Name of Institute: ITE
Name of Faculty: Shikha Singh

Course code:CS0501
Course name: Advance Microprocessor
Pre-requisites: Digital Logic Design
Credit points: 3
Offered Semester: V

Course Coordinator (weeks 01 - 12)
Full Name: Shikha Singh
Department with sitting location: ECE, 3rd Floor, Faculty Wing, Bhanwar Building, ITE - IU
Telephone:#3333
Email: shikhasingh.ec@indusuni.ac.in
Consultation times:09.00 AM – 10.00 AM (Working Saturdays)

Course Lecturer (weeks xx - XX)
Full Name: Shikha Singh
Department with sitting location: ECE, 3rd Floor, Faculty Wing, Bhanwar Building, ITE - IU
Telephone:#3333
Email: shikhasingh.ec@indusuni.ac.in
Consultation times:09.00 AM – 10.00 AM (Working Saturdays)

Students will be contacted throughout the Session via Mail with important information relating to this Course.

Course Objectives
By participating in and understanding all facets of this Course a student will:

1. To understand basic architecture of 16 bit and 32 bit microprocessors.
2. To understand interfacing of 16 bit microprocessor with memory and peripheral chips involving system design.
3 .To learn the architectural features of the 80286/386/486 processors.
4 .The technical overview of the Pentium family, Core 2 Duo

Course Outcomes (CO)
At the end of this subject, students should be able to:

- Explain the hardware architecture of 8088/86 microprocessors and treat these Microprocessors. as a component for an electronic system rather than as the basis of a personal computer.
- Explain how each assembly language instruction functions with the Intel family of microprocessors.
- Write Assembly language programs using MASM assembler.
- Student will be able to interface 8086 with memory and I/O devices

Course Outline

8086 Processor, Assembly Language Programming, 8086 Interrupts, 8086 family processors

Method of delivery

Chalk and Board

PPTs

Study time

Lecture	Lab	Attendance
2	2	

CO-PO Mapping (PO: Program Outcomes)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	1	-	-	-	-	-	-	-	-	1
CO2	3	2	3	1	3	-	-	-	-	-	-	-
CO3	3	2	2	2	3	-	-	-	-	-	-	-
CO4	2	2	1	-	-	-	-	-	-	-	-	1

Blooms Taxonomy and Knowledge retention (For reference)

(Blooms taxonomy has been given for reference)

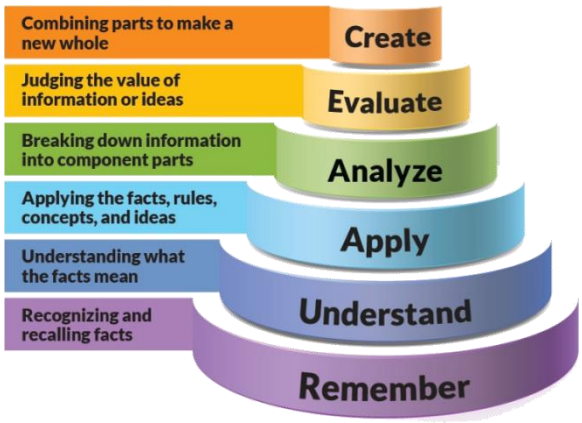

Figure 1: Blooms Taxonomy

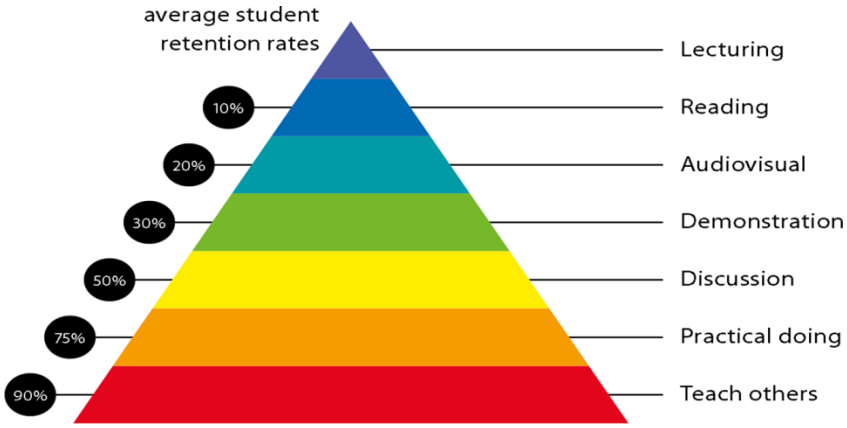

Figure 2: Knowledge retention

Graduate Qualities and Capabilities covered

(Qualities graduates harness crediting this Course)

General Graduate Qualities	Specific Department of _____Graduate Capabilities
Informed Have a sound knowledge of an area of study or profession and understand its current issues, locally and internationally. Know how to apply this knowledge. Understand how an area of study has developed and how it relates to other areas.	**1 Professional knowledge, grounding & awareness**
Independent learners Engage with new ideas and ways of thinking and critically analyze issues. Seek to extend knowledge through ongoing research, enquiry and reflection. Find and evaluate information, using a variety of sources and technologies. Acknowledge the work and ideas of others.	**2 Information literacy, gathering & processing**
Problem solvers Take on challenges and opportunities. Apply creative, logical and critical thinking skills to respond effectively. Make and implement decisions. Be flexible, thorough, innovative and aim for high standards.	**4 Problem solving skills**
Effective communicators Articulate ideas and convey them effectively using a range of media. Work collaboratively and engage with people in different settings. Recognize how culture	**5 Written communication** **6 Oral communication** **7 Teamwork**

can shape communication.	
Responsible Understand how decisions can affect others and make ethically informed choices. Appreciate and respect diversity. Act with integrity as part of local, national, global and professional communities.	**10 Sustainability, societal & environmental impact**

Practical work:

Introduction to MASM.
Programming based on block data transfer.
Programming based on Arithmetic and Logical operations.
Programming based on Code Conversion.
Programming based on Sorting of An Array of Numbers.
Programming based on Bit Manipulations.
Programming based on String Operations.
Programming Based on Displaying string on Console using DOS interrupts.

Lecture/tutorial times

(Give lecture times in the format below)

Example:

Lecture	**Tuesday**	**8.30 – 10.30 am**	**Room LH 30**
Lecture/Tutorial	**Wednesday**	**8.30 – 10.30 am**	**Room LH 30**
Practicals	Friday		

Attendance Requirements

The University norms states that it is the responsibility of students to attend all lectures, tutorials, seminars and practical work as stipulated in the Course outline. Minimum attendance requirement as per university norms is compulsory for being eligible for mid and end semester examinations.

Details of referencing system to be used in written work

Text books

1. The 8088 and 8086 Microprocessors, Programming, Interfacing, Software, Hardware and Applications, Fourth Edition, By Walter A Triebel and Avtar Singh, Pearson Education, ISBN 13: 9780130930811

2. Microprocessor 8086: Architecture, Programming and Interfacing, PHI Publication 2011, BY Sunil Mathur, ISBN: 9788120340879

Additional Materials

Reference Books:

1. The x86 Microprocessors: 8086 to Pentium, Multicores, Atom and the 8051 Microcontroller: Architecture, Programming and Interfacing, 2/e, Pearson Education, Lyla B Das, ISBN 13: 9789332536821

2. The Intel Microprocessors: 8086/8088, 80186/80188, 80286, 80386, 80486, Pentium, Pentium Pro Processor, Pentium II, Pentium III, Pentium 4, and Core2 with 64-bit Extensions, 8th Edition, Barry B. Brey , Pearson Education, ISBN 13: 9780139954085

3. Microprocessors and Interfacing by Douglas V Hall Revised Second Edition, McGraw Hill Publication, ISBN 13: 9781259006159

Web Resources

Microprocessors & Microcontrollers (http://nptel.ac.in/downloads/106108100/)

ASSESSMENT GUIDELINES

Your final course mark will be calculated from the following:

Internal Evaluation	**20 Marks**	Objective (1-4)
Mid semester	**40 Marks**	Objectives (2-5)
Final exam (*closed book*)	**40 Marks**	Objectives (1-5)

SUPPLEMENTARY ASSESSMENT

Students who receive an overall mark less than 40% in mid semester or end semester will be considered for supplementary assessment in the respective components (i.e mid semester or end semester) of semester concerned. Students must make themselves available during the supplementary examination period to take up the respective components (mid semester or end semester) and need to obtain the required minimum 40% marks to clear the concerned components.

Practical Work Report/Laboratory Report:

A report on the practical work is due the subsequent week after completion of the class by each group.

Late Work

Late assignments will not be accepted without supporting documentation. Late submission of the reports will result in a deduction of -% of the maximum mark per calendar day

Format

All assignments must be presented in a neat, legible format with all information sources correctly referenced. **Assignment material handed in throughout the session that is not neat and legible will not be marked and will be returned to the student.**

Retention of Written Work

Written assessment work will be retained by the Course coordinator/lecturer for two weeks after marking to be collected by the students.

University and Faculty Policies

Students should make themselves aware of the University and/or Faculty Policies regarding plagiarism, special consideration, supplementary examinations and other educational issues and student matters.

Plagiarism - Plagiarism is not acceptable and may result in the imposition of severe penalties. Plagiarism is the use of another person's work, or idea, as if it is his or her own - if you have any doubts at all on what constitutes plagiarism, please consult your Course coordinator or lecturer. Plagiarism will be penalized severely.

Do not copy the work of other students.
Do not share your work with other students (except where required for a group activity or assessment)

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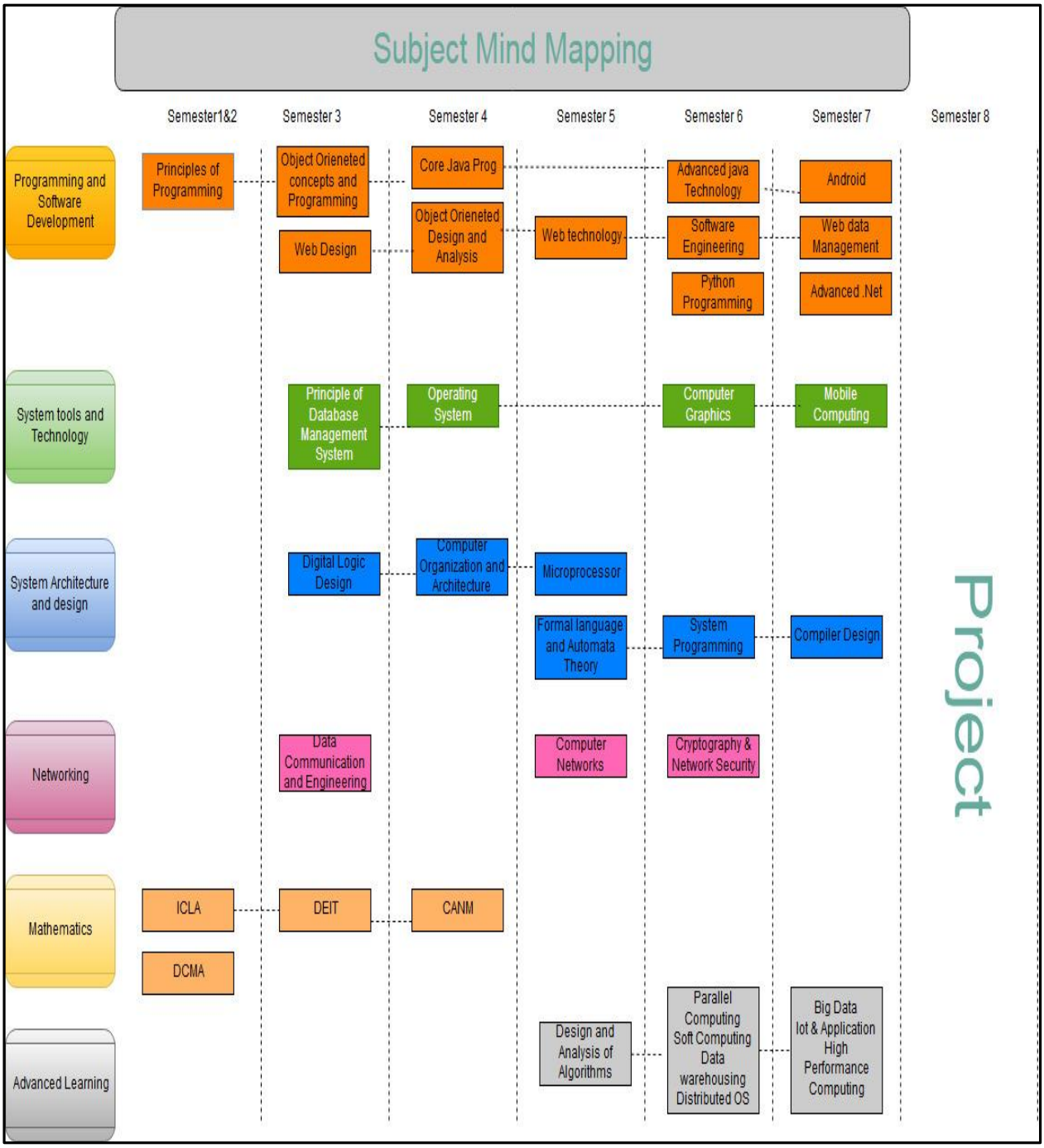
Course schedule (subject to change)

(Mention quiz, assignment submission, breaks etc as well in the table under the Teaching Learning Activity Column)

	Week #	Topic & contents	CO Addressed	Teaching Learning Activity (TLA)
	Week 1	Introduction to 8086 Introduction, The 8086 Microprocessor, Real Mode Memory Addressing, Memory organization of 8086	1	Chalk& Board, PPT
	Week 2	Instruction set of 8086 Addressing modes, Instruction format, and Instruction set	1	Chalk& Board, PPT
	Week 3	Assembly Language, Assembly Language Program Development tools, MASM Assembler, Assembler Directives, Programming of 8086	2	Chalk& Board, PPT
	Week 4	8086 Pin Descriptions, Clock Generator, Minimum mode and Maximum Mode operations, Memory Interfacing with 8086 Address decoding, Introduction to basic I/O Interface, I/O port address decoding	2	Chalk& Board, PPT
	Week 5	Advantage of Interrupts, Interrupt Systems, Classification of Interrupts, Interrupts of 8086, Interrupt Pointer Table	2,3	Chalk& Board, PPT
	Week 6	Intel 80186 Microprocessor, Internal Block diagram of 80186, Pin configuration of 80186,	2,3	Chalk& Board, PPT
	Week 7	Microprocessor 80286, Architecture of 80286, Pin description of 80286, Registers of 80286, Memory organization and segmentation, Memory operating modes Protected Virtual address mode, Local and Global descriptor table, Multitasking in 80286, Privilege level	4	Chalk& Board, PPT
	Week 8	Microprocessor 80386, Architecture of 80386, Signal Descriptions of 80386, Modes of Operation, Register Organization of 80386, Addressing modes, Memory Organization and memory Management unit of 80386. Global and Local Descriptors table,Paging, Virtual 8086 mode of	4	Chalk& Board, PPT

		80386, Memory Protection		
	Week 9	Microprocessor 80486, Pin Configuration of 80486, Eflag Register of 80486, Memory organization of 80486, Memory Management of 80486, Interrupt and Exceptions of 80386 and 80486	5	Chalk& Board, PPT
	Week 10	Pentium, Pentium Pro, Pentium II, Pentium III,	5	Chalk& Board, PPT
	Week 11	Pentium IV and Core2 microprocessors, Introduction to Pentium microprocessor	5	Chalk& Board, PPT
	Week 12	Special Pentium registers, Basic and additional features of Pentium Pro Pentium II, Pentium III, Pentium IV and Core2 microprocessors.	5	Chalk& Board, PPT


Subject Mind Mapping
Semester1&2
Semester 3
Semester 4
Semester 5
Semester 6
Semester 7
Semester 8
Programming and Software Development
Principles of Programming
Object Orieneted concepts and Programming
Web Design
Core Java Prog
Object Orieneted Design and Analysis
Web technology
Advanced java Technology
Software Engineering
Python Programming
Android
Web data Management
Advanced .Net
System tools and Technology
Principle of Database Management System
Operating System
Computer Graphics
Mobile Computing
System Architecture and design
Digital Logic Design
Computer Organization and Architecture
Microprocessor
Formal language and Automata Theory
System Programming
Compiler Design
Networking
Data Communication and Engineering
Computer Networks
Cryptography & Network Security
Mathematics
ICLA
DCMA
DEIT
CANM
Advanced Learning
Design and Analysis of Algorithms
Parallel Computing Soft Computing Data warehousing Distributed OS
Big Data Iot & Application High Performance Computing
Project