ASK PC

WE'VE THE ANSWER!

Digital Watermarking

Techniques & Applications

❖ Course Objectives

- To discuss the basics of Information security.
- To discuss the basics of multimedia.
- To study the basics of data hiding techniques.
- To study the digital watermarking techniques.
- To simulate digital watermarking techniques.
- To implement digital watermarking techniques

❖ Type of Delivery

Instructor-Led Training

❖ Duration

5 Weeks – 3 Sessions per week

3 hours/ Session

❖ Training Benefits

- Professional Instructor
- Professional Presentations
- Software Simulation
- Software Emulation
- Exam & Final Project
- CEUs certificate for Professional Engineers
- Special discount for IEEE members
- Internationally recognized certificate

❖ **A few of the covered topics are**

- Data Hiding Techniques: An Overview
- Convert Channels
- Steganography
- Copyright
- Digital Watermarking: An Overview
- Encoding Process
- Decoding Process
- Types of Digital Watermarks
- Watermarking Applications
- Copyright Protection and Authentication
- Fingerprinting and Digital “Signatures”
- Copy Protection and Device Control
- Broadcast Monitoring
- Problems of Digital Water Marking
- Robustness
- Imperceptibility
- Security
- Complexity
- Attacks on Digital Watermarks
- State of Art Watermarking Attacks
- Estimation-based Attacks
- Digital Watermarking Techniques
- Minimum Square Error
- Peak Signal-to-Noise Ratio
- Transform Domain Watermarking
- VHDL: An Overview
- Introduction to VHDL Language
- Field Programmable Gate Array
- Complex Programmable Logic Device
- Examples of VHDL
- FPGA: An Overview

Please refer to course catalogue to see full covered topics.

❖ Target Audiences

This course is Suitable for Communications Engineering students at level 3 and 4 and newly admitted engineers. It is suitable also for Computer Engineering students at level 3 or 4 or newly admitted engineers. It is recommended for students studying information systems and computer science, level 3 or 4.

❖ Prerequisites

- Digital Signal Processing.
- Digital Image Processing.
- Information Security.
- Number Theory.
- Matlab Fundamentals

❖ Course certification

Upon successfully completing course assessment, quizzes, final project and exam, you will be eligible to get your internationally recognized certificate. This course is offering CEUs from IEEE and IACET for more information: www.ieee.org/partners

❖ About the Instructor

This course is delivered by **Dr. Mohamed Abdel Azim**. He is currently an assistance professor at Mansoura University. He has wide experience of teaching Electronics and Communications Engineering courses in various Universities in Egypt.
http://mansvu.mans.edu.eg/cv/en/showcv.php?id=5063

❖ Course References

- Juergen Seitz, "Digital Watermarking for Digital Media," Information Science Publishing, 2005.
- Kutter, M., & Hartung, F. (2000). Introduction to watermarking techniques. In S. Katzenbeisser & F. Petitcolas (Eds.), *Information hiding: Techniques for steganography and digital watermarking* (pp. 97–120). Artech House.
- Bloom, J. et al. (1999). Copy protection for DVD video. *Proceedings of the IEEE, 87*(7), 1267–1276.