I²IT -IGNOU CENTRE OF EXCELLENCE FOR
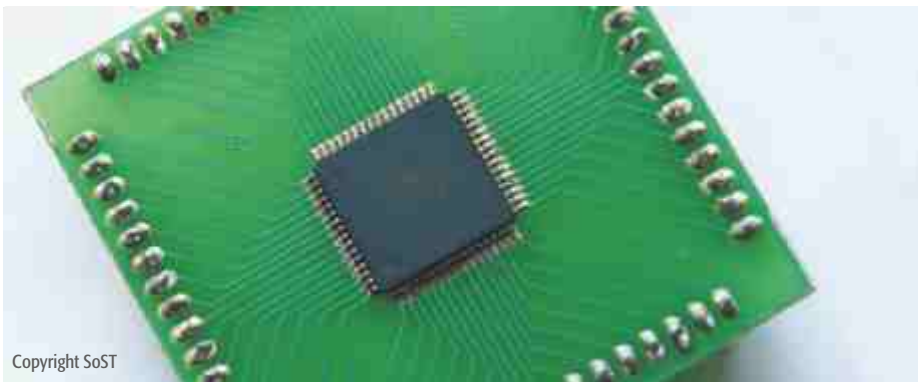ADVANCED EDUCATION AND RESEARCH

IGNOU

M.Tech. IN ADVANCED INFORMATION TECHNOLOGY WITH SPECIALIZATION IN MICROELECTRONICS AND VLSI DESIGN (MTECHVD)

2 years, full-time and residential

Copyright SoST

FOCUS AREAS
- Analog and Digital Design
- Mixed Signal Design
- Low Power Design
- Functional and Formal Verification
- Physical Design
- High Speed Board Design

"An inadequate number of skilled engineers, due to a lack of specialized technical course, poses a big barrier to the growth of India's VLSI Design business." - ISA Study report

It is anticipated that future ULSI (Ultra Large Scale Integration) chips will have a new architecture called 'chessboard' architecture. 'Active Packaging' is going to play critical role in designing such architectures. The Philips, ST Microelectronics and Motorola alliance has opened a joint R&D center in France, dedicated to future generation of nanoelectronics and semiconductor manufacturing on 300mm silicon wafers. Huge investments by the three partners and other leading semiconductor companies, in the facility and planning, is expected to create a number of job opportunities in the region and worldwide. VLSI Design is coming up very strongly on the Indian horizon, due to less initial investment cost. With all the leading IC design companies opening their design centers in India, there are many job opportunities emerging in the field of microelectronics and VLSI design. Amongst analog chips, those in the high-voltage segment in particular are registering the fastest growth. This M.Tech.. program has been designed keeping in view the current needs of the field in international and national context.

ELIGIBILITY
Graduate with recognized Bachelors degree of Engineering / Technology in Electrical / Electronics / Communication / Information Technology / Computer Science / MSc. in Electronics / Computer Science or equivalent with minimum 55 percent marks or equivalent grades. Basic knowledge of Digital and Analog systems.

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COURSE STRUCTURE

SEMESTER	CODE	COURSE NAME	CREDITS
SEMESTER I			
	MINI-034	Semiconductor Technology	6
	MINI-035	Digital IC Design	6
	MINI-036	HDL Modeling	6
	MINI-037	System on Programmable Chip Design	6
	MINE-054*	Circuits and Systems Design	6
	MINE-055*	Embedded C, C++ Programming Languages	6
	MINE-056*	Digital Signal Processing	6
	MINI-038	Seminar	4
	MIN-001	Life Skill Development I	6
		Total	52
SEMESTER II			
	MINI-039	Functional and Formal Verification	6
	MINI-040	Analog IC Design	6
	MINE-057*	ASIC Design	6
	MINE-058*	Testing and DFT	6
	MINE-059*	Processor Architecture and Modeling	6
	MINE-060*	Low power IC Design	6
	MINE-061*	Advanced FPGA Based Design	6
	MIN-002	Life Skill Development II	6
		Total	48
		*Electives: Choose Any four for Semester I	
		*Electives: Choose Any four for Semester II	
SEMESTER III			
	MINP-007	Project Phase I	36
SEMESTER IV			
	MINP-008	Project Phase II	48
Total Credits			172

Delivery of an elective will be subject to availability of domain expert / faculty as well as minimum number of students for that particular elective