

Branch Name:	Mechanical Engineering (CAD/CAM)
Program Code:	ET201
Course Name:	Data Communication in CAD/CAM
Course Code:	2ET2010402T
Pre-requisite Course:	Zeal to learn the subject.

Course Objectives:

This course provides:

1. Understanding the basic concepts of computer and microprocessors.
2. Identify the function of operating system.
3. Applying the data communication and networking in transmission of data

Teaching and Examination Scheme:

Credit	Teaching Scheme Hours per week				Evaluation Scheme (Marks)								Total (Marks)
					Theory (Marks)				Practical (Marks)				
	L	T	P	Total	SEE		CCA		SEE		CCA		
					Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
03	03	-	-	03	24	60	16	40	-	-	-	-	100

Subject Contents:

Sr. No	Topic	Total Hours	Weightage (%)
1	Computers & Micro Processors: Block diagram, register transfer language, logic and shift micro-operations, instruction code, training and control instruction cycle, input and output, interrupt design of basic computer, machine language, assembly language, assembler, registers arithmetic logic unit and bus Systems, timing and control signals, machine cycle and timing diagram, functional block diagrams of 8086 and modes of operation, features of Pentium processors.	12	30
2	Operating System & Environments: Types, Functions, UNIX & WINDOWS NT, Architecture, Graphical User Interfaces, Compilers, Analysis of the Source program, The phases of a compiler, Cousins of the compiler, The grouping of phases, Compiler construction tools.	7	20
3	Communication Model: Data communication and networking, Protocols and architecture, Data transmission concepts and terminology, Guided transmission media, Wireless transmission, Data encoding, Asynchronous and synchronous communication, Base band interface standards RS232C, RS449 interface.	7	20

4	Computer Networks: Network structure, Network architecture, The OSI reference model services, Network standardization, Example, Managing remote systems in network, Network file systems, Net working in manufacturing.	7	15
5	Internet: Internet services, Protocols, Intranet information services, Mail based service system and network requirements, Internet tools, Usenet, E-mail, IRC, WWW, FTP, Telnet.	7	15

Review Presentation:

The student is expected to refer at least two peer reviewed journal papers related to this domain/subject so as to identify issues/challenges and emerging trends. Student is supposed to explore various video lectures (E.g. NPTEL) available in the domain/subject. Student is required to make a review-presentation on the work carried out for the same.

Recommended sites for journal papers are (1) asmedigitalcollection.asme.org (2) springer.com (3) sciencedirect.com (4) ieeexplore.ieee.org (5) scholar.google.co.in or others of similar repute.

List of Reference Books:

1. Morris Mano. M., "Computer System Architecture", Prentice Hall of India, 1996.
2. Peterson J.L., Galvin P. and Silberschaz, A., "Operating System s Concepts", Addison Wesley, 1997.
3. William Stallings, "Data of Computer Communications" Prentice Hall of India, 1997.
4. Andrew S. Tanenbanum "Computer Networks", Prentice Hall of India 3rd Edition, 1996.
5. Christian Crumlish, "The ABC's of the Internet", BPB Publication, 1996.
6. Gaonkar R.S., "Microprocessor Architecture, Programming and Applications of 8085", Penram International, 1997

Course Learning Outcomes (CLO): On completion of this course, the students will be able to:

CLO	Description	Bloom's Taxonomy Level
CLO1	Describe the components and infrastructure that form the basis for most computer networks.	1 Remembering 2 Understanding
CLO2	Describe the technical aspects of data communications on the Internet.	1 Remembering 2 Understanding
CLO3	Able to operate different operating systems.	3 Applying
CLO4	Understand and explain Data Communications System and its components.	2 Understanding 4 Analyze
CLO5	Identify the different types of network devices and their functions within a network	4 Analyze 5 Evaluating
CLO6	Familiarity with the basic protocols of computer networks, and how they can be used to assist in network design and implementation.	6 Creating

Mapping of CLOs with POs & PSOs:

Course Learning Outcomes	Program Outcomes (POs)												Program Specific Outcomes(PSOs)	
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CLO1	M				H	M						L	M	
CLO2		M	M							M		L		M
CLO3	M					L						H		M
CLO4	H			M	M							M	H	
CLO5		M	M		H					M				L
CLO6	M					L			M					M

H: High, M:Medium, L:Low