

Ministry of Higher Education & Scientific Research

University of Anbar

College of Computer Science  
and Information Technology

Computer Networks Systems Department



كَلِيَّةُ عِلْمِ الْحَاسِبِ وَتَكْنُولُجِيَا الْمَعْلُومَاتِ

وَزَارَةُ التَّعْلِيمِ الْعَالِيِّ وَالْبَحْثِ الْعِلْمِيِّ

جَامِعَةُ الْأَنْبَارِ

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قِسْمُ أَنْظِمَةِ شَبَكَاتِ الْحَاسِبِ

## Department of Computer Networks Systems

### Course Description Form

Course Title: Microprocessors.

Course Code:

Semester: I

Level: B.Sc.

Class: 2<sup>nd</sup>

Academic Year: 2022/2021

Course Instructor: Fouad H. Awad

Academic status: Teacher

Place of work: college of computer science and information technology

Credit Hours: Sunday (8:30- 10:30) and Thursday (11:30 – 2:00)

Instructor Office Hours: Sunday and Thursday.

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كلية علوم الحاسوب وتكنولوجيا المعلومات

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## Lecture Schedule:

Weeks	Topics
Week 1	Introduction to computer system ,Von Neumann and Harvard architectures , comparison between Microprocessor and Microcontroller .
Week 2	Memory hierarchy ,cache memory principle ,Locality of references ,types of locality .
Week 3	Cache and main memory organizations , Memory performance measures , Relation between cache memory and active program portion .
Week 4	Memory management unit , Replacement process , Cache mapping techniques , Direct mapping , Fully associative mapping , Set associative mapping .
Week 5	Comparison between cache memory mapping techniques , Effect of cache on overall performance , Main and cache memory hardware types(DRAM,SRAM)
Week 6	Virtual memory aim , page table , Virtual address to physical address translation technique with examples , TLB .
Week 7	Architecture of 80386 , signals description of 80386 , Buses masters and slaves , 80386 memory model spaces , Logical and physical addresses with paging .
Week 8	Hardware organization of memory address space , 8086 registers overview , Real mode and Protected mode in 80286 , Segment selector .
	<b>Midterm Exam</b>
Week 9	Offset memory address , Instruction pointer register , Real mode address generation .
Week 10	Calculation of physical address .
Week 11	Protected mode address generation , segment register , Segment selectors and descriptors .
Week 12	
Week 13	Descriptors (Local ,global , number of it ) , Protection of OS authorization using RPL register , 80386\80486 and Pentium Processors Program Invisible Registers .
Week 14	Bus cycles of 80386 , 80386 bus states , Pipelined and non pipelined machine bus cycles .
Week 15	BIU ,EU ,Coproprocessor , Operand storing locations , addressing modes .