BOARD OF STUDIES MEETING – 2022-23

K.S.R.M COLLEGE OF ENGINEERING

AUTONOMOUS

Minutes of the Meeting

Date	**10.06.2023**	**Day**	**Saturday**
Time	**10.00AM**	**Venue**	**Online, Link:** https://meet.google.com/ryp-orph-mua
Dept./SS	**ECE**	**Convener**	**Dr. G. Hemalatha**

MembersPresent:10				**Members Absent: 03**		
S.No	**Name**	**Designation**	**Signature**	**S.No**	**Name**	**Designation**
1.	Prof. G. Hemalatha	Prof., & HOD ECE, KSRMCE		1	Sri S. P. Karthik	Principal Field Applications Engineer NI Systems (India) Pvt. Ltd. Bellandur, Banglore
2.	Prof. P. Ramana Reddy	University nominee Professor in ECE, JNTUA Ananthapuramu		2	Sri S. Guru Shankar	Director, Quality and Exports Chaitanya Chemicals Kadapa
3.	Prof. M. Rama Subba Reddy	Subject Expert Professor in ECE IIT Madras		3	Prof. M. Venkatanarayana	Prof. in ECE, KSRMCE
4.	Dr. V. Anil Kumar	Subject Expert Asso.Prof.in ECE IIIT, Huderabad				
5.	Prof. V. Adinarayana Reddy	Prof. in ECE, KSRMCE				
6.	Sri R.V. Sreehari	Asso. Prof., in ECE KSRMCE				

7.	Dr. S. L. Prathapa Reddy	Asso. Prof., in ECE KSRMCE	S L Mdy.			
8.	Dr. S. Zahiruddin	Asso. Prof., in ECE KSRMCE				
9.	Sri A. Valli Bhasha	Asst. Prof., in ECE KSRMCE	A.V. Bhasha			
10.	Sri Md. Mahaboob Pasha	Asst. Prof., in ECE KSRMCE				

Dr. G. Hemalatha, welcomed all the members to the meeting and presented the agenda of the meeting.
The resolutions are:

	To do item	**Discussion**	**Resolution**	**Coordinator/in-charge**
1	To approve NASSCOM Courses certifications of the skill sector council as skill-oriented courses in the curriculum and facilitate credit transfer.	The Head of the Department has presented the details of the NASSCOM Courses of the skill sector council.	The committee approved the NASSCOM Courses presented for credit transfer under skill-oriented courses.	Sri G. Suneel Kumar
2	To approve syllabi of Value added courses.	The Head of the Department has presented the syllabus of Value added courses Antenna Design, Microsoft Azure and EDA Tools of VLSI Design.	The committee approved the presented Syllabi of Value added courses.	Dr. M. Madhusudhan Reddy

The Head of the Department have proposed the Vote of thanks and concluded the meeting.

Convener

Professor & HOD
Department of E.C.E.
K.S.R.M. College of Engineering
KADAPA - 516 003

Kadapa,AndharPardesh–516003

K.S.R.M. COLLEGE OF ENGINEERING

(UGC-AUTONOMOUS)

Kadapa, Andhra Pradesh, India– 516 003

Approved by AICTE, New Delhi & Affiliated to JNTUA, Ananthapuramu.

An ISO 14001:2004 & 9001: 2015 Certified Institution

Details of NASSCOM Future Skills Prime Certifications considered for Credit Mobility:

S.No	Title of the Course	Provider	Hrs	Remarks
1	Data Science for Beginners	Board Infinity	30	Skill Course for all Branches
2	Sales force Developer Catalyst	Sales force	53	Skill Course for CSE, IT & other CSE specialized branches
3	Adobe UX Foundation Learning Journey	Adobe	43	Skill Course for all Branches
4	Oracle Cloud Security Administrator	Oracle	38	Skill Course for CSE, IT & other CSE specialized branches
5	Cyber security Essentials	CISCO	30	Skill Course for all Branches
6	Cloud Computing Foundation	Google	62	Skill Course for all Branches

Head of the Department

Professor & H.O.D.
Department of E.C.E.
K.S.R.M. College of Engineering
KADAPA - 516 003

EDA Tools of VLSI Design

Course Objectives:

The main objectives of this course are:

- Understand FPGA design flow, synthesis and different case studies using Verilog HDL.
- Basic characteristics of MOS transistor and examines various possibilities for Configuring inverter circuits and aspects of latch-up are considered.
- Understand the concepts of scaling, stick and symbolic diagrams but the key element is a set of design rules, which are explained clearly.
- Need for Design of Low-Power VLSI Circuits.
  Pre-layout and post-layout simulations using back-end environment

Course Outcomes: On successful completion of this course, the students will be able to

CO1: Understand the basic concepts of Verilog HDL (RTL Design) modeling styles.
CO2: Execute the digital circuits using Verilog HDL
CO3: Memorize the basic concepts of VLSI Design.
CO4: Examine different sources of power dissipation in CMOS circuits.
CO5: Investigate the comparison between Pre-layout and post-layout simulations

Module-1 (3 Hours)

Digital Design Using Verilog: Introduction, Naming conventions, operators, data types, numbers, statements, behavioural modeling, structural modeling, delay modeling in Verilog, switch-level modeling.

Module-2 (10 Hours)

Laboratory Experiments with Xilinx Vivado along with FPGA Artix-7 board: FPGA design flow, Architecture of Artix-7 FPGA, Verilog HDL simulation experiments with Xilinx Vivado along with FPGA Artix-7 board, Adders, multipliers, code converters, ALU, seven segment display, SRAM cell, comparator, counters, FSM.

Module-3 (4 Hours)

Basic concepts of VLSI design: Introduction to IC Technology, Basic MOS transistors, nMOS inverter, CMOS Inverter, Bi-CMOS inverter (VI characteristics), Low-power low-voltage FinFET, CinFET, Threshold voltage, body effect, latch-up in CMOS circuits, Calculation of rise time, fall time and delay time for CMOS inverter, Delay unit & its calculations, Propagation delays, Noise margins, Scaling of MOS circuits, CMOS Logic Structures, optimization of area (layout) using Euler's path approach.

Module-4(12 Hours)

Low-Power Design Approaches: Need for Low Power Circuit Design, Sources of Power Dissipation, Low-Power Design through Voltage Scaling, Architectural Level Approach.

Design flow of Back-end EDA Tool (Cadence/Mentor Graphics/any other relevant tool), Pre-layout and post-layout simulations of CMOS inverter, universal gates, XOR/XNOR gates, 2*1 MUX, flip-flop, memory cell, differential amplifier.

Microsoft Azure Syllabus

Course Objectives

- Manage Azure identities and governance
- Implement and manage storage
- Deploy and manage Azure compute resources
- Configure and manage virtual networking
- Monitor and backup Azure resources

Course Outcomes: On successful completion of this course, the students will be able to	
CO 1	Understand the concepts of Azure cloud computing
CO 2	Identify the virtual machines and virtual networks and Analyze different load balancers and Creating virtual systems
CO 3	Identify and implement the different storages in Azure
CO 4	Analyzing and managing the concept of Azure Active Directory
CO 5	Deploy web apps and Back up of a VM

Module-1: Cloud Computing & Microsoft Azure Fundamentals

Introduction to Azure, Different segments SaaS, PaaS, and IaaS, Azure Regions and Data Centers, Understanding of Microsoft Azure portal, Introduction to all Azure services Windows Azure Subscription, Setting Up a Trial Subscription

Lab: Installation of Azure cmdlets on windows PowerShell

Azure Virtual Machines

Operating System Images Supported, Virtual Machine instances, Azure VM types and Pricing, Types of Provisioning, Disks & Images, Virtual Machine management, automation and scripting, Cloud Service and Resource Model Deployment, Setting up VM in Availability set using Load Balanced Endpoint, VM Availability using Availability Sets

Lab: Creation of VMs with portal, ARM Templates and Power Shell Deploying two VMs in Availability Set and load balancing it.

Module-2: Introduction to Azure Virtual Network and Services

Types of Azure Virtual Network VNET to VNET, point-to-site and site-to-site, Express Route, Creating Virtual Networks in Azure, Azure Subnet and IP ranges, Endpoints ,Load Balancing Endpoints , Understanding Network ACL and Network Security Group Setting up Private and Public IP, Introduction to Azure Traffic Manager, Available options in, Azure Traffic Manager, Understanding of Deployment Traffic Manager

Lab: Create a VNET-to-VNET virtual network; create a point-to-site virtual network. Create a site-to-site virtual network, Load Balancing using Azure Traffic Manager.

Value Added Course

ANTENNA DESIGN

40 hrs

Course Objectives:

At the end of the course, students will

- Understand measurement of antenna parameters and application of basic theorems in analyzing radiation characteristics of antenna.
- Design and implement antennas using EM simulation tools.

Course Outcomes:

At the end of the course, students will be able to

- Demonstrate the structure and operation of various antennas and to describe their parameters.
- Apply basic theorems to analyze the variation of field strength of radiated waves.
- Measure the radiation pattern of wired, aperture, planar and array antennas.
- Familiar with EM simulation tools to implement antenna prototypes.

Unit-I: (10 hrs)

Wired Antennas: Basic theorems in analyzing radiation characteristics of antenna, Dipole antenna, Monopole antenna, Loop antenna, travelling wave antennas (Long Wires), Broadband antennas (Helical).

Unit-II: (10 hrs)

Array Antennas: Uniform feed Linear/Planner Array Antennas; Non-Uniform feed Linear/Planar Array Antennas (Binomial/Dolph-Tschebyscheff).

Unit-III: (08 hrs)

Aperture Antennas: Uniform/Non-uniform illumination; Rectangular and Circular Apertures; Horn Antennas; Microstrip Antennas; Reflector Antennas.

Unit-IV: (12 hrs)

Hands on: Using AMS Kit - Inverse square law, Reciprocity theorem, Measurement of radiation pattern of all wired and aperture antennas, Measurement of radiation pattern of array antennas, Analysis of co-polarization and cross polarization, Using HFSS simulation tool - Design and simulation of microstrip antenna, probe fed patch antenna and array of MSAs.

Reference Books:

[1] Constantine A. Balanis, "Antenna Theory: Analysis and Design", John Wiley & Sons Inc., 3rd Edition, 2005

[2] Ben Allen and el., "Ultra-Wideband Antennas and Propagation for Communications, Radar and Imaging", John Wiley & Sons Inc., 2007

[3] Zhi Ning Chen, "Antennas for Portable Devices", John Wiley & Sons, Ltd, May.2007

[4] David M. Pozar, "Microwave Engineering", John Wiley & Sons, Inc., 3rd Edition, 2005

Professor & H.O.D.
Department of E.C.E.
K.S.R.M. College of Engineering
KADAPA - 516 003