

REGULATION 2013

ME VLSI DESIGN

<u>SEMESTER- I</u>	
COs	MA 7157 Applied Mathematics For Electronics Engineers
1	The students gain knowledge on fuzzy logic and its application.
2	The queuing models can be analyzed by the students.
3	Various probability distributions can be computed.
4	Students know the working principle of markov chain process.
5	Students learn the application of probability
COs	VL 7101 VLSI Signal Processing
1	Students have an ability to modify DSP architecture suitable for VLSI.
2	They know techniques for altering the existing DSP structures.
3	Students know various algorithms for strength reduction.
4	Students learn the concepts of VLSI Signals.
5	Students are able to construct VLSI circuits for signals
COs	VL 7102 VLSI Design Techniques
1	The students are able to understand the concepts of MOS transistors operations and their AC , DC characteristics.
2	They can identify the fabrication process of cmos technology and its layout design rules
3	Students can understand the latch up problem in cmos circuits.
4	Students know the concepts of cmos invertors and their sizing methods
5	Students know the concepts of power estimation and delay calculations in cmos circuits.
COs	VL 7103 Solid State Device Modelling and Simulation
1	Students can design with fundamentals of building device and circuit simulators
2	They can access Highfrequency behavior of MOS transistor and A.C small signal modeling,
3	Students know about the Sparse matrix techniques,.
4	Students can analysis general purpose circuit simulators..
5	Students know the mathematical techniques for device simulations
COs	AP 7008 DSP INTEGRATED CIRCUITS
1	Students know the concept of Digital Signal Processing and its algorithm.
2	They gained the knowledge of about finite word length effects in digital filters.
3	Students understood the concept of multi rate system.
4	They are familiar with the DSP processor architectures

5	Students can identify the suitable technique for DSP integrated circuit.
COs	VL 7002 Security Solutions in VLSI
1	Students can design the different kinds of threats to information security..
2	They studied the various techniques for data encryption..
3	Students studied the RSA algorithm,
4	They are able to analyze case study based on VLSI for security threats.
5	Student were able to design and implement the various cryptography algorithms in VLSI..
COs	VL 7111 VLSI Design Laboratory 1
1	Students can map a design onto FPGA platform.
2	They are able to carry out time and frequency domain simulations for simple analog blocks.
3	Students studied the pole zero behaviors of feedback based circuits.
4	Students learn the concepts of VLSI DESIGNS.
5	Students are able to construct VLSI circuits
<u>SEMESTER-II</u>	
COs	AP 7201 Analysis and Design of Analog Integrated Circuits
1	Students are able to design the single stage amplifiers using pmos and nmos driver circuits with different loads.
2	They studied the different types of current mirrors current
3	Students gain knowledge in know the concepts of voltage and reference circuits.
4	They learned to analyse high frequency concepts of single stage amplifiers.
5	Students are able to test oise characteristics associated with differential amplifiers
COs	VL 7201 CAD for VLSI circuits
1	Students learn the VLSI design methodologies.
2	They know the outline of floor planning and routing.
3	Students are able to discuss the hardware model foe high level synthesis.
4	They studied the simulation and logic synthesis.
5	Students can design VLSI circuit
COs	Low Power VLSI Design
1	Students can identify the suitable techniques for power dissipation.
2	They are able to design memory circuits with low power dissipation.
3	Students know the basics and advanced techniques in low power design.
4	They learned about reduction in power dissipation by an IC.
5	They know various algorithms for low power VLSI design
COs	VL 7005 Physical Design of VLSI Circuits
1	The student will learn Field programmable gate array(FPGA)-layout methodologies
2	The students will Know Placement using top-down approach
3	will have good idesabout Integer linear programming detailed routing
4	would be familiarized with Performance issues in circuit layout

5	An in- depth knowledge ofSingle layer routing, cell generation and compaction
COs	AP 7071 Hardware Software Co-Design
1	StudentTs would be familiar with various techniques of prototyping and emulation.
2	Students would learnt the languages for system level specification and design
3	Students would understand Heterogeneous Specification and Multi-Language Co-simulation
4	Students would be familiar with Hardware/software partitioning and co-synthesis
5	would be familiarized with various techniques used to Logic and Interconnect design.
COs	AP 7016 System on Chip design
1	Students would have learnt to design combinational and sequential logic networks.
2	students would have knowledge about the optimization of power in combinational and sequential logic machines.
3	Students will be able to understand the design principles of FPGA and PLA
4	Students will be able to understand the various floor planning methods for system design.
5	Students would have learnt the key principles involved in Design Validation and Sequential Testing
COs	VL 7211 VLSI design laboratory II
1	Basic knowledge about the Design and Simulation of Gate-level modeling
2	Students will have learnt Modeling and synthesis of simple scheduling algorithm
3	Student will Design and simulate Power Estimation
4	Would have gained Knowledge about Modeling and synthesis of simple scheduling algorithm.
5	Students would be familiarized with various techniques used to Logic and Interconnect design
<u>SEMESTER-III</u>	
COs	VL 7301 Testing of VLSI Circuits
1	Students get familiar about the various types of faults and also to study about fault detection, dominance
2	Students learn about the DFT the concepts of the test generation methods -BIST
3	Understand the fault diagnosis methods
4	Self – test and test algorithms
5	Test generation for sequential circuits
COs	VL 7011 Signal Integrity for High Speed Devices
1	Students will know the fundamental and importance of signal integrity.
2	Can analyze and minimize cross talk in unbounded conductive media
3	students will know about the different types of Di-Electric materials
4	will have good ideas bout differential cross talk and CMOS based transmission line model
5	Environmental variation in di electric behavior Transmission line parameters

COs	VL 7014 IP Based VLSI Design
1	Students would have learnt about IC manufacturing and fabrication.
2	Students would acquire knowledge to analyse the combinational, sequential and subsystem design
3	Different floor planning techniques and architecture design will be identified by the students.
4	An in- depth knowledge of IP design security would be gained by the students.
5	Students would be familiarized with various techniques used to Logic and Interconnect design
COs	VL 7311 Project Work (Phase I)
1	Students will use the ability to solve a specific problem and find solutions.
2	On completion of the project work students will be in a position to take up any challenging practical problems.
3	On completion of the project work students will be able to find solution by formulating proper methodology.
4	Students will get improved with their problem solving capability.
5	Students will be capable of applying the subject knowledge in real world applications.
<u>SEMSTER-IV</u>	
COs	VL 7411 Project Work (Phase II)
1	Students will use the ability to solve a specific problem and find solutions.
2	On completion of the project work students will be in a position to take up any challenging practical problems.
3	On completion of the project work students will be able to find solution by formulating proper methodology.
4	Students will get improved with their problem solving capability.
5	Students will be capable of applying the subject knowledge in real world applications.