

2021

الدكتوراه

2022

Computer Network & Internet

- The OSI model and TCP/IP protocol suite.
- TCP / IP Network layer.
- IPv4 addressing
- Delivery and Forwarding of IP packets.
- IP v4
- Address Resolution Protocol ARP
- Internet Control Message Protocol ICMP
- Unicast Routing Protocol
- Multicasting and multicast routing protocol

Ref1: "TCP/IP Protocol Suite" by Behrouze

Ref2: "Data Communication" by Behrouze

Advanced Artificial Intelligence

- Soft computing
 - Fuzzy logic
 - Neural Network
 - Genetic Algorithms
- Expert systems
- Neural expert systems
- Hybrid intelligent systems
- Intelligent NN
- Knowledge representation

Ref1: "Artificial Intelligence, structures and strategies for complex problem solving", By: George Luger & William Stubblefield

Ref2: "Artificial intelligence, a guide to intelligent systems"

By: Michael Negnevitsky

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Operating System

- 1- Processes
- 2- Threads
- 3- Process synchronization
- 4- CPU scheduling
- 5- Deadlocks
- 6- Memory management and virtual memory
- 7- Mass-storage and file system
- 8- Security and protection

Ref1: "Operating System Concepts"

By Abraham silberschatz, Peter bear galvin, Greg gagne. 9th ed., 2013

Advanced Microprocessor

- 1- The 8088 and 8086 microprocessor and their memory and input/output interfaces
- 2- Interrupt interfaces
- 3- Pc bus interface
- 4- Real mode software and hardware 80286
- 5- Protected mode 80386,80486 and Pentium (software and hardware)

Ref1. "The 8088 and 8086 Microprocessors, programming, interfacing, software, hardware, and application",

By Trieble and singh, 4th ed., 2003

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Network Security

- Security Attack, Security Services, Security Mechanisms
- Attack on TCP/IP
- Electronics Mail Security
- IP Security
- Web Security
- Intrusion Detection
- Firewall

Ref1: "Cryptography and Network Security: Principles and Practice" (2nd Ed.), William Stallings, Prentice-Hall, Inc., 1999.

Ref2: "Cryptography and Network Security: Principles and Practice" (7th Ed.), William Stallings, Prentice-Hall, Inc., 2016

Image & Signal Processing

- Introduction
- Image fundamentals
- Image transformation
- Image enhancement
- Image compression
- Segmentation
- Restoration
- Shape Representation

Ref. 1

- Introduction
- Fundamentals of discrete time signals
- Digital filters

Ref. 2

Ref1: "Digital Image Processing" by Rafael Gonzales.

Ref2: "Fundamentals of Digital Signal Processing" by Lonnes C. Ludeman