Course Description

The course extensively explores multimedia security, focusing on protecting digital content through steganography, digital watermarking, and digital rights management. It covers the theoretical and practical aspects of watermarking, including the application of DCT and IDCT in watermarking processes, and discusses various watermarking technologies and models.

1. Educational Institution/ college	Tikrit University/College of Computer Science and Mathematics
2. Scientific Department/Center:	Computer Science Department
3. Course name/code:	Multimedia security and networks
4. Available attendance formats:	Weekly
5. Course /year:	Second Course 2023/2024
6. Number of study hours (total):	30 theoretical hours and 30 practical hours

1. Course objectives

1- Provide a strong foundation in multimedia systems.
2- Enabling the student to understand the basics of multimedia security science
3- Protecting multimedia content during its transmission over the Internet.

2. Course Outcomes and Teaching, Learning and Evaluation Methods

A- Knowledge objectives

    a1- Knowing the basics of multimedia and network security.

    a2- Knowledge and understanding of multimedia security functions.

    a3- Knowledge of multimedia security programming and network protection

    a4- Know how to benefit from multimedia in protecting data and networks.

B - The skills objectives of the course

The students responded clearly to the subject through the course teacher's evaluation as a result of the students' interaction during the explanation of the topics to be taught and through their effective contribution to using multimedia security programs and their ability to apply them.

    b1 - Enabling the student to choose the best way to hide information and protect rights.

    b2 - Teaching the student about the dangers that exist on the Internet.

Teaching and learning methods

Theoretical Lectures

Practical Lectures

Evaluation methods

    1. Direct questions during the theoretical lecture

    2. Daily exams in each lecture on the subject of the previous lecture

    3. Homework, assignments and reports

    4. Monthly exams

C- Expressive and value objectives

c-1 Asking them in the lecture and assigning them to search for the answer by searching on the Internet.

c-2 Do not transfer solutions between groups of students by changing the tasks from one group to another.

c-3 Push the student to commit to attending theoretical lectures by taking daily exams.

3. Course structure

Number of teaching hours		Syllabus Vocabulary	Week
Practical	Theoretical		
2	2	Introduction of Multimedia	.1
2	2	Multimedia Security Concepts	.2
2	2	Steganography Concepts	.3
2	2	Digital Watermarking	.4
2	2	Digital Watermarking (cont.)	.5
2	2	Digital Rights Management	.6
2	2	Digital Watermarking Technologies	.7
2	2	Digital Watermarking Technologies (cont.)	.8
2	2	Types of Digital Watermarks	.9
2	2	Image Watermarking	.10
2	2	Image Watermarking in the network communication	.11
2	2	The Concepts of the DCT and IDCT in Watermarking	.12
2	2	Models of Watermarking-Geometric models	.13
2	2	Audio Watermarking	.14
2	2	Video Watermarking	.15

4. Infrastructure

1- Required prescribed books	Nothing
2- Main references (sources)	Shih F.Y. (Ed.) - Multimedia Security: Watermarking, Steganography, and Forensics 2012.