

Sr. No	DL /IL	Cluster Name	Cluster Mentor	Cluster Subjects				Cluster Members	
				DEPT	Even Sem No	Odd Sem No	Subject Name	Name of the Faculty	DEPT
1.	IL	Signal Processing  Digital Signal Processing	Prof. B Rama Rao (EXTC)	EXTC	4	-	1. Signals and System (SS)	1. Prof. Dattatray Bade 2. Prof. Sheetal Mapare 3. Prof. Amit Maurya 4. Prof. Rama Rao 5. Prof. Sheetal Patil 6. Prof. Shraddha Panbude 7. Dr. Saurav Mitra 8. Dr. Anjali Deshpande 9. Prof. Priyanka Shrivastava 10. Prof. Abhishek Pandey 11. Prof. Rasika Ransing	EXTC
				BIOM	4	-	2. Signals and System (SS)		EXTC
				ETRX	-	5	3. Signals and System (SS)		EXTC
				ETRX	6	-	4. Digital Signal Processing and Processor (DSPP)		EXTC
				ETRX	6	-	5. Digital Signal Processing and Processor Lab (DSPP_LAB)		ETRX
				EXTC	6	-	6. Discrete Time Signal Processing (DTSP)		ETRX
				EXTC	6	-	7. Discrete Time Signal Processing Lab (DTSP_LAB)		BIOM
				BIOM	-	5	8. Biomedical Digital Signal Processing (BDSP)		CMPN
				CMPN	-	7	9. Digital Signal Processing (DSP)		CMPN
				EXTC	-	ME-I	10. Modern Digital Signal Processing Applications		CMPN
2.	IL	Image Processing	Dr. Varsha Turkar (ETRX)	BIOM	6	-	1. Digital Image Processing (DIP)	1. Prof. Prathmesh Mestry 2. Prof. Vibha Wali 3. Dr. Varsha Turkar 4. Prof. Sheetal patil 5. Prof. Priyanka Shrivastava 6. Prof. Vipul Dalal	EXTC
				EXTC	-	7	2. Image and Video Processing (IVP)		EXTC
				EXTC	-	7	3. Image and Video Processing Lab (IVP_LAB)		ETRX
				ETRX	-	7	4. Digital Image Processing (DIP)		ETRX
				ETRX	-	7	5. Digital Image Processing Lab (DIP_LAB)		BIOM
				CMPN	-	7	6. Image Processing (IP)		CMPN
				INFT	-	7	7. Image Processing (IP)		CMPN

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3.	IL	Micro Processor  Micro Controller	Prof. Arun Chavan (BIOM)	ETRX	4	-	1. Microprocessors and Peripherals (MPP)	1. Prof. Atul Oak	EXTC
				EXTC	4	-	2. Microprocessors and Peripherals (MPP)	2. Prof. Vijay Purohit	EXTC
				ETRX	-	5	3. Microcontrollers and Applications(MCA)	3. Prof. Mohit Gujar	EXTC
				EXTC	-	5	4. Microcontrollers and Applications (MCA)	4. Dr. Saurabh Mehta	EXTC
				BIOM	-	5	5. Microprocessors (MP)	5. Prof. Parthmesh Indulkar	EXTC
				BIOM	6	-	6. Microcontrollers and Embedded Systems (MCES)	6. Prof. Shrikant Velankar	ETRX
				CMPN	-	5	7. Microprocessors (MP)	7. Prof. Manoj Suryavanshi	ETRX
				INFT	-	5	8. Microcontrollers and Embedded Systems (MCES)	8. Prof. Akshatha Bhat	ETRX
				ETRX	4	-	9. Microprocessors and Peripherals Lab (MPP_LAB)	9. Prof. Neha Gulati	ETRX
				EXTC	4	-	10. Microprocessors and Peripherals Lab (MPP_LAB)	10. Dr. Varsha Turkar	ETRX
				ETRX	-	5	11. Microcontrollers and Applications Lab (MCA_LAB)	11. Prof. Arun Chavan	BIOM
				EXTC	-	5	12. Microcontrollers and Applications Lab (MCA_LAB)	12. Prof. Komal Lawand	BIOM
				INFT	-	5	13. Microcontrollers and Embedded Systems Lab (MCES_LAB)	13. Prof. Mandar Sohani	CMPN
				EXTC	-	5	14. Mini Project-I	14. Prof. Anuja Gote	INFT
				EXTC	6	-	15. Mini Project-II	15. Prof. Ajitkumar Khachane	INFT
4.	IL	Embedded System	Prof. Shrikant Velankar (ETRX)	ETRX	-	7	1. Embedded System Design (ESD)	1. Prof. Shrikant Velankar	ETRX
				CMPN	8	-	2. Embedded Systems (ES)	2. Prof. Manoj Suryavanshi	ETRX
				EXTC	-	ME1	3. Embedded Systems (ES)	3. Prof. Akshatha Bhat	ETRX
5.	IL	Computer Organization	Prof. Ajitkumar Khachane (INFT)	CMPN	4	-	1. Computer Organization and Architecture (COA)	1. Dr. Varsha Turkar	ETRX
				INFT	4	-	2. Computer Organization and Architecture (COA)	2. Prof. Atul Oak	EXTC
				ETRX	6	-	3. Computer Organization (CO)	3. Prof. Debarti Ghosh	INFT
							4. Prof. Kanchan Dhuri	INFT	
							5. Prof. Vinita Bhandiwad	INFT	
							6. Prof. Suvarna Bhat	CMPN	

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6.	IL	Control System	Dr. Anjali Deshpande (ETRX)	BIOM	4	-	1. Electronic Instruments and Control System (EICS)	1. Prof. Hemant Jadhav	EXTC
				ETRX	4	-	2. Principles of Control System (PCS)	2. Prof. Mayurkumar Nanda	EXTC
				EXTC	4	-	3. Control System (CS)	3. Dr. Arpit Rawankar	EXTC
				ETRX	8	-	4. Digital Control	4. Dr. Saurav Mitra	ETRX
7.	IL	Micro Electro Mechanical System	Dr. Gajanan Nagare (BIOM)	BIOM	8	-	1. Biomedical Microsystems (BMS)	1. Prof. Rajashree Soman	ETRX
				ETRX	8	-	2. MEMS Technology (MEMS)	2. Dr. Gajanan Nagare	BIOM
								3. Prof. Akshatha Bhat	ETRX
								4. Prof. Amaya Pethe	ETRX
8.	IL	CMOS VLSI	Prof. AkhilMasurkar (EXTC)	ETRX	6	-	1. CMOS VLSI Design	1. Prof. Tejal Page	EXTC
				EXTC	-	7	2. CMOS VLSI	2. Prof. Akhil Masurkar	ETRX
9.	IL	VLSI and IC Technology	Dr. Sangeeta Joshi (ETRX)	EXTC	6	-	1. VLSI Design	1. Prof. Satendra Mane	EXTC
				BIOM	-	7	2. Very Large Scale Integrated Circuits (VLSIC)	2. Prof. Girish Gidaye	ETRX
				ETRX	6	-	3. Basics of VLSI (BVLSI)	3. Prof. Amaya Pethe	ETRX
				ETTX	-	7	4. IC Technology (ICT)	4. Prof. Sunil Kavatkar	ETRX
10.	IL	Linear Integrated Circuits	Dr. Anand Tripathi (FE)	ETRX	-	5	1. Design with Linear Integrated Circuits (DLIC)	1. Prof. Vijay Purohit	EXTC
				EXTC	-	5	2. Integrated Circuits (IC)	2. Prof. Mayurkumar Nanda	EXTC
				BIOM	-	5	3. Analog and Digital Circuit Design (ADCD)	3. Prof. Mohit Gujar	EXTC
								4. Prof. Prachi Mujawar	ETRX
				5. Prof. Vivek Patkar	ETRX				
				6. Prof. Smriti Viswanath,	BIOM				
				7. Prof. Neelam Punjabi	BIOM				

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11.	IL	Electronic Devices Circuit	Prof. Satendra Mane (EXTC)	ETRX ETRX EXTC EXTC BIOM BIOM COMP INFT	- 4 - 4 - 4 - -	3 - 3 - 3 - 3 3	1. Electronic Devices (ED) 2. Discrete Electronic Circuits (DEC) 3. Analog Electronics – I (AE - I) 4. Analog Electronics – II (AE - II) 5. Electronic Circuits and Design – I (ECD - I) 6. Electronic Circuits Analysis and Design – II (ECAD - II) 7. Electronic Circuits and Communication Fundamentals (ECCF) 8. Analog and Digital Circuits (ADC)	1. Prof. Satendra Mane 2. Prof. Parthamesh Indulkar 3. Prof. Amrita Mardikar 4. Prof. Mayurkumar Nanda 5. Prof. Tejal Page 6. Prof. Sunil Kavatkar 7. Prof. Akhil Masurkar 8. Prof. Amaya Pethe 9. Prof. Harish Ojha 10. Prof. Kanchan Dhuri	EXTC EXTC EXTC EXTC ETRX ETRX BIOM INFT
12.	IL	Digital Electronics and Logic Design	Prof. Geetha Narayanan (BIOM)	ETRX ETRX EXTC EXTC BIOM CMPN	- - - - 4 -	3 3 3 3 - 3	1. Digital Circuits and Design (DCD) 2. Digital Circuits and Design Lab (DCD_LAB) 3. Digital Electronics (DE) 4. Digital Electronics Lab (DE_LAB) 5. Logic Circuits (LC) 6. Digital Logic Design and Analysis (DLDA)	1. Prof. Pooja Rane 2. Prof. Beena Ballal 3. Prof. Vijay Purohit 4. Prof. Tejal Page 5. Prof. Sayali Tirodkar 6. Prof. Anuraddha Joshi 7. Prof. Amaya Pehte 8. Prof. Geetha Narayanan 9. Prof. Komal Lawand	EXTC EXTC EXTC EXTC ETRX ETRX BIOM

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13.	IL	Basic Communication	Prof. Pranita Padhye (ETRX)	ETRX	4	-	1. Fundamentals of Communication Engineering (FCE)	1. Prof. Beena Ballal	EXTC
				ETRX	-	5	2. Digital Communication (DC)	2. Prof. Santosh Jagtap	EXTC
				EXTC	-	5	3. Analog Communication (AC)	3. Prof. Amey Revandkar	EXTC
				EXTC	6	-	4. Digital Communication (DC)	4. Prof. Mayurkumar Nanda	EXTC
				INFT	-	3	5. Principles of Analog and Digital Communication (PADC)	5. Prof. Pooja Rane	EXTC
				BIOM	-	5	6. Principles of Communication Engineering (PCE)	6. Prof. Pranita Padhye	ETRX
								7. Prof. Rakshak Sood	ETRX
								8. Prof. Prachi Mujawar	ETRX
								9. Prof. Viashali Patil	ETRX
								10. Prof. Shraddha Panbude	ETRX
								11. Prof. Ulka Padwalkar	ETRX
								10. Prof. Smriti Vishwanath	BIOM
								11. Prof. Neelam Punjabi	BIOM
								12. Prof. Neha Kudu	INFT
								13. Prof. Akhil Masurkar	ETRX
14.	IL	Circuit Theory	Prof. Pravin Annadate (ETRX)	ETRX	-	3	1. Circuit Theory (CT)	1. Prof. Dattatray Bade	EXTC
				EXTC	-	3	2. Circuit Transmission Line (CTL)	2. Prof. Swapnil Ashtekar	EXTC
				BIOM	-	3	3. Electrical Network Analysis and Synthesis (ENAS)	3. Prof. Mohit Gujar	EXTC
								4. Prof. Pravin Annadate	ETRX
								5. Dr. Surav Mitra	ETRX
								6. Prof. Priyanka Shrivastava	BIOM
								7. Prof. Komal Lawand	BIOM
15.	IL	Basic Electrical Engineering	Prof. Javed Patel (ETRX)	EXTC	-	1	1. Basic Electrical Engineering (BEE)	1. Prof. Hemant Jadhav	EXTC
				ETRX	-	1	2. Basic Electrical Engineering (BEE)	2. Prof. Amit Maurya	EXTC
				ETRX	4	-	3. Electrical Machines (EM)	3. Prof. Mayurkumar Nanda	EXTC
								4. Prof. Tejal Page	EXTC
								5. Prof. Javed Patel	ETRX
								6. Prof. Uma Jaishakar	ETRX
								7. Prof. Veena Gawde	ETRX
								8. Prof. Poonam Shah	ETRX

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16.	IL	Computer Programming	Prof. Mandar Sohani (CMPN)	FE	2	-	1. Structured Programming Approach (SPA)	1. Prof. Vibha Wali	EXTC
				CMPN	-	3	2. Object Oriented Programming and Methodology (OOPM)	2. Prof. Ankita Tondwalkar	EXTC
				INFT	-	3	3. Object Oriented Programming and Methodology (OOPM)	3. Prof. Pooja Rane	EXTC
				ETRX	-	3	4. Object Oriented Programming and Methodology (OOPM)	4. Prof. Amruta Mardikar	EXTC
				EXTC	-	3	5. Object Oriented Programming and Methodology (OOPM)	5. Prof. Vaishali Patil	ETRX
				BIOM	-	3	6. Object Oriented Programming and Methodology (OOPM)	6. Prof. Girish Wadhwa	INFT
				EXTC	-	3	7. Object Oriented Programming and Methodology (OOPM)	7. Prof. Chaitali Nachane	BIOM
				ETRX	-	1	8. Structured Programming (SP)	8. Prof. Akshay Loke	INFT
							9. Prof. Girish Wadwa	INFT	
							10. Prof. Ichhanshu Jaiswal	INFT	
							11. Prof. Indu Anoop	INFT	
							12. Prof. Bhanu Tekwani	INFT	
							13. Prof. Shreya Bamne	CMPN	
							14. Prof. Yogesh Doulatramani	CMPN	
							15. Prof. Sachin Deshpande	CMPN	
							16. Prof. Sanjeev Dwivedi	CMPN	
							17. Prof. Devendra Pandit	CMPN	
							18. Prof. Rugved Deolekar	CMPN	
							19. Prof. Amit Nerurkar	CMPN	
							20. Prof. Swapnil Sonawane	CMPN	
							21. Prof. Ketan Kanere	CMPN	
							22. Prof. Mandar Sohani	CMPN	
							23. Prof. Snehal Andhare	CMPN	
							24. Prof. Prita Patil	CMPN	
							25. Prof. Sandeep Kamble	CMPN	
							26. Prof. Mohini Kamat	CMPN	
							27. Prof. Vipul Dalal	CMPN	

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17.	IL	Algorithm Analysis and Design	Prof. Rugved Deolekar (CMPN)	CMPN INFT CMPN CMPN  INFT CMPN	- - 4 4  4 -	3 3 - -  - ME1	1. Discrete Structure(DS) 2. (DSAA) 3. Analysis of Algorithm(AOA) 4. Theoretical Computer Science(TCS) 5. Automata Theory(AT) 6. Advance Algorithm and Complexity(AAC)	1. Prof. Sachin Deshpande 2. Prof. Sanjeev Dwivedi 3. Prof. Devendra Pandit 4. Prof. Rugved Deolekar 5. Prof. Amit Nerurkar 6. Prof. Swapnil Sonawane 7. Prof. Ketan Kanere 8. Prof. Pankaj Vanwari 9. Prof. Snehal Andhare 10. Prof. Divya Racha 11. Prof. Akshay Loke 12. Prof. Santosh Tamboli 13. Prof. Ajay Dhruv 14. Prof. Neha Chankhore 15. Prof. Harshali Rambade 16. Prof. Girish Wadhwa 17. Prof. Mohini Kamat 18. Prof. Ravindra Sangle 19. Prof. Sujay Ayachandran 20. Prof. Rohit Barve 21. Prof. Neraj Khairwal 22. Prof. Vidya Chitre 23. Prof. Dilip Motwani	CMPN CMPN CMPN CMPN CMPN CMPN CMPN CMPN CMPN INFT INFT INFT INFT INFT CMPN CMPN CMPN INFT INFT INFT CMPN
18.	IL	Computer Network	Prof. SachinDeshpande (CMPN)	INFT ETRX  CMPN CMPN  CMPN	4 -  - -  -	- 7  5 5  ME1	1. Computer Network(CN) 2. Computer Communication Network (CCN) 3. Computer Network(CN) 4. Network Programming Laboratory (NPL) 5. Advanced Computer Network (ACN)	1. Prof. Pranita Padhye 2. Prof. Rakshak Sood 3. Prof. Ajay Dhruv 4. Prof. Neha Chankhore 5. Prof. Indu Anoop 6. Prof. Debarai Ghosal 7. Prof. Harshali Rambade 8. Prof. Rinku Shah 9. Prof. Dilip Motwani 10. Prof. Amit Nerurkar 11. Prof. Divya Racha 12. Prof. Snehal Andhare 13. Prof. Sandeep Kamble	ETRX ETRX INFT INFT INFT INFT INFT INFT CMPN CMPN CMPN CMPN CMPN

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19.	IL	IT Infrastructure	Prof. Ajay Dhruv (INFT)	EXTC	8	-	1. Internet and Voice Communication (IVC)	1. Prof. Snehal Chothe	EXTC
				INFT	-	7	2. Cloud Computing (Cloud C)	2. Prof. Swapnil Ashtekar	EXTC
				EXTC	6	-	3. Computer Communication and Telecom Networks (CCTN)	3. Prof. Beena Ballal	EXTC
				INFTME	-	1	4. IT Infrastructure Design	4. Dr. Arpit Rawankar	INFT
				INFTME	2	-	5. Internet Of Things	5. Prof. Neha Chankhore	INFT
				CMPNME	8	-	6. Cloud Computing Laboratory	6. Prof. Shreya Bamne	INFT
				INFT	8	-	7. Storage Network Management and Retrieval	7. Prof. Ajay Dhruv	INFT
								8. Prof. Indu Anoop	INFT
								9. Prof. Kavita Shirsat	CMPN
								10. Prof. Ketan Kanere	CMPN
								11. Prof. Varsha Bhosle	INFT
20.	IL	Instruments and Measurement	Prof. Uma Jaishankar (ETRX)	ETRX	-	3	1. Electronic Instruments and Measurements (EIM)	1. Prof. Snehal Chothe	EXTC
				ETRX	4	-	2. Electrical Machines (EM)	2. Prof. Poonam Shah	ETRX
				EXTC	-	3	3. Electronic Instruments and Measurements (EIM)	3. Prof. Pravin Annadate	ETRX
				BIOM	4	-	4. Electronic Instruments and Control Systems (EICS)	4. Prof. Nisy Mathew	BIOM
				ETRX	6	-	5. Advanced Instruments Systems (AIS)	5. Prof. Neelam Punjabi	BIOM
				ETRX	6	-	6. Advanced Instruments and Power Electronics Lab (AIPE_LAB)	6. Prof. Smriti Viswanath	BIOM
21.	IL	Optical Communication and Network	Prof. Santosh Jagtap (EXTC)	EXTC	-	7	1. Optical Communication and Networks (OCN)	1. Dr. Arpit Rawankar	EXTC
				ETRX	-	7	2. Optical Fiber Communication(OFC)	2. Prof. Santosh Jagtap	EXTC
				BIOM	8	-	3. Lasers and Fiber Optics and Optical Communication (LAFC and OC)	3. Prof. Rajashree Soman	ETRX
				EXTC	-	ME-I	4. Optical Communication Network	4. Prof. Chaitali Nachane	BIOM



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22.	IL	Wireless and Mobile Communication	Prof. Ranjana Gite (EXTC)	EXTC EXTC ETRX ETRX  INFT CMPN CMPN  EXTC EXTC  EXTC EXTC	- 8 8 8  - 8 6  - ME-II  ME-II ME-II	7 - - -  7 - -  ME-I -  - -	1. Mobile Communication(MC) 2. Wireless Network (WN) 3. Mobile Communication (MC) 4. Advanced Networking Technologies (ANT) 5. Wireless Technology (WT) 6. Adhoc Wireless Networks 7. Mobile Communication & Computing 8. Next Generation Networks 9. Modern Digital Communication 10. Wireless Adhoc and Sensor Networks 11. Error Control Coding	1. Dr. Saurabh Mehta 2. Prof. Dattatray Bade 3. Prof. Ranjana Gite 4. Prof. Harshada Rajale 5. Prof. Ankita Tondwalkar 6. Prof. Pooja Rane 7. Prof. Rakshak Sood 8. Prof. Rinku Shah 9. Prof. Dilip Motwani 10. Prof. Sneha Annappanavar 11. Prof. Amit Dhanwani 12. Prof. Abhishek Pandey 13. Prof. Rasika Ransing 14. Prof. Indu Anoop 15. Prof. Debarati Ghosal	EXTC EXTC EXTC EXTC EXTC EXTC EXTC EXTC EXTC EXTC EXTC EXTC EXTC EXTC EXTC
23.	IL	Mathematics and Statistics	Prof. Ambadas Deshmukh (FE)	FE FE ALL ALL EXTC BIOM ME	- 2 - 4 - 6 -	1 - 3 - 5 - 1	1. Applied Mathematics – I 2. Applied Mathematics – II 3. Applied Mathematics – III 4. Applied Mathematics – IV 5. Biostatistics 6. Discrete Structures 7. Operation Research	1. Prof. Sampat Mali 2. Prof. Suvarna Udgire 3. Prof. Uday Kashid 4. Prof. Nasir Ansari 5. Prof. Vishwas Patil 6. Prof. Harshal Gharat 7. Prof. Shabanam Ansari 8. Prof. Ambadas Deshmukh	FE BIOM FE FE FE FE FE FE
24.	IL	Communication Skill and Humanities	Prof. Meenakshi Nandula (FE)	FE ALL  CMPN	2 -  6	- 5  -	1. Communication Skills 2. Business Communication and Ethics 3. Foreign Language French	1. Prof. Avila Naik 2. Prof. Meenakshi Nandula 3. Prof. Utpala Das 4. Prof. Micky Barua 5. Prof. Meghna Borate	FE FE FE FE FE
25.	IL	Applied Physics	Prof. Renu Mann (FE)	FE	1 -	- 2	1. Applied Physics-I 2. Applied Physics-II	1. Prof. Renu Mann 2. Prof. Pravin Garge 3. Prof. Ameya Nyayadhish	FE FE FE
26.	IL	General Engineering	Prof. Dipak Zade (FE)	FE	1 -	- 2	1. Engineering Mechanics 2. Engineering Drawing	1. Prof. Dipak Zade 2. Prof. Govind Mali 3. Prof. D.N. Krishna 4. Prof. Ishan Upadhyay 5. Prof. Aditya Kasar	FE FE FE FE FE

27.	IL	Applied Chemistry and Environmental Science	Prof. Sonaali Borkar (FE)	FE	1 - -	- 2 2	1. Applied Chemistry-I 2. Environmental Science 3. Applied Chemistry-II	1. Prof. Sonaali Borkar 2. Prof. Smruti Tekale 3. Prof. Poonam Bathla 4. Prof. Nilima Main	FE FE FE FE
28.	DL	Medical Imaging	Prof. Arunkumar Ram (BIOM)	BIOM BIOM	6 -	- 7	1. Medical Imaging – I 2. Medical Imaging – II 3. Biological Modeling & Simulation	1. Prof. Arunkumar Ram 2. Prof. Komal Lawand 3. Prof. Arunkumar Ram 4. Prof. Suvarna Udgire	BIOM BIOM BIOM BIOM
29.	DL	Medical Instrumentation (BIOM)	Prof. Jitendra Toravi (BIOM)	BIOM BIOM BIOM BIOM BIOM	- 6 - 4 8	5 - 7 - -	1. Biomedical Instrumentation – I 2. Biomedical Instrumentation – II 3. Biomedical Instrumentation – III 4. Transducers and Sensors for Medical Application 5. Hospital Management	1. Prof. Arunkumar Ram 2. Prof. Gajanan Nagare 3. Prof. Jitendra Toravi 4. Prof. Smriti Viswanath 5. Prof. Neelam Punjabi	BIOM BIOM BIOM BIOM BIOM
30.	DL	Biomaterials (BIOM)	Prof. Arunkumar Ram (BIOM)	BIOM BIOM	- 8	3 -	1. Biomaterials 2. Nuclear Medicine	1. Prof. Arunkumar Ram	BIOM
31.	DL	Anatomy and Physiology (BIOM)	Prof. Suvarna Udgire (BIOM)	BIOM BIOM	- -	3 7	1. Human Anatomy and Physiology 2. Biomechanics Prosthesis and Orthosis	1. Prof. Komal Lawand 2. Prof. Chaitali Nachane 3. Prof. Suvarna Udgire	BIOM BIOM BIOM
32.	DL	Random Signal Analysis (EXTC)	Prof. Dattatray Bade (EXTC)	EXTC EXTC	- -	5 ME-I	1. Random Signal Analysis 2. Statistical Signal Processing	1. Prof. Dattatray Bade 2. Prof. Swapnil Ashtekar	EXTC EXTC
33.	DL	RF & Microwave (EXTC)	Prof. Pravin Patil (EXTC)	EXTC EXTC EXTC ETRX EXTC	4 - - - -	- 5 7 5 -	1. Wave Theory & Propagation 2. RF Modeling and Antennas 3. Microwave Radar Engineering 4. Engineering Electromagnetics 5. RF and Microwave Engineering	1. Prof. Pravin Patil 2. Prof. Vibha Wali 3. Prof. Santosh Jagtap 4. Prof. Shetal Mapare 5. Prof. Ashish Shekhar 6. Prof. Amit Maurya 7. Prof. Vaibhav Kshirsagar	EXTC EXTC EXTC EXTC EXTC EXTC EXTC
34.	DL	Satellite Communication (EXTC)	Prof. Vaibhav Kshirsagar (EXTC)	EXTC EXTC EXTC	8 - -	- ME-I -	1. Satellite Communication 2. Advanced Antenna Design 3. Satellite Networking	1. Prof. Ranjana Gite 2. Prof. Vaibhav Kshirsagar 3. Prof. Pooja Rane 4. Prof. Sheetal Mapare	EXTC EXTC EXTC EXTC

35.	DL	Telecom Network Management (EXTC)	Prof. Sheetal Mapare (EXTC)	EXTC	8	-	Telecom Network Management	1. Prof. Ankita Tondwalkar 2. Prof. Satendra Mane	EXTC EXTC
36.	DL	Data Encryption (EXTC)	Prof. Deepti Punjabi (EXTC)	EXTC	6	-	Data Compression and Encryption	1. Prof. Deepti Punjabi 2. Prof. Ranjana Gite 3. Prof. Sayali Tirodkar	EXTC EXTC EXTC
37.	DL	Television & Video Engineering (EXTC)	Prof. Amey Revandkar (EXTC)	EXTC	6	-	Television & Video Engineering	1. Prof. Amey Revandkar 2. Prof. Deepti Punjabi	EXTC EXTC
38.	DL	Power Electronics (ETRX)	Prof. Nayana Mahajan(ETRX)	ETRX	6	- 7	Power Electronics-1 Power Electronics-2	1. Dr. Anjali Deshpande 2. Prof. Nayana Mahajan 3. Prof. Amaya Pethe 4. Prof. RajashreeSoman 5. Prof. Poonam Shah 6. Prof. Nisy Mathew 7. Prof. Uma Jaishankar	ETRX ETRX ETRX ETRX ETRX ETRX ETRX
39.	DL	Robotics (ETRX)	Prof. Geetha Narayanan (BIOM)	ETRX	8	-	Robotics	1. Prof. Geetha Narayanan	BIOM CMPN
40.	DL	Machine learning (CMPN)	Prof. Vipul Dalal (INFT)	CMPN CMPN INFT CMPN INFT-ME INFT-ME CMPN-ME  CMPN-ME CMPN-ME CMPN-ME	- - - 8 2 2 -  - - 2	7 7 7 - - - 1  1 1 -	1. Artificial Intelligence 2. Soft Computing 3. Intelligent System 4. Machine Learning 5. Soft Computing 6. AI and Machine Learning 7. Logic and automated reasoning 8. Natural Language Processing 9. Computational Intelligence 10. Advance Soft Computing	1. Prof. Avinash Shrivasa 2. Prof. Umesh Kulkarni 3. Prof. Amit Dhanwani 4. Prof. Divya Racha 5. Prof. Mohini Kamat 6. Prof. Amit Nerurkar 7. Prof. Pankaj Vanvari 8. Prof. Vipul Dalal 9. Prof. Ichhanshu Jaiswal 10. Prof. Girish Wadhwa 11. Prof. Neha Chankhore 12. Prof. Shashikant Mahajan 13. Prof. Shreya Bamne	CMPN CMPN CMPN CMPN INFT INFT INFT INFT INFT INFT INFT INFT
41.	DL	Computer Graphics (CMPN)	Prof. Santosh Tamboli (INFT)	CMPN INFT	4 -	- 5	1. Computer Graphics 2. Computer Graphics and virtual reality	1. Prof. Ravindra Sangale 2. Prof. Divya Nimbalkar 3. Prof. Pankaj Vanwari 4. Prof. Vipul Dalal	CMPN CMPN CMPN CMPN

								5. Prof. Sachin Deshpande 6. Prof. Santosh Tamboli 7. Prof. Akshay Loke 8. Prof. Deepali Shrikhande	CMPN INFT INFT INFT
42.	DL	Big Data Analytics  Data Science (CMPN & INFT)	Prof. Vidya Chitre (INFT)	INFT-ME CMPN-ME CMPN INFT	- 2 8 8	1 - - -	1. Data Science 2. Data Science 3. Big Data Analytics 4. Big Data Analytics	1. Prof. Vidya Chitre 2. Prof. Shreya Bamne 3. Prof. Deepali Vora 4. Prof. Pankaj Vanwari 5. Prof. Umesh Kulkarni	INFT INFT INFT CMPN CMPN
43.	DL	Systems Software (CMPN)	Prof. Pankaj Vanwari (CMPN)	CMPN INFT EXTC INFT CMPN  INFT CMPN CMPN-ME INFT-ME CMPN-ME	- - - - 6  6 8 2 2 2	5 5 5 5 -  - - - -	1. Operating Systems 2. Operating Systems 3. Operating Systems 4. Open Source Technologies 5. System Programming & Compiler Construction 6. Distributed System 7. Parallel Distributed System 8. High Performance Computing 9. High Performance Computing 10. Advanced Operating System	1. Prof. Pankaj Vanwari 2. Prof. Avinash Shrivastava 3. Prof. Snehal Andhare 4. Prof. Divya Nimbalkar 5. Prof. Mohini Kamat 6. Prof. Suja Jayachandran 7. Prof. Kavita Shirsat 8. Prof. Umesh Kulkarni 9. Prof. Amit Nerurkar 10. Prof. Harshali Rambade 11. Prof. Vijal Jain 12. Prof. Chintan Shah 13. Prof. Debarati Ghosal 14. Prof. Girish Wadhwa 15. Prof. Sachin Bojewar 16. Prof. Deepali Nayak 17. Prof. Shashikant Mahajan 18. Prof. Indu Anoop 19. Prof. Ichhanshu Jaiswal	CMPN CMPN CMPN CMPN CMPN CMPN CMPN CMPN INFT INFT INFT INFT INFT INFT INFT INFT INFT
44.	DL	Software Engineering and Project Management (INFT)	Prof. Sachin Bojewar (INFT)	CMPN  CMPN CMPN  INFT INFT  INFT- ME  INFT CMPN INFT	-  6 6  6 -  2  - 8 8	5  - -  7 -  7  - - 1	1. Structured and Object Oriented Analysis & Design 2. Software Engineering 3. Software Project Management 4. Software Engineering 5. Software Project Management 6. Advanced Software Architecture 7. Usability Engineering 8. Human Machine Interaction 9. Software Testing & Quality Assurance	1. Prof. Kavita Shirsat 2. Prof. Sneha Annappanavar 3. Prof. Divya Racha 4. Prof. Ketan Kenare 5. Prof. Ravindra Sangle 6. Prof. Divya Nimbalkar 7. Prof. Prita Patil 8. Prof. Sandeep Kamble 9. Prof. Sachin Bojewar 10. Prof. Deepali Shrikhande 11. Prof. Neeraj Khairwal 12. Prof. Deepali Nayak 13. Prof. Snehal Andhare 14. Prof. Bhanu Tekwani	CMPN CMPN CMPN CMPN CMPN CMPN CMPN INFT INFT INFT INFT INFT INFT

				INFT- ME	-	1	10. Advances in Software Engineering		
				INFT- ME	-	1	11. User Experience Engineering		
				INFT- ME	-	1	12. Advanced Software Quality Assurance		
				CMPN-ME	-	1	13. User Experience Design		
45.	DL	IT Security (CMPN)	Prof. Dilip Motwani (CMPN)	INFT	4	-	1. Information Theory & Coding	1. Prof. Ichhanshu aiwal	INFT
				INFT	6	-	2. System & Web Security	2. Prof. Anuja Gote	INFT
				CMPN	-	7	3. Cryptography & System Security	3. Prof. Santosh Tamboli	INFT
				CMPN	-	7	4. Network Threat & Attack Laboratory	4. Prof. Yogesh Doulatramani	INFT
				CMPN	8	-	5. Digital Forensic	5. Prof. Neha Chankhore	INFT
				INFT/CMPN-ME	2	1	6. Cyber Security & Laws	6. Prof. Chintan Shah	INFT
				INFT-ME	2	-	7. Enterprise Security & Risk Management	7. Prof. Debarati Ghosal	INFT
				INFT-ME	-	1	8. Cyber Security & Law	8. Prof. Vijal Jain	INFT
				CMPN-ME	-	1	9. Ethical Hacking & Digital Forensics	9. Prof. Ajay Dhruv	INFT
								10. Prof. Amit Dhanwani	CMPN
								11. Prof. Dilip Motwani	CMPN
								12. Prof. Swapnil Sonawane	CMPN
								13. Prof. Divya Nimbalkar	CMPN
								14. Prof. Ketan Kanere	CMPN
								15. Prof. Sandeep Kamble	CMPN

46.	DL	Database (INFT)  Data Warehousing and Mining (INFT)	Prof. Deepali Vora (INFT)	INFT INFT CMPN INFT CMPN CMPN INFT-ME CMPN-ME	- 6 4 - 6 8 - 2	3 - - 5 - - 1 -	1. Database Management System 2. Data Mining & Business Intelligence 3. Database Management System 4. Advanced Database Management System 5. Distributed Databases 6. Data Warehouse & Mining 7. Data Storage Management & Retrieval 8. Data Storage & Retrieval	1. Prof. Sachin Deshpande 2. Prof. Vipul Dalal 3. Prof. Pankaj Vanwari 4. Prof. Devendra Pandit 5. Prof. Suja Jayachandran 6. Prof. Amit Dhanwani 7. Prof. Divya Nimbalkar 8. Prof. Sandeep Kamble 9. Prof. Ketan Kanere 10. Prof. Kavita Shirsat 11. Prof. Divya Racha 12. Prof. Prita Patil 13. Prof. Deepali Vora 14. Prof. Vidya Chitre 15. Prof. Santosh Tamboli 16. Prof. Rohit Barve 17. Prof. Neeraj Khairwal 18. Prof. Vijal Jain 19. Prof. Sachin Bojewar 20. Prof. Girish Wadhwa 21. Prof. Indu Anoop 22. Prof. Debarati Ghosal 23. Prof. Shreya Bamne	CMPN CMPN CMPN CMPN CMPN CMPN CMPN INFT INFT INFT INFT INFT INFT INFT INFT INFT INFT
47.	DL	Enterprise Resource Planning (ERP)&Supply Chain Management (SCM) (CMPN)	Prof. Suja Jayachandran (CMPN)	CMPN INFT-ME INFT	- - 2	7 1 -	1. Enterprise Resource Planning ERP & Supply Chain Management SCM) 2. Management & Information System 3. Enterprise Security & Risk Management	1. Prof. Dilip Motwani 2. Prof. Suja Jaychandran 3. Prof. Sachin Bojewar	CMPN CMPN INFT
48.	DL	Web & E-Commerce (CMPN)	Prof. Kavita Shirsat (CMPN)	INFT CMPN INFT INFT INFT-ME INFT-ME INFT-ME	4 - 6 8 2 2 2	- 5 - - - - -	1. Web Programming 2. Web Technologies Laboratory 3. Advanced Internet Technologies 4. E-Commerce 5. Advanced Web Technologies 6. Digital Business Management 7. E-Business & Social Network Analysis	1. Prof. Shreya Bamne 2. Prof. Vijal Jain 3. Prof. Debarati Ghosal 4. Prof. Deepali Vora 5. Prof. Neha Chankhore 6. Prof. Harshali Rambade 7. Prof. Indu Anoop 8. Prof. Bhanu Tekwani 9. Prof. Ajay Dhruv 10. Prof. Kavita Shirsat 11. Prof. Suja Jayachandran 12. Prof. Divya Niimbalkar 13. Prof. Divya Racha	INFT INFT INFT INFT INFT INFT INFT INFT INFT CMPN CMPN CMPN

								14. Prof. Sandeep Kamble 15. Prof. Ketan Kanere	CMPN CMPN
49.	DL	Others	External	CMPN-ME INFT-ME	2	-	1. Finance Management	1. Prof. Utpala Das	FE
				CMPN-ME INFT-ME	2	-	2. Entrepreneurship Development and Management	2. Prof. Nidhi Patel	FE
				CMPN-ME INFT-ME	2	-	3. Human Resource Management	3. Prof. PoojaMolankar	FE
				CMPN-ME INFT-ME	2	-	4. Professional Ethics and CSR IPR and Patenting	4. Prof. PoonamBhalla	FE
				CMPN-ME INFT-ME	2	-	5. Environmental Management Project Management		
				CMPN-ME INFT-ME	2	-	6. Research Methodology		
				CMPN-ME INFT-ME	-	1	7. Product Lifecycle Management		
				CMPN-ME INFT-ME	-	1	8. Reliability Engineering		
				CMPN-ME INFT-ME	-	1	9. Management Information System		
				CMPN-ME INFT-ME	-	1	10. Design of Experiments		
				CMPN-ME INFT-ME	-	1	11. Disaster Management and Mitigation Measures		
				CMPN-ME INFT-ME	-	1	12. Energy Audit and Management		

## Cluster Mentor Meeting and Cluster Performance Assessment Report – Even 2017-18- First 4 weeks

Course Code - ETL601

Course Name Basics of VLSI Design

Dept. :- ETRX

Cluster Serial No. IL/DL	Name of the Cluster	VIT Cluster Mentor Name and Department	External Industry Mentor Details / Company – Designation – Contact Number	External Academic Mentor Details / Institute – Designation – Contact Number
IL -9	VLSI and IC Technology	Dr. Sangeeta Joshi Professor and Technical Advisor (ETRX) Mob: 9869039269	N. K. Manjula Rani Manger, Cypress Semiconductors. Ltd. Bangalore Mob: 7760902378	Prof. Saurabh Lodha Professor , EE Dept. IIT Bombay Mob: 9867285270
Date of Cluster Meeting and Venue	Attended by – Tick [ √ ]	Duration of the Meeting	Name of the Related Faculty with the Course and their Respective Department	
			Present for the meet	Absent in the meet
5 <sup>th</sup> Jan 2018	VIT Cluster Mentor Industry Mentor* Academic Mentor* √	2.30 – 4.30	Satendra Mane Anand Paralkar Girish Gidaye Amaya Pethe Tejal Page Anuradha Joshi Geeta Naryanan	Girish Gidaye

### Single External Cluster mentor meeting date [Planned]:-

- 1) Recent technology advancements discussed during the meeting related to the course Latest upcoming research topic "Neuromorphic Computing" which is recently included in the IIT curriculum is discussed for guest lecture. This topic requires prerequisite knowledge of Artificial Intelligence and Neural Network.
- 2) The GAP analysed for the course
  - He commented that the subject syllabus is although very vast but covers many aspects of VLSI field and follows top to bottom approach as against IIT which follows bottom to top approach
  - Clocking styles (module 6) should be taught in the end and can be considered as a separate module
  - He also suggested that interconnect delay part which is in module 6 should be taught before inverter topic (module 2) so students will be able to relate it better. He also suggested to have experiments on interconnect delay.
  - For ETRX practicals, use of FINFETs in adder circuits is discussed. He suggested to have one bit 18nm finfet adder in cadence



**Cluster Mentor Meeting and Cluster Performance  
Assessment Report – Even 2017-18- First 4 weeks**

S. No.	Item	Plan	Timeline
1.	Clocking styles (module 6) should be taught in the end and can be considered as a separate module	Incorporated in the content delivery	Topic will be taught at the end
2.	Comparison between two design styles of the same circuit with respect to their performance.	Experiment incorporated	Seventh week of the term
3.	FINFETs in adder experiment	Experiment is yet to perform	Last week of the term
4.	Interconnect delay	Experiment design and performance is yet to study	5 <sup>th</sup> week experiment will be designed

- 3) Any other discussion / requests / special issues ...
- Books suggested for various topics: Digital Systems by Ronald Tocci, Digital Integrated Circuits by Rabaey & Nikolic & Chandrakasan (For design styles and Interconnect parameters), Fundamental of Modern VLSI Devices (Taur and Ning).
  - IIT Courses suggested: EE224- Digital Systems, EE671-VLSI Design (for layouts). Prof. Madhav Desai and Prof. Sachin Patekar engages these courses at IIT. He also advised to engage guest lecture from one of these course contents to mitigate the gap. Some topics from EE224 can be included as BSA.
  - For VHDL he suggested the book titled "DSD using VHDL" by Charles Roth. He also suggested book titled "Modern VLSI devices" by Yuan Taur and Ning for Fundamentals of devices.

**Cluster Mentor Meeting and Cluster Performance  
Assessment Report – Even 2017-18- First 4 weeks**

4) Status of the lab work :

Name of the Professor	Div	Batch	No. of Experiments	Journal checked for how many experiment s	Difficulties, if any	Design of New expts discussed with cluster mentor or not ,	if Yes, mention date
SJO	B	4	5	4	NIL	Yes	03/01/2018 02/02/2018 09/02/2018
SJO	C	4	5	4	NIL	Yes	03/01/2018 02/02/2018 09/02/2018
GGI	A	4	4	2	NIL	Yes	03/01/2018 09/02/2018
GGI	C	3	5	1	NIL	Yes	03/01/2018 09/02/2018
AP	A	2	5	4	NIL*	Yes	03/01/2018 02/02/2018 09/02/2018
AP	B	2	4	3	NIL*	Yes	03/01/2018 02/02/2018 09/02/2018
AP	B	3	5	4	NIL*	Yes	03/01/2018 02/02/2018 09/02/2018
AP	C	2	4	2	NIL*	Yes	03/01/2018 02/02/2018 09/02/2018
ANJ	A	1	5	1	NIL*	Yes	02/02/2018 09/02/2018

## Cluster Mentor Meeting and Cluster Performance Assessment Report – Even 2017-18- First 4 weeks

Name of the Professor	Div	Batch	No. of Experiments	Journal checked for how many experiments	Difficulties, if any	Design of New expts discussed with cluster mentor or not ,	if Yes, mention date
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ANJ	C	1	5	1	NIL*	Yes	02/02/2018 09/02/2018

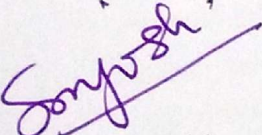
5) Status of syllabus completion & Status of the lecture being conducted under this cluster

Name of the Professor	Division	Syllabus completion expectations as per AAP	No. of lectures completed till 9 <sup>th</sup> Feb 2018	Percentage Syllabus completion	Whether syllabus is substantial for IA test as mentioned in AAP
GGI	B	Module 1 and 2 For IA test 1	17	80%	Yes
GGI	C	Module 1 and 2 For IA test 1	16	80%	Yes
AP	A	Module 1 and 2 For IA test 1	16	75%	Yes

6) Quality of delivery: Cannot comment as Lecture /Practical sessions are not monitored

SJO : Sangeeta Joshi  
ANJ: Anuradha Joshi

GGI: Girish Gidaye  
AP : Amaya Pethe

  
Dr. Sangeeta Joshi  
(Cluster Mentor)

Course Code – ETC606

Course Name VLSI Design

Department: EXTC

Cluster Serial No. IL/DL	Name of the Cluster	VIT Cluster Mentor Name and Department	External Industry Mentor Details / Company – Designation – Contact Number	External Academic Mentor Details / Institute – Designation – Contact Number
IL -9	VLSI and IC Technology	Dr. Sangeeta Joshi Professor and Technical Advisor (ETRX) Mob: 9869039269	N. K. Manjula Rani Manger, Cypress Semiconductors. Ltd. Bangalore Mob: 7760902378	Prof. Saurabh Lodha Professor, EE Dept. IIT Bombay Mob: 9867285270
Date of Cluster Meeting and Venue	Attended by – Tick [ √ ]	Duration of the Meeting	Name of the Related Faculty with the Course and their Respective Department	
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**Cluster Mentor Meeting and Cluster Performance  
Assessment Report – Even 2017-18- First 4 weeks**

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**Cluster Mentor Meeting and Cluster Performance  
Assessment Report – Even 2017-18- First 4 weeks**

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AP	A	2	5	4	NIL*	Yes	03/01/2018 02/02/2018 09/02/2018
AP	B	2	4	3	NIL*	Yes	03/01/2018 02/02/2018 09/02/2018
AP	B	3	5	4	NIL*	Yes	03/01/2018 02/02/2018 09/02/2018
AP	C	2	4	2	NIL*	Yes	03/01/2018 02/02/2018 09/02/2018
ANJ	A	1	5	1	NIL*	Yes	02/02/2018 09/02/2018

**Cluster Mentor Meeting and Cluster Performance  
Assessment Report – Even 2017-18- First 4 weeks**

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ANJ	C	1	5	1	NIL*	Yes	02/02/2018 09/02/2018

5) Status of syllabus completion & Status of the lecture being conducted under this cluster

Name of the Professor	Division	Syllabus completion expectations as per AAP	No. of lectures completed till 9 <sup>th</sup> Feb 2018	Percentage Syllabus completion	Whether syllabus is substantial for IA test as mentioned in AAP
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GGI	C	Module 1 and 2 For IA test 1	16	80%	Yes
AP	A	Module 1 and 2 For IA test 1	16	75%	Yes

SJO : Sangeeta Joshi  
ANJ: Anuradha Joshi

GGI: Girish Gidaye  
AP : Amaya Pethe

*Sangeeta Joshi*

Dr. Sangeeta Joshi  
(Cluster Mentor)

**Cluster Mentor Meeting and Cluster Performance  
Assessment Report – Even 2017-18- First 4 weeks**

Course Code - ET606

Course Name VLSI Design

Dept. - EXTC

Cluster Serial No. IL/DL	Name of the Cluster	VIT Cluster Mentor Name and Department	External Industry Mentor Details / Company – Designation – Contact Number	External Academic Mentor Details / Institute – Designation – Contact Number
IL -9	VLSI and IC Technology	Dr. Sangeeta Joshi Professor and Technical Advisor (ETRX) Mob: 9869039269	N. K. Manjula Rani Manger, Cypress Semiconductors. Ltd. Bangalore Mob: 7760902378	Prof. Mahesh Patil Professor , EE Dept. IIT Bombay Mob: 9867285270
Date of Cluster Meeting and Venue	Attended by – Tick [ √ ]	Duration of the Meeting	Name of the Related Faculty with the Course and their Respective Department	
			Present for the meet	Absent in the meet
9 <sup>th</sup> Feb 2018	VIT Cluster Mentor √ Industry Mentor* <input type="checkbox"/> Academic Mentor* <input type="checkbox"/>		Tejal Page Ankita Tondwalkar Amey Revandkar Amrita Mardikar	Satendra Mane

Minutes of the Meeting Report enclosed



Venue:- Dr. Sangeeta Joshi's office ,VIT  
Time : 12.00 PM- 1.00 PM

Date : 09/02/2018

Chaired by: Dr. Sangeeta Joshi

Agenda:

1. To review status of Lab work and theory lectures
2. To discuss about availability of Industry mentor
3. To discuss about design of new experiments.

Minutes:

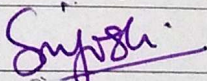
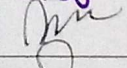
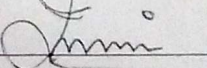
At the outset of the meeting, Dr. Sangeeta Joshi, Cluster Head, introduced the purpose of the meeting along with the agenda.

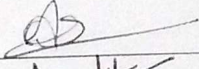
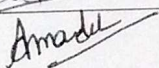
Following are the points put forth by the Cluster Mentor.

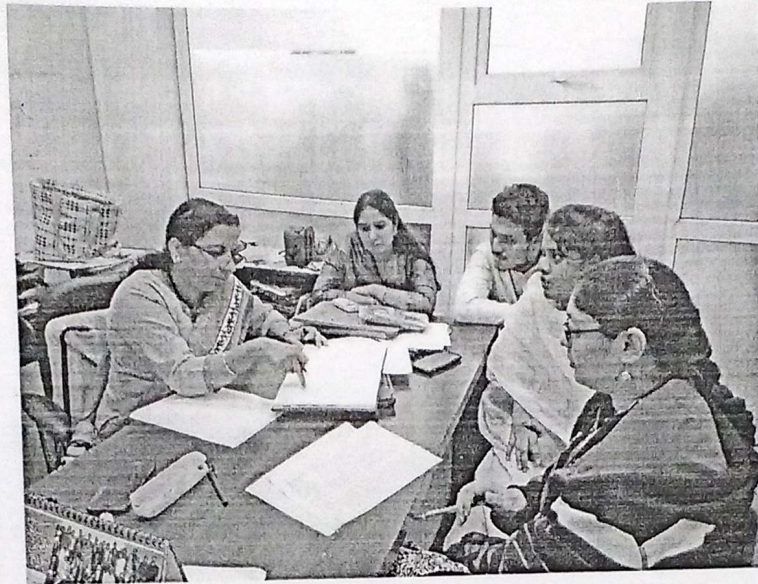
1. Review of Lab work with respect to no. of experiments conducted, no. of experiments checked is taken division-wise and batch-wise .
2. Review of number of Theory lectures conducted and syllabus completion from IA test point of view is carried out.
3. Following new experiments based on ngspice are discussed and demonstrated by cluster mentor
  - a. Effect of variation of Resistance value on the resistive load inverter and studying its impact on the Noise Margin
  - b. Effect of variation of Kr and VDD on the VTC of CMOS inverter

Meeting ended with thanks to the Chair.

Attended by:

Sr. No.	Names	Department	Signature
1.	Sangeeta Joshi	ETRX	
2	Tejal Page	ETXC	
3	Ankita Tondwalkar	ETXC	

4	Amey Revandkar	ETXC	
5.	Amrita Mardikar	ETXC	



**Cluster Mentor Meeting and Cluster Performance  
Assessment Report – Even 2017-18- First 4 weeks**

Course Code - ETL601

Course Name Basics of VLSI Design

Dept. :- ETRX

Cluster Serial No. IL/DL	Name of the Cluster	VIT Cluster Mentor Name and Department	External Industry Mentor Details / Company – Designation – Contact Number	External Academic Mentor Details / Institute – Designation – Contact Number
IL -9	VLSI and IC Technology	Dr. Sangeeta Joshi Professor and Technical Advisor (ETRX) Mob: 9869039269	N. K. Manjula Rani Manger, Cypress Semiconductors. Ltd. Bangalore Mob: 7760902378	Prof. Mahesh Patil Professor , EE Dept. IIT Bombay Mob: 9867285270
Date of Cluster Meeting and Venue	Attended by – Tick [ √ ]	Duration of the Meeting	Name of the Related Faculty with the Course and their Respective Department	
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2 <sup>nd</sup> Feb 2018	VIT Cluster Mentor √ Industry Mentor* <input type="checkbox"/> Academic Mentor* <input type="checkbox"/>	2.30 to 3.30	Amaya Pethe Anuradha Joshi	Girish Gidaye
9 <sup>th</sup> Feb 2018	VIT Cluster Mentor √ Industry Mentor* <input type="checkbox"/> Academic Mentor* <input type="checkbox"/>	12.00 to 1.00	Girish Gidaye Amaya Pethe Anuradha Joshi	NIL

Minutes of the Meeting Report enclosed

Venue:- Dr. Sangeeta Joshi's office ,VIT  
Time : 12.00 PM- 1.00 PM

Date : 09/02/2018

Chaired by: Dr. Sangeeta Joshi

**Agenda:**

1. To review status of Lab work and theory lectures
2. To discuss about availability of Industry mentor
3. To discuss about Guest lecture
4. To discuss about design of new and problem based learning experiments.

**Minutes:**

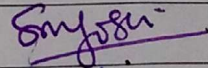
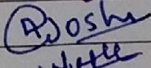
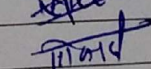
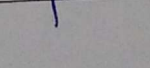
At the outset of the meeting, Dr. Sangeeta Joshi, Cluster Head, introduced the purpose of the meeting along with the agenda.

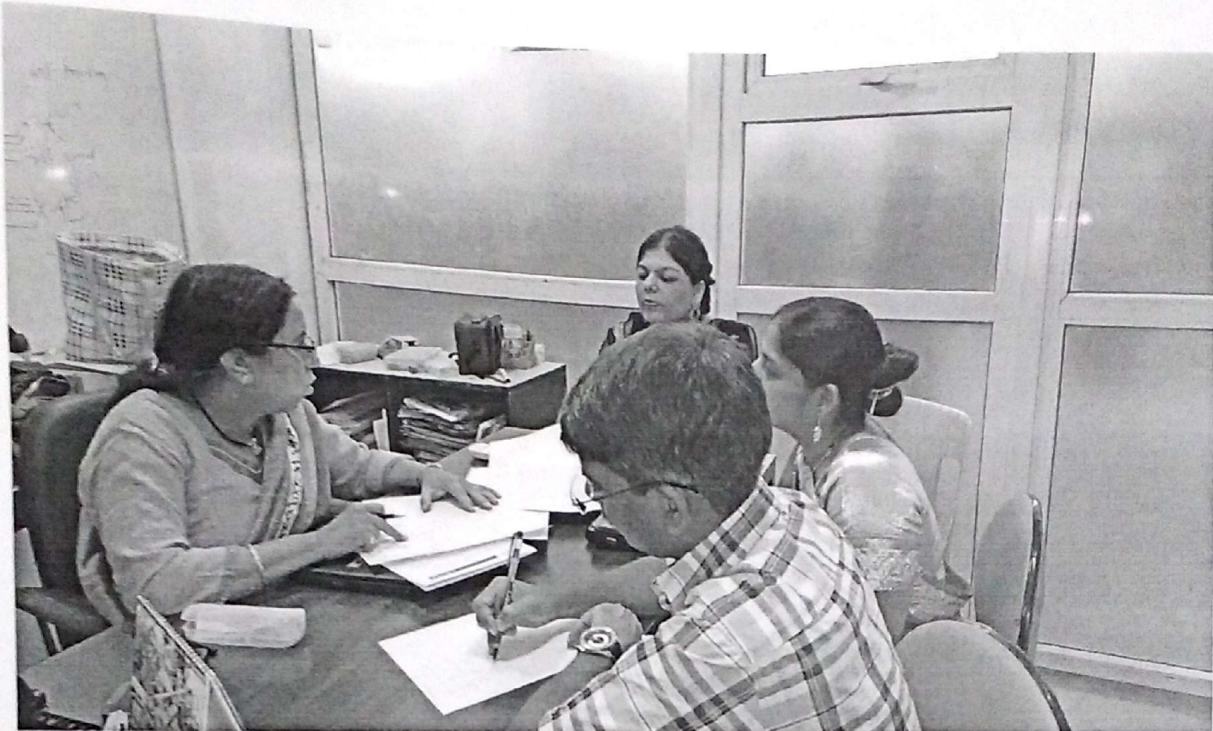
Following are the points put forth by the Cluster Mentor.

1. Review of Lab work with respect to no. of experiments conducted, no. of experiments checked is taken division-wise and batch-wise .
2. Review of number of Theory lectures conducted and syllabus completion from IA test point of view is carried out.
3. New Experiments using cadence are discussed.
4. It is suggested to carry out PBL in the next week and then decide which PBL is more suitable for students to implement.

Meeting ended with thanks to the Chair.

**Attended by:**

Sr. No.	Names	Department	Signature
1.	Sangeeta Joshi	ETRX	
2.	Anuradha Joshi	ETRX	
3.	Prof. Amaya Pethe	ETRX	
4.	Prof. Girish Gidaye	ETRX	



Venue:- Dr. Sangeeta Joshi's office ,VIT  
Time : 2.30 PM- 3.30 PM

Date : 02/02/2018

Chaired by: Dr. Sangeeta Joshi

Agenda:

1. To discuss about the design of new and problem based learning experiments.
2. To receive inputs on the Lab Experiment prepared by the faculty in VLSI Design Lab,(TE-ETRX)
3. To Design new experiments to enhance the learning of students and to satisfying all COs of VLSI Design Lab,(TE-ETRX).

Minutes:

At the outset of the meeting, Dr. Sangeeta Joshi, Cluster Head, introduced the purpose of the meeting along with the agenda.

Following are the points put forth by the Cluster Mentor.

1. Experiment completion status at the end of 4<sup>th</sup> week.
2. Format of journals. It is insisted to have hand written journals.
3. Status of journals correction.
4. Discussions on problem based Experiment.
5. New design of experiments on interconnects delay, which is in module 6 so students will be able to understand the topic properly as well as CO attainment will be satisfied.
6. NgSpice commands for potting graphs with labels and legends are discussed
7. Regular journal assessment along with signature in index page.
8. Journal should contain suitable theory, Figures and accurate plots and sensible conclusions.
9. Discussed next week's couple of experiments.

Meeting ended with thanks to the Chair.

Venue:- Dr. Sangeeta Joshi's office ,VIT  
Time : 12.00 PM- 1.00 PM

Date : 09/02/2018

Chaired by: Dr. Sangeeta Joshi

Agenda:

1. To review status of Lab work and theory lectures
2. To discuss about availability of Industry mentor
3. To discuss about design of new experiments.

Minutes:

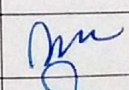
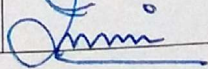
At the outset of the meeting, Dr. Sangeeta Joshi, Cluster Head, introduced the purpose of the meeting along with the agenda.

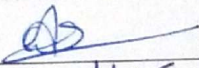
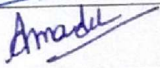
Following are the points put forth by the Cluster Mentor.

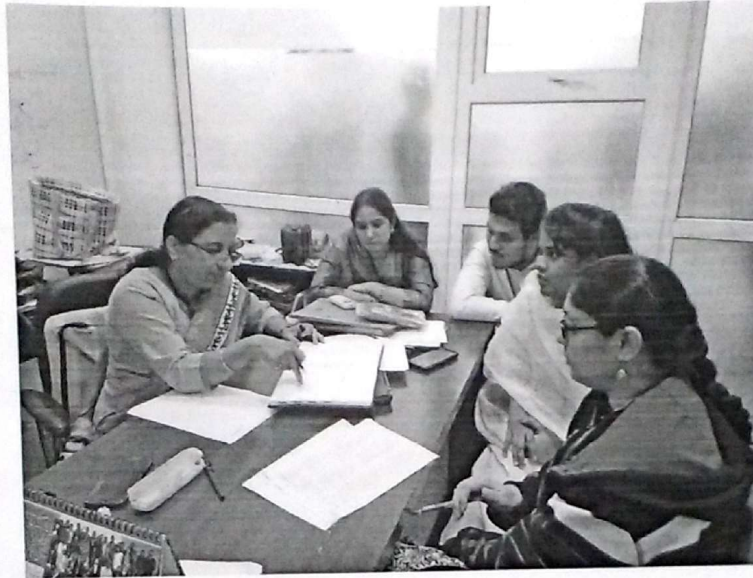
1. Review of Lab work with respect to no. of experiments conducted, no. of experiments checked is taken division-wise and batch-wise .
2. Review of number of Theory lectures conducted and syllabus completion from IA test point of view is carried out.
3. Following new experiments based on ngspice are discussed and demonstrated by cluster mentor
  - a. Effect of variation of Resistance value on the resistive load inverter and studying its impact on the Noise Margin
  - b. Effect of variation of Kr and VDD on the VTC of CMOS inverter

Meeting ended with thanks to the Chair.

Attended by:

Sr. No.	Names	Department	Signature
1.	Sangeeta Joshi	ETRX	
2	Tejal Page	ETXC	
3	Ankita Tondwalkar	ETXC	

4	Amey Revandkar	ETXC	
5.	Amrita Mardikar	EXTC	





Venue:- F101A at 2PM

Chaired by: Dr. Sangeeta Joshi

Agenda:

- ① Review of lab work
- ② completion of syllabus for IA
- ③ new experiments to be added

Minutes:

- ① Review of lab work was discussed. Number of experiments conducted so far and status of lab journal continuous evaluation was discussed
- ② The new experiments to be added in lab were discussed
- ③ Two experiments on NM spice to be added in the lab were discussed and demonstrated by the mentor.
  - (a) Effect of change of resistance value in resistive load inverter and noise margins
  - (b) Effect of change of  $k_r$  value and  $V_{DD}$  on CMOS inverter VTC
- ④ Demo on cadencen software (at least introduction to cadence) to be given to students
- ⑤ VLSI theory load completed in lecture was also discussed.

Attended by:

Sr. No.	Names	Department	Signature
1	Ankita Tondusalkar	EXTC	<i>[Signature]</i> 9/2/18.
2	Tefal Pagle	EXTC	<i>[Signature]</i>
3	Amrita Kardikar	EXTC	<i>[Signature]</i> 9/2/18
4	Amey Renuwankar	EXTC	<i>[Signature]</i>

The Meeting concluded with vote of thanks

Principal/Chairperson

Venue:- F101 at 12.00 to 1.00

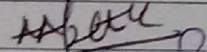
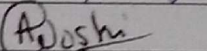
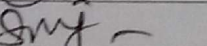
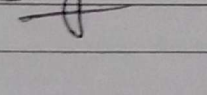
Chaired by: Dr. Sangeeta Joshi

Agenda:

Minutes:

- 1) Status of lab waste & lectures
- 2) Design of new expts.
- 3) Industry member
- 4) Guest lecture
- 5) Cadence - new expt. on Intercannal

Attended by:

Sr. No.	Names	Department	Signature
1.	Amaya Pethe	ETRX	
2.	Girish Gidaye	ETRX	
3.	Anuradha Joshi	ETRX	
4.	S. M. Jogli	ETRX	

The Meeting concluded with vote of thanks

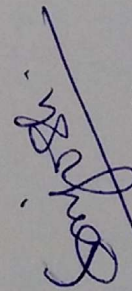
Principal/Chairperson

Academic Administration & Preview	Study course content, find gap in syllabus and advise faculty for suitable BSA for gap mitigation
	Decide course content delivery pattern with cluster members
	Suggest to HoDs regarding most suitable faculty for critical subjects for ensuring best outcome
	Decide laboratory activities and ensuring quality enhancement in lab work
	Suggest basic as well as advanced equipment procurement for labs
	Arrange industry/ laboratory visits in discussion with cluster members
	Suggest mini projects and final year projects
Industry mentor meeting	Select/invite external industry and external academic experts
	Arrange external industry and academic experts meet with VIT cluster members (VIT faculty across the departments)
	Prepare agenda ahead of external cluster mentor meet
	Study inputs from external experts & incorporate through the semester
	Ensure preparation minutes of external cluster mentor meet and final report
IA Question Papers	Decide IA Question Paper difficulty level & quality
	Assess and ensure IA Question paper quality and standard
	Study IA Marks Patten and make suggestions to the faculty prior to declaration of the marks to the students
Semester Exam. Question Papers & Results	Analyze examination question papers to get real feel of question paper and have discussion with cluster members to have feel of actual difficulty level
	Study result pattern and discuss the same among cluster members
Remedial Lectures	Analyze marks pattern of the failed students in critical subject in cluster
	Compile data of names and phone numbers of students who have failed
	Study what they really need to do to clear the subject in immediately next attempt
	Arrange remedial lectures – teachers, schedule or tutorial and solution
	Monitor progress and effectiveness of the remedial tutorial
Induction Program	Give inputs to HoD regarding presentation of caustic subjects in the best possible manner during the coming induction program – choose most appropriate faculty from your cluster for the same purpose
Laboratory Readiness	Design laboratory activities which will encourage problem based learning
	Check and ensure lab readiness for coming semester labs and examination
	Participate in laboratory upgradation activities and writing proposals for lab

Cluster Mentor, Member and Subject Details - October 2017

Cluster Serial No.	Cluster Name	Institute Cluster (IL) / Departmental Cluster (DL)	VIT Cluster Mentor Details/ Dept. - Designation - Contact Number	External Industry Cluster Mentor Details / Company - Designation - Contact Number	External Academic Cluster Mentor Details / Institute - Designation - Contact Number
09	VLSI and IC Technology	Institute Cluster(IL)	Dr. Sangeeta Joshi Professor and Technical Advisor (ETRX) Mob: 9869039269	Prof. Mahesh Patil Professor, EE Dept. IIT Bombay Mob: 9867285270	N. K. Manjula Rani Manger, Cypress Semiconductors. Ltd. Bangalore Mob: 7760902378

Odd Semester Subject Details			Even Semester Subject Details			Dept.	Members	Dept
Sr. No.	Sem.	Dept.	Sr. No.	Sem.	Dept.			
1	7	ETRX		6	ETRX	Basics of VLSI Design [12 Th + 24 Lab] = 36	Dr. Sangeeta Joshi Girish Gidaye Amaya Pethe	ETRX ETRX ETRX
2	7	BIOM		6	EXTC	VLSI Design [12 Th + 24 Lab] = 36	Geetha Narayanan Priyanka Shrivastav	Anand Paralkar Satendra Mane Tejal Page
<b>Total Load Odd</b>			<b>Total Load Even</b>			<b>48</b>	<b>Total 5 members</b>	<b>Total 6 members</b>



Dr. Sangeeta Joshi

Cluster Mentor

Name of the Cluster		
Institute Cluster Mentor	Name : Dr. Sangeeta Joshi	
	Designation : Professor and Technical Advisor	
	Department : Biomedical Engineering	
External Cluster Mentor from Academia	Name : Prof. Mahesh Patil	
	Designation : Professor , EE Dept.	
	Name of the Institute : IIT Bombay	
	Contact No. : 9867285270	E-Mail Id : ssmande@dbit.in
External Cluster Mentor from Industry	Name : N. K. Manjula Rani	
	Designation : Manger	
	Name of the Company :Cypress Semiconductors. Ltd. Banglore	
	Contact No. :7760902378	E-Mail Id : <a href="mailto:nkm@cypress.com">nkm@cypress.com</a>

Venue: M-202

Time: 03:00PM

Date: 30/06/2017

**Guest Speaker:** Prof. Mahesh Patil, IIT Bombay (Electrical Department)**Chaired by:** Dr. Sangeeta Joshi**Agenda:** VLSI CLUSTER advisory board meeting

1. Course content delivery ( VLSI Design & BVLSI Design): various resources
2. Design of New Experiments (Problem Based Experiments)
3. Beyond syllabus activities
4. Simulation/ CAD Tools ( NG Spice, Cadence, Magic, Microwind, Electric)

**Minutes:**

1. EXTC Department (Advanced VLSI)
  - a. Finding out the stability in operational amplifier should be included as an experiment
  - b. Experiment should be based on distortion in Amplifier
  - c. Experiment should be based on switched capacitor
2. For Biomedical Department (Basic VLSI)
  - a. Inclusion of two experiments in Verilog
  - b. Experiment should be based on Dynamic Logic CMOS
3. Some mini-project on converter to be given as assignment.
4. Combine Passive/Active load experiment into one experiment.

**Attended By:**

1. Prof. Girish Gidaye, ETRX Department
2. Prof. Amaya Pethe, ETRX Department
3. Prof. Sunil Kavatkar, ETRX Department
4. Prof. Anuradha Joshi, ETRX Department
5. Prof. Akhil Masurkar, ETRX Department
6. Prof. Neha Gulati, ETRX Department
7. Prof. Satendra Mane, EXTC Department
8. Prof. Tejal Page, EXTC Department

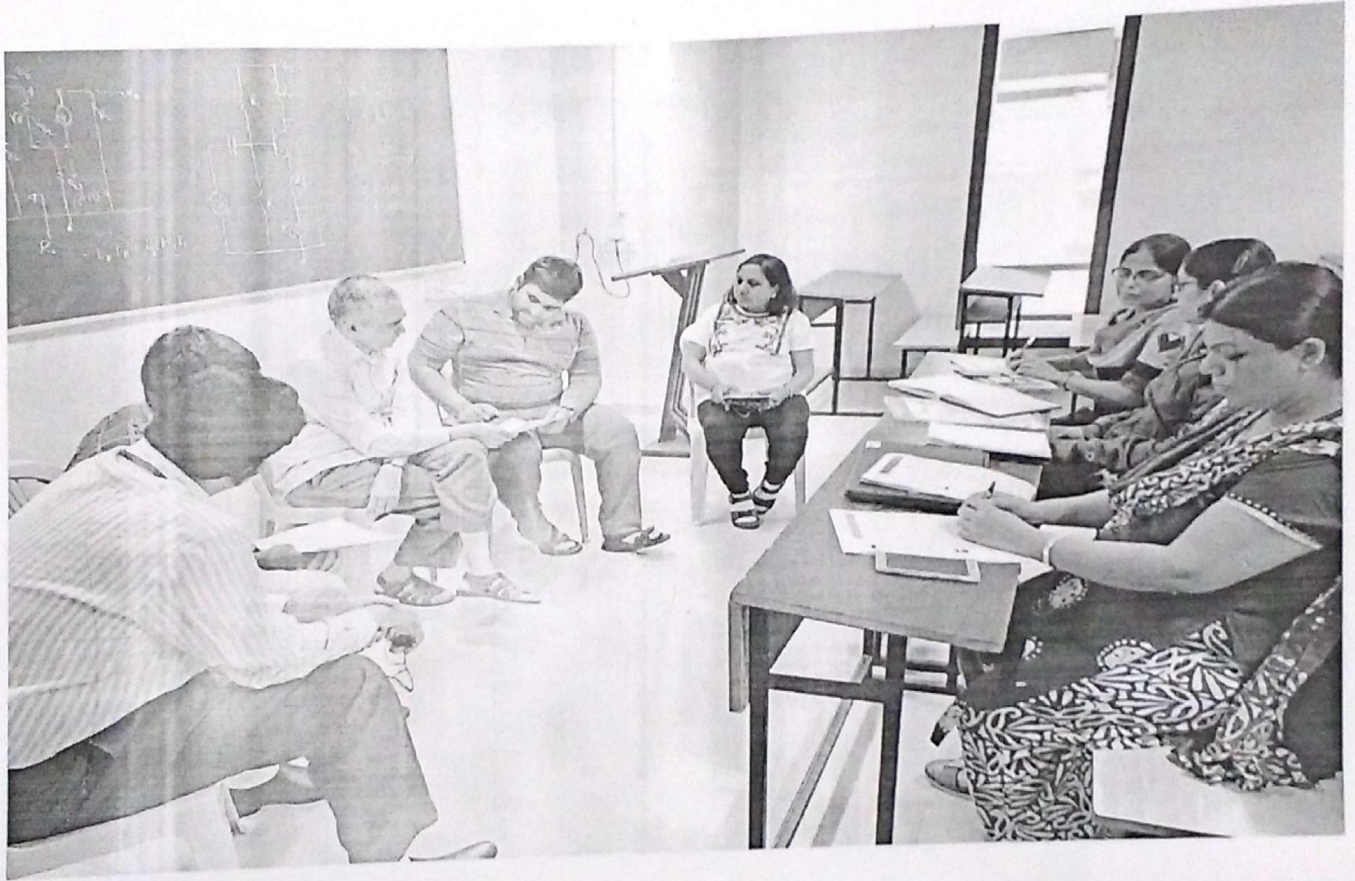
The Meeting concluded with vote of thanks

**Cluster Mentor**

Dr. Sangeeta Joshi



Glimpse of Meeting:



*Sanjoshi*

Attendance Report

Date: 30<sup>th</sup> June 2017

Cluster- Mentor meeting with Academic Mentor.

Name of Academic Mentor: Prof. M.B. Patil, IITB

S.No.	Name of the staff Member	Department	sign
1	Dr Sangesta Joshi	ETRX	<i>[Signature]</i>
2	Girish Gidaye	ETRX	<i>[Signature]</i>
3	Satyendra Mare	EXTC	<i>[Signature]</i>
4	Amaya Pethe	ETRX	<i>[Signature]</i>
5	Arnil Masurkar	ETRX	<i>[Signature]</i>
6	Anuradha Joshi	ETRX	<i>[Signature]</i>
7	Sunil Kavathekar	ETRX	<i>[Signature]</i>
8	Tejal Poye	EXTC	<i>[Signature]</i>
9	Meha Gulati	ETRX	<i>[Signature]</i>
10	Sunil Kavathekar	ETRX	<i>[Signature]</i>

Academic Member  
(Resource) Prof. M.B. Patil  
(Person) *[Signature]*

Page | 3

Venue: A-201

Time: 04:00PM

Date: 17/02/2017

**Guest Speaker:** Dr. Sudhakar Mande, Chairman BoS ETRX, Head EXTC, DBIT

**Chaired by:** Dr. Sangeeta Joshi

**Agenda:** VLSI CLUSTER advisory board meeting

1. Course content delivery ( VLSI Design & BVLSI Design): various resources
2. Design of New Experiments (Problem Based Experiments)
3. Beyond syllabus activities
4. Simulation/ CAD Tools ( NG Spice, Cadence, Magic, Microwind, Electric)

**Minutes:**

1. Inclusion of New Experiments:
  - a. Effect of Technology node on Fall Time
  - b. Charge Sharing in Dynamic Logic
  - c. Use of Predictive Technology Models for MOSFET and Interconnects
  - d. Scaling of CMOS
  - e. Transistorized Adder Circuits
  - f. Effect of Process Variation on CMOS inverter
  - g. Set up time, Hold time of flip-flops
  - h. Read time of 6T SRAM
2. How to make use of Predictive models in NGSPICE
3. Use of PTM Models for Noval Devices and Interconnects
4. Various Commands used in NGSpice (Ex. Deriv, print )
5. Calculation of Dynamic and Static Power dissipation of CMOS inverter
6. Equivalent Inverter and Analytical treatment for 2-Input NAND and NOR gate
7. Inclusion of Electric simulation tool for practicals

**Attended By:**

1. Dr. Anjali Deshpande, H.O.D. ETRX
2. Girish Gidaye
3. Prof. Amaya Pethe, ETRX
4. Prof. Satendra Mane, EXTC
5. Dr. Varsha Turkar, ETRX
6. Prof. Geetha Narayanan, ETRX
7. Prof. Neha Gulati, ETRX
8. Sunil Kavatkar

The Meeting concluded with vote of thanks

### Cluster Mentor

Dr. Sangeeta Joshi

### Glimpse of Meeting:



*Sangeeta Joshi*

Attendance Report

VIT

Department of Electronics Engineering  
Advisory Meet-VLSI & IC Technology

Name of Industry Cluster Mentor: Dr. Sudhakar Mande

Designation & Company Name: HOD, CSTE, DAD Boreo InA of Tech.

Signature: [Signature]

Date: 17/02/17

Attendance

Sr. No	Name of faculty	Designation	Signature
1	Amrta Pehe	Assistant Professor	[Signature]
2	Safendra Mane	Assistant - Prof	[Signature]
3	DR. VARSHA TURKAR	ASSOCIATE PROF	[Signature]
4	Geeta Narayana	ASSOCIATE PROF	[Signature]
5	Chiranj B. Giridhar	Associate Prof.	[Signature]
6	Neha Gaidals	Assistant Prof.	[Signature]
7	Sunil Kavalkar	ASST. PROF	[Signature]
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HOD,  
Dr. Anjali Deshpande  
Department of Electronics Engineering

Name of Industry Cluster Mentor: \_\_\_\_\_

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Venue: Board Room

Time: 12.30pm

Date: 12/07/2016

Guest Speaker: Prof. Saurabh Lodha, IIT Bombay

Chaired by: Dr. Sangeeta Joshi

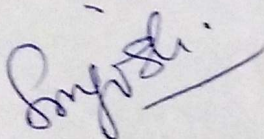
Agenda: VLSI CLUSTER advisory board meeting

1. Course content delivery (ICT & BVLSI): various resources
2. Design of Experiments
3. Beyond syllabus activities
4. CAD tools for design and simulation

Minutes:

1. Inclusion of videos like silicon run1&2
2. Trim/Srim simulator for Ion implantation process(open source)
3. IEDM conference presentations for recent developments in foundries like Intel
4. Use of CPLD boards for mini projects as well as for testing and verification
5. Presentation assignment to students on Novel devices and technologies
6. Explore open source circuit simulator developed by Prof. M. B. Patil, IITB
7. Use of Electric open source for drawing layout and simulations
8. Use of LTSPICE should be promoted as it is compatible to Electric
9. Refer to Digital design lab manual prepared by Prof. Madhav Desai
10. Refer e book by Robert Pierre for Nano devices

The Meeting concluded with vote of thanks



Cluster Mentor

Dr. Sangeeta Joshi

Glimpses of Meeting:



Sanyal