NATIONAL INSTITUTE OF TECHNOLOGY NAGALAND

CHUMUKEDIMA, DIMAPUR – 797 103

M.Tech. Degree Programme

Curriculum

Regulations 2014

Master of Technology in VLSI Systems

Overall Course Structure

Category	Total No. of Courses	Credits	Percentage
Core Courses	11	34	47
Project and Comprehensive	3	20	28
Electives	6	18	25
TOTAL	20	72	100

Course Credits - Semester Wise

PG Course	I	II	III	IV	Total
VLSI Systems	21	21	18	12	72

Semester I

Course Code	Course Title	L	T	P	C
MA104	Advanced Computational Mathematics	3	1	0	4
VL101	Semiconductor Devices and Modelling Techniques	3	0	0	3
VL102	Advanced VLSI Design	3	0	0	3
VL103	Advanced Digital communication Techniques	3	0	0	3
VL104	Verilog Based Design Of Digital Systems	3	0	0	3
VL9XX	Elective – I	3	0	0	3
VL105	VLSI Design Lab	0	0	2	2
Total		**18**	**1**	**2**	**21**

Semester – II

Course Code	Course Title	L	T	P	C
VL151	System on Chip design	3	1	0	4
VL152	Low Power VLSI Design	3	0	0	3
VL153	DSP Architectures and Embedded Systems	3	0	0	3

Course Code	Course Title	L	T	P	C
VL9XX	Elective – II	3	0	0	3
VL9XX	Elective – III	3	0	0	3
VL9XX	Elective – IV	3	0	0	3
VL154	System on Chip design Laboratory	0	0	2	2
	Total	**18**	**1**	**2**	**21**

Semester – III

Course Code	Course Title	L	T	P	C
VL201	Advanced Computer Architecture	3	1	0	4
VL9XX	Elective - V	3	0	0	3
VL9XX	Elective - VI	3	0	0	3
VL202	Comprehensive Viva- Voce	0	0	2	2
VL203	Project Phase - I	0	0	6	6
	Total	**9**	**1**	**8**	**18**

Semester – IV

Course Code	Course Title	L	T	P	C
VL251	Project phase - II	0	0	24	12

	Total	**0**	**0**	**24**	**12**

ODD SEMESTER ELECTIVES

Course Code	Course Title	L	T	P	C
VL901	Soft Computing	3	0	0	3
VL902	Fibre Optics Communication Technology	3	0	0	3
VL903	Characterization of Semiconductor Materials & Devices	3	0	0	3
VL904	Device Modelling for Circuit Simulation	3	0	0	3
VL905	Optimization Methods in Signal Processing and Communication	3	0	0	3
VL906	Speech Signal Processing and Coding	3	0	0	3
VL907	Advanced Digital Image Processing	3	0	0	3
VL908	Advanced CMOS Devices and Technology	3	0	0	3

VL909	Instrumentation for Nanotechnology	3	0	0	3
VL910	CAD for VLSI circuits	3	0	0	3
VL911	Optimal and Adaptive Signal Processing	3	0	0	3
VL912	Optical Imaging Techniques	3	0	0	3
VL913	Compact Modeling of Devices for IC Design	3	0	0	3
VL914	Optical Sensors	3	0	0	3
VL915	Analog VLSI Design	3	0	0	3
VL916	Quantum Electronics	3	0	0	3

EVEN SEMESTER ELECTIVES

Course Code	Course Title	L	T	P	C
VL951	Transducers for Instrumentation and Process	3	0	0	3
VL952	Testing of VLSI Circuits	3	0	0	3
VL953	Telecommunication Switching Systems	3	0	0	3
VL954	CMOS RF Circuit Design	3	0	0	3

VL955	RF System Design	3	0	0	3
VL956	FPGA Based System Design	3	0	0	3
VL957	Solar Cells, Device Physics and Materials Technology	3	0	0	3
VL958	NANOELECTRONICS: DEVICES AND MATERIALS	3	0	0	3
VL959	Information and Coding Theory	3	0	0	3
VL960	Bio-Medical Electronic Systems	3	0	0	3
VL961	Advanced Wireless Mobile Communication	3	0	0	3
VL962	VLSI Signal Processing	3	0	0	3
VL963	Wavelet Transforms and Applications	3	0	0	3
VL964	Integrated Optoelectronic Devices and Circuits	3	0	0	3