	VSEMESTER (III/IV – I SEM)							
S. NO	**COURSE CODE**	**SUBJECT NAME**	**L**	**T**	**P**	**HOURS**	**CREDITS**	
1	13-CS 205	Computer Networks	3	0	2	6	4	13ES204
2	11-EM-301	Internet Programming	3	0	2	6	4	13ES202
3	13-EM201	Computer organization	3	0	2	6	4	13EC203
4	13-EC312	Design with PLD/FPGA	3	0	2	6	4	13EC203
5	13EM202	Communication Systems	3	0	2	6	4	13ES205
6		**OE-I**	3	0	0	3	3	
7	13AC202	Employability Skills-I	1	0	2	2	-	
8	13-NC 201	Certificate Course-1						

<u>**SYLLABUS**</u>

<u>**III/IV BTECH (I SEM)**</u>

<u>**SYLLABUS**</u>

Course Code	: 13 CS 205
Course Title	: **COMPUTER NETWORKS**
Course Detail	: Theory& Lab
Course Structure	: Credits: 4 L – T – P: 3--0--2
Pre-requisite	: 13ES204

SYLLABUS

Introduction: Use of Computer Networks- Network Hardware- Network software-Reference models-Example networks. **Physical Layer**: The theoretical basis for Data communication- Guided Transmission Media, Modems, ADSL, Trunks & multiplexing, swithching **Data Link Layer:** DLL Design issues, Error Correction and Detection, Elementary DLL protocols, sliding window protocals **Medium Access Control Sublayer**: Channel allocation problem- multiple access protocols- Ethernet, Data link layer swithching **Network layer**: Network layer Design issues, Routing Algorithms, Congestion control Algorithms Quality of Service . **Network Layer:** Internetworking, Network layer in Internet. **Transport layer**: The transport service, elements of transport protocols, l the internet transport protocols, TCP – and UDP, permanence issues **Application Layer:** Domain Name System, Electronic Mail,World Wide Web.

Text Book:

Andrews S. Tanenbaum ,Computer Networks Fourth Edition, PHI.

Reference Books:

1. William Stallings, Data and Computer Communications ,seventh Edition, Pearson Education.
2. Behrouz A .Fourouzan, TCP/IP Protocol Suite, Third Edition, Tata McGraw-Hill.

Course No   : 13-EC312
Course Title   : **DESIGN WITH PLDs AND FPGAs**
Course Detail   : Theory & Lab
Course Structure   : Credits: 4   L – T – P: 3--0--2
Pre-requisite   : 13EC203

SYLLABUS

Introduction: Full Custom Design; Semicustom Design; Programmable Logic Devices; Notations for Programmable Logic Devices; Design Methodology Using Programmable Logic Devices; Design Soft Ware; **Programmable Read Only Memory (PROM):** Mask programmed ROM; EPROM; EEPROM; Programmable Logic Element (PLE); Combinational Logic Design using PLEs; Sequential Circuit Realization using PLEs; **Programmable Logic Devices:** Programmable Logic Device (PLD); Sequential PLD; Complex PLD; Field Programmable Gate Array (FPGA); Xilinx SRAM-Based FPGA; Comparison between FPGA, ASIC and CPLD; FPGA based system design; **Field Programmable Gate Arrays:** Introduction; The Xilinx logic Cell Array; Advanced futures of the 4000 series; The Actel ACT; Technology Trends; **New generation Architectures of Programmable Logic Device:** Erasable Programmable Logic Devices; Reprogrammable Generic Logic Devices; Erasable Programmable Logic Array (EPLA); Generic Array Logic (GAL); Programmable Electrically Erasable Logic (PEEL);

TEXT BOOKS

1.Parag K. Lala, "Digital System Design Programmable Logic Devices", B S Publications
2. Debaprasad Das, "VLSI Design", Oxford – 2011.
3. Pak K. Chan, SamihaMourad, "Digital Design Using Field Programmable Gate Array", Pearson Education – 2009.

REFERENCE TEXT BOOKS

1. Bob Zeidman, "Designing with PFGAs and CPLDs", CMP Books, ISBN: 1-57820-112-8.
2.Stephen Brown ZvonkoVranesic "Fundamentals of Digital Logic with VHDL Design" McGraw-Hill, 2008

Course Code   : **11-EM301**
Course Title   : **Internet Program ming**
Course Structure   : *L-T-P:* **3--0--2**
Prerequisite   : **13ES202**

Syllabus:

       HTML, DHTML, Cascading Style Sheets, XML, A Closer Look at Methods and Classes, Inheritance, Packages and Inheritance, Exception Handling. Multithreaded Programming, I/O, Applets, and Other Topics, the Applet Class, Event Handling. Servlets and Java Server Pages, Database Access through the Web: Architecture for Database Access, the MySQL Database System, Database Access with JDBC and MySQL.

TEXTBOOKS:

1. Deitel & Deitel & Nieto, "Internet & World Wide Web – How to Program", PEA, Third Edition.
2. Herbert Schildt, "Java the Complete Reference", 7th Edition, Tata McGraw Hill, 2007. (Chapters 7,8,9,10,11,13,21,22,23,29,30)
3. Robert W. Sebesta, "Programming the World Wide Web", 4th Edition, Pearson Education, 2008 (Chapters 1,2,3,4,5,6,7,10,11,13.3, 13.4, 13.7).

REFERENCES:

1. M. Deitel, P.J. Deitel, A.B. Goldberg, "Internet & World Wide Web, How to Program", 4th Edition, Pearson Education, 2004.
2. Chris Bates, "Web Programming Building Internet Applications", 3rd Edition, Wilet India, 2006.
3. Y. Daniel Liang, "Introduction to JAVA Programming", 7th Edition, Pearson Education, 2007.
4. Xue Bai,"The Web Warrior to Web Programming", Cengage Learning, 2003.
5. Anders Moller, Michael Schwartzbach, "An Introduction to XML and Web Technologies", 1st Edition, Pearson Education, 2006.
6. Ivan BayRoss, "Web Enabled Commercial Application Development using HTML, DHTML, JavaScript, Perl", BPB Publication, 3rd Edition, 2005.
7. Cay S. Horstmann, Gary Cornell, "Core Java, Volume I- Fundamentals", 8th Edition, PrenticeHall, Sun Microsystems Press, 2008.
8. Uttam K Roy, "Web Technologies", OXFORD University Press, 2012.
9. Jeffrey C Jackson, "Web Technologies: A Computer Science Perspective", Pearson Education, 2009.

Course No   : 13EM201
Course Title   **: Computer Organization**
Course Detail   : Theory
Course Structure   : Credits: 4   L – T – P: 3--0--2
Pre-requisite   : 13EC203

SYLLABUS

REGISTER TRANSFER & MICRO-OPERATIONS: Register Transfer Language, Register Transfer, Bus & memory Transfers, Arithmetic Micro-operations, Logic Micro Operations, Shift Micro-operation, and Arithmetic Logic Shift Unit. **BASIC COMPUTER ORGANISATION AND DESIGN**: introduction codes, Computer Registers, Computer instructions, Timing and Control, Instruction Cycle, Memory-Reference Instruction, Input-Output and interrupt, Design of Basic Computer, Design of accumulator Logic**, MICRO PROGRAMMED CONTROL:** Control Memory, Address Sequencing, Micro-Program example, Design of Control Unit. **CENTRAL PROCESSING UNIT:** General registers Organization, Stack Organization, Instruction Formats, Addressing Modes, Data Transfer and Manipulation, Program Control, Reduced instruction Set Computer (RISC). **COMPUTER ARITHMETIC:** Addition and Subtraction, Multiplication Algorithms, Division Algorithms, Floating-point Arithmetic Operations. **MEMORY ORGANIZATION:** Memory Hierarchy, Main Memory, Associative Memory, Cache Memory, Virtual Memory. **INPUT-OUTPUT ORGANIZATION:** Peripheral Devices, input-Output interface, Asynchronous Data Transfer, Modes of Transfer, Priority interrupt, Direct Memory Access (DMA), input –output Processor.

Text Books:

T 1.Morris M.Mano," Computer Systems Arichitecture",3rd Edition.

Reference Books:

R 1. John P Hayes," Computer Arichitecture and Organization"2nd Edition
R 2.V.CarlHamacheret.al," Computer Organization" 2nd Edition
R 3 Computer architecture and organization by Raja Raman and Radha Krishna-PHI

Course No	: 13 EM 202	
Course Title	: Communication Systems	
Course Detail	: Theory & Lab	
Course Structure	: Credits: 4	L – T – P: 3--0--2
Pre-requisite	: 13 ES 205	

SYLLABUS

Amplitude Modulation techniques: Introduction to Modulation, Continuous wave AM Generation and Demodulation of AM: DSB, DSB-SC, SSB and VSB, phase and frequency modulation, narrow band and wide band F.M, Direct and indirect methods of generation of F.M, demodulation of F.M wave. **Transmitters and Receivers**: AM Transmitter and FM Transmiter, Armstrong method receiver, AM Superhetrodyne, receivers FM Superhetrodyne receivers. **Pulse modulation techniques:** Sampling Process, Types of Sampling, FDM, TDM, Modulation and Demodulation of PAM, PPM & PWM. S/N ratio of PAM, PWM, PWM & PPM, Quantization process, Quantization Noise, PCM, and DPCM **Digital Modulation Techniques**: ASK, FSK, BPSK, DPSK, QPSK, QAM, Bandwidth Efficiency, Carrier recovery, Clock recovery. **Information Theory**: Uncertainty, Information, Entropy, Source coding theorem: Shannon-Fanon coding, Huffman coding. **Codes:** Liner block codes, Cyclic codes, Convolution codes.

Text Books:

1. "Introduction to Analog and Digital Communication System" – By Simon Haykin, 2nd   Edition.
2. "Communication Systems" by Singh R.P. and Sapre S.D - TMH
3. "Advanced Electronic Communication Systems" – By Wayne Tomasi, 6th Edition, PHI.

Reference Books:

1. "Analog and Digital Communications" – By Sam K.Shanmugam, Wiley
2. "Modern Digital & Analog Communication Systems" – By B.P. Lathi, 3rd Edition,