a group of software and hardware equipment interact with each other. To form a computer system that is, how to design a computer system, what technologies are compatible with it, and how to build microprocessors and interconnections. Organizing the basic units that make up the computer system and how the internal devices interact with each other.			

Module 18

Code	Course/Module Title	ECTS	Semester
CSTE2102	**Data Structure & Algorithms**	5	3
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
2	3	79	46
Description			
The purpose of this course is to provide the basic foundations of data structure and algorithms. A data structure is defined as a particular way of storing and organizing data in our devices to use the data efficiently and effectively. The goal of using data structures is to minimize the time and space complexities. An efficient data structure takes minimum memory space and requires minimum time to execute the data. Having a strong understanding of data structures and algorithms can improve students programming skills and coding abilities. It is important that students taking this Module have prior knowledge in programming.			

Module 19

Code	Course/Module Title	ECTS	Semester
MTU1007	**The crimes of the Baath Regime in Iraq**	2	3
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
2		33	17
Description			
Crimes of the Baath regime according to the law of the Supreme Iraqi Criminal Court in 2005. During its rule, the Baath regime in Iraq committed a large number of different crimes, and their differences require a clarification of the concepts. And definitions for the student to be knowledgeable about what he is going through that is related to the subject of the curriculum, such as the concept of crime and its selection and the international crimes for which the leaders and cronies of the Baath regime were sentenced according to the law of the supreme Iraqi Criminal Court. Accordingly, this semester will be in two sections: the first section explains the concept of crimes and the other topic is a statement of crime.			

Module 20

Code	Course/Module Title	ECTS	Semester
CSTE2201	**Numerical Analysis & Statistics**	5	4
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
3	1	63	62
Description			
The course advanced applied mathematics is oriented towards providing the 2nd year students with advanced material to perform complicated engineering and technical application mathematical analysis of their specialization.			

Module 21

Code	Course/Module Title	ECTS	Semester
CSTE2202	**Object Oriented Programming**	6	4
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
2	3	79	71
Description			
Introducing the student to object-oriented programming			

Module 22

Code	Course/Module Title	ECTS	Semester
CSTE2203	**Microprocessors**	6	4
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
3	3	94	56
Description			

1. To understand the basic operating concept of specific microprocessor.
2. To study the hardware architecture of specific microprocessor.
3. To encode programs based on the specific processor language.
4. To solve problems encountered in the architecture of a specific microprocessor

Module 23

Code	Course/Module Title	ECTS	Semester

CSTE2105	Communication Fundamentals	6	4
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
2	3	79	71
Description			
The Communications Systems curriculum aims to learn and understand the communications system, analyze and represent continuous signals, and identify Filters, their types and applications, and learn the basics of embedding and encoding techniques.			

Module 24

Code	Course/Module Title	ECTS	Semester
CSTE2205	**Introduction to Data base - SQL**	5	4
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
2	3	79	46
Description			
1. To learn the theory of the database. 2. To understand The Entity Relationship Model. 3. To Introduce SQL and SQL and relational database concepts. 4. To understand the Constraints imposed in a database. 5. Learn about Boolean Operators in SQL. 6. Learn about Normalization of a database. Learn about Storage and Query Processing, transaction, and recovery			

Module 25

Code	Course/Module Title	ECTS	Semester
MTU1003	**English Language (2)**	2	4
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
1	1	33	17
Description			
This course combines solid grammar and practice, vocabulary development, and integrated skills with communicative role-plays and personalization. Authentic material from a variety of sources enables students to see a new language in context, and a range of comprehension tasks, language and vocabulary exercises, and extension activities practice the four skills. 'Everyday English' and 'Spoken grammar' sections practice real-world speaking skills, and a writing section for each unit at the back of the book provides models for students to analyze and imitate.			

Module 26

Code	Course/Module Title	ECTS	Semester
CSTE2204	**Computer Network Fundamentals**	5	5
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
2	3	79	46
Description			
Introducing the student to the basics of computer networks, their types, how to design and operate them, and methods of connecting them and their applications and its functions.			

Module 27

Code	Course/Module Title	ECTS	Semester
CSTE3102	**Information Security & Cryptography**	5	5
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
2	3	79	46
Description			
prepare students with the technical knowledge and skills needed to protect and defend computer systems and networks. To develop graduates that can plan, implement, and monitor cyber security mechanisms to help ensure the protection of information technology assets			

Module 28

Code	Course/Module Title	ECTS	Semester
CSTE3103	**Digital Signal Processing**	5	5
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
2	3	79	46
Description			
This subject aims to learn signals and systems classifications, determine the LTI systems outputs, learn the Fourier transform and Fourier series, learn the z transform, learn types of filters and design FIR and IIR filters			

Module 29

Code	Course/Module Title	ECTS	Semester
CSTE3104	**Software Engineering**	5	5
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
2	3	79	46
Description			
To help students to develop skills that will enable them to construct software of high quality – software that is reliable, and that is reasonably easy to understand, modify and maintain			

Module 30

Code	Course/Module Title	ECTS	Semester
CSTE3105	**Python Programming**	5	5
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
2	3	79	46
Description			
1. Introducing students to the fundamental concepts and principles of Python programming language. 2. Develop students' proficiency in writing Python code and solving programming problems. 3. Familiarize students with essential programming constructs, such as variables, data types, control flow structures, and functions. 4. Provide students with a solid foundation in object-oriented programming (OOP) and its application in Python. 5. Enable students to work with various data structures and perform operations on them. 6. Prepare students for practical application of Python in real-world scenarios, such as data manipulation, web scraping, and GUI development.			

Module 31

Code	Course/Module Title	ECTS	Semester
CSTE3106	**Digital Forensics**	5	5
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
2	3	79	46
Description			
1. This course presents an overview of the principles and practices of digital investigation. 2. emphasize the fundamentals and importance of digital forensics. 3. learn different techniques and procedures that enable them to perform a digital investigation.			

4. analysis of physical storage media and volume analysis. It covers the major phases of digital investigation such as preservation, analysis and acquisition of artifacts that reside in hard disks and random-access memory.

Module 32

Code	Course/Module Title	ECTS	Semester
CSTE3206	**Multimedia Security**	5	5
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
2	3	79	46
Description			
This course will equip students with a deep understanding of multimedia security's theoretical and practical aspects. This course aims to prepare students to protect and secure multimedia content, which includes images, videos, and audio, in various applications and industries.			

Module 33

Code	Course/Module Title	ECTS	Semester
CSTE3101	**Cybersecurity Essentials**	5	6
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
2	3	79	46
Description			
prepare students with the technical knowledge and skills needed to protect and defend computer systems and networks. To develop graduates that can plan, implement, and monitor cyber security mechanisms to help ensure the protection of information technology assets			

Module 34

Code	Course/Module Title	ECTS	Semester
CSTE3202	**Artificial Intelligence**	5	6
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
2	3	79	46
Description			
The purpose of this course is to provide the basic information of Artificial Intelligence (AI). Today, artificial intelligence has conquered almost every industry. Machine learning, especially deep			

learning.

This Module will help the student to build a solid knowledge in the basics of AI.

Module 35

Code	Course/Module Title	ECTS	Semester
CSTE3203	**Operating Systems**	5	6
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
2	3	79	46
Description			
udents will learn how Operating System is Important for Computer System. • To make aware of ferent types of Operating System and their services. • To learn different process scheduling algorithms d synchronization techniques to achieve better performance of a computer system. • To know virtual emory concepts. • To learn secondary memory management.			

Module 36

Code	Course/Module Title	ECTS	Semester
CSTE3204	**Web Design**	5	6
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
2	3	79	46
Description			
1. Enable the student to understand the principles of effective web design: 2. To develop proficiency in HTML, CSS, and Basic JavaScript. 3. Have the student capable of Implementing Responsive web design. 4. To apply UX/UI Design concepts correctly. 5. To create web designs that is integrated with backend languages. Getting familiar with the already existing CMS solutions which dominate the market in terms of market share and public adaptation.			

Module 37

Code	Course/Module Title	ECTS	Semester
CSTE3107	**Computer Network Protocols**	5	6
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
2	3	79	46
Description			

Introducing the student to the basics of computer networks, their types, how to design and operate them, and methods of connecting them and their applications and its functions.

Module 38

Code	Course/Module Title	ECTS	Semester
CSTE3207	**Wireless Networks Security**	5	6
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
2	3	79	46
Description			
1. understand the main security goals and adversarial models of wireless and mobile networks; 2. gain a broad knowledge regarding real-world security architectures of WLANs, GSM/UMTS, WSNs, etc.; 3. be able to reason about wireless security protocols and protection techniques, discuss proposed solutions and their limitations; 4. have an overview of the recent advances regarding lightweight authentication, key management for wireless networks, secure localization, and wireless device pairing.			

Module 39

Code	Course/Module Title	ECTS	Semester
CSTE4108	**Information Theory and Coding**	5	6
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
2	3	79	46
Description			
To enable learning information, and probability theory. Introduction to information theory. Information Source, Encoding a Source Alphabet, Some Particular Code and Huffman method, algorithm. CRC,			

Module 40

Code	Course/Module Title	ECTS	Semester
CSTE3201	**Advanced Cybersecurity**	6	7
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
2	4	94	56
Description			
To prepare students with the technical knowledge and skills needed to protect and defend computer			

systems and networks to develop graduates that can plan, implement, and monitor cybersecurity mechanisms to help ensure the protection of information technology assets.

Module 41

Code	Course/Module Title	ECTS	Semester
CSTE4102	**Network Security**	6	7
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
2	4	94	56
Description			
This course aims to provide students with a solid foundation in network security, including principles, best practices, and hands-on experience. Students will learn about various security threats, techniques for securing networks, and gain practical skills in network defense.			

Module 42

Code	Course/Module Title	ECTS	Semester
CSTE4103	**Cloud Computing**	6	7
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
2	3	79	71
Description			
In this on-line course we plan to give students an overview of the field of Cloud Computing, and an in-depth study into its enabling technologies and main building blocks. Students will gain hands-on experience solving relevant problems through projects that will utilize existing public cloud tools. It is our objective that students will develop the skills needed to become a practitioner or carry out research projects in this domain			

Module 43

Code	Course/Module Title	ECTS	Semester
CSTE4104	**Cybersecurity Governance**	5	7
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
2	2	64	61
Description			

provide undergraduate students with a solid foundation in cybersecurity governance, risk management, and compliance (GRC). Students will explore the principles and practices of GRC, including risk assessment, legal and regulatory requirements, and the role of governance in protecting critical assets.

Module 44

Code	Course/Module Title	ECTS	Semester
CSTE4105	**Project Preparation**	2	7
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
1	1	33	17
Description			
The project enables the student to demonstrate his ability in building, implementing, and programming a system (hardware, software, or both) where he reflects his analytical thinking and the acquired technical skills as well as the theoretical foundation in getting the project done.			

Module 45

Code	Course/Module Title	ECTS	Semester
CSTE4106	**Biometric Security**	5	7
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
2	3	79	46
Description			

This course deals with Biometric security and the main aims of its are:

1. Developing problem-solving skills and understanding of single and multi-biometric system
2. Developing an understanding of the use of biometric traits for forensic identification, law enforcement, and security
3. Understanding single and multi-Biometric system
4. Understanding Biometric Authentication

Understanding cancelable Biometric approaches

Module 46

Code	Course/Module Title	ECTS	Semester
CSTE4107	**Web Applications Security**	5	7
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
2	3	79	46
Description			

The purpose of website security is to prevent these (or any) sorts of attacks The more formal definition of website security is the act/practice of protecting websites from unauthorized access, use, modification, destruction, or disruption

Module 47

Code	Course/Module Title	ECTS	Semester
CSTE4101	**Ethical Hacking & Penetration Testing**	6	8
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
2	4	94	56
Description			
The course teaches beginners about computer systems with the permission of the organization. People who have a keen interest in the field of technology can opt for this course. Ethical hacking is a process wherein professionals use the vulnerabilities of a network/ system to detect intrusions from malicious hackers.			

Module 48

Code	Course/Module Title	ECTS	Semester
CSTE4202	**IoT Security**	6	8
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
2	4	94	56
Description			
1. Demonstrate knowledge and understanding of the security and ethical issues of the Internet of Things 2. Conceptually identify vulnerabilities, including recent attacks, involving the Internet of Things 3. Conceptually describe countermeasures for Internet of Things devices 4. Analyze the societal impact of IoT security events 5. Developing critical thinking skills 6. Compare and contrast the threat environment based on industry and/or device type			

Module 49

Code	Course/Module Title	ECTS	Semester
CSTE4203	**Mobile Security**	5	8
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**

2	3	79	46
Description			
Learn mobile device and mobile application penetration testing and ethical hacking through comprehensive course content and instructor-guided, hands-on lab.			

Module 50

Code	Course/Module Title	ECTS	Semester
MTU1008	**Professional Ethics**	3	8
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
2	1	48	27
Description			
The module aims to: 1. To develop an understanding of the fundamental concepts and principles of engineering ethics. 2. To explore ethical theories and frameworks relevant to engineering practice and decision-making. 3. To familiarize students with codes of ethics and professional conduct in the engineering field. 4. To cultivate ethical decision-making skills and the ability to analyze and resolve ethical dilemmas in engineering. 5. To promote awareness of social, environmental, and global dimensions of engineering ethics and their impact on professional practice.			

Module 51

Code	Course/Module Title	ECTS	Semester
CSTE4205	**Final Project**	5	8
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
	5	78	47
Description			
The project enables the student to demonstrate his ability in building, implementing, and programming a system (hardware, software, or both) where he reflects his analytical thinking and the acquired technical skills as well as the theoretical foundation in getting the project done.			

Module 52

Code	Course/Module Title	ECTS	Semester
CSTE4206	**Machine Learning Systems**	5	8
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
2	3	79	46
Description			
This course deals with Machine Learning system. Understanding ML, Motivation and role of machine learning in computer science and problem solving. Representation (features), linear transformations, Appreciate linear transformations and matrix vector operations in the context of data and representation. Have sound mathematical understanding of popular ML algorithms. Preparedness to use state-of-the-art machine learning algorithms in formulating and solving new problems. Capability to train (or solve optimization problems) ML models with applications in real-world use cases.			

Module 53

Code	Course/Module Title	ECTS	Semester
CSTE4207	**Cloud Security**	5	8
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/sem)**
2	3	79	46
Description			
In this on-line course we plan to give students an overview of the field of Cloud Computing, and an in-depth study into its enabling technologies and main building blocks. Students will gain hands-on experience solving relevant problems through projects that will utilize existing public cloud tools. It is our objective that students will develop the skills needed to become a practitioner or carry out research projects in this domain.			

Contact

Program Coordinator:

- Saad T. Y. Alfalahi | MSc. in Electrical Engineering| Lecturer
  Email: saad.t.yasin@mauc.edu.iq
  Mobile no.: +964 7717464868
