Electronics Insight
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Editors:
Dr. S. Rathod, Prof. Priya Deshpande, Kritika Sabharwal, Aayush Patial

About

Electronics Engineering Department, since its inception in 1995, has achieved great recognition in the field of technical education. The department offer B.E. in Electronics Engineering, a four-year degree program with an intake of 60 students. The National Board of Accreditation accredited the department in 2004 and for two years in 2013. Department adopted the philosophy of 'Outcome Based Education.' It comprises highly qualified and professionally skilled faculty members with an impressive record of the published work. Department faculties are rigorously involved in R&D activities. Their research work is published in reputed international journals like IEEE, IET, AIP, ASP, Elsevier, Wiley, IETE etc. and also in international conferences. The faculty members conduct training programs in the various areas of engineering such as embedded systems, VLSI and networking.

Department has made conscious and concerted efforts to develop the department as a centre of excellence. The Department has an exclusive library with 1000+ books and access to services like NPTEL. The Laboratories are equipped with standard equipments & accessories from best manufacturers and industry grade tools like LabView, Mentor Graphics, Tanner Tools,

Xilinx, Active HDL, KEIL, DSP Application software etc. Some of the laboratories have advanced hardware and demonstration setups like NI-ELVIS, PLC, Robot Models, Trainers, Microcontroller/FPGA/CPLD prototype boards etc. The department has signed MoU with several companies like Tata Consultancy Services, Infosys etc. and reputed institutes like IIT Bombay, VNIT etc. to train and significantly improve technical knowledge and skills of students. Department also encourages entrepreneurship cell activities for students to learn fundamentals of business to build their own startups. Faculties of our department are exclusively involved with IEDC, NEN, Incubation Centre and E-Cell activities.

The department keeps up to date with the continuous changes in the field of technology and encourages the students to keep track of the constantly changing world. The faculty members and students are involved in organizations like the IEEE, IETE and college body ESA. Projects done by department students are appreciated by corporate, at various national level competitions and exhibitions like Elekrama, Robocon, Texas Instruments and IEDC.

Vision:

To create professionally **competent engineers, researchers and entrepreneurs** in the field of **electronics engineering** for the **benefit of society**

Mission:

➢ To impart **quality engineering education** as per the industry need

➢ To motivate students to undertake **research** on next generation technologies

➢ To create an **environment** that shall foster growth of professionals capable of effectively using the **scientific and technical knowledge** for the **betterment of mankind**

Programme Educational Objectives:

- **PEO1:** Graduates will have **successful career** in the chosen path utilizing **technical and professional skills**, while complying with **ethical standards**
- **PEO2:** Graduates undertake **research activities** on next generation technologies in electronics engineering
- **PEO3:** Graduates **pursue higher studies** in internationally recognized institutes/universities

Programme Outcomes:

At the end of the programme student will be able to:

- **PO1: Engineering Knowledge:** apply knowledge of mathematics, science and electronics engineering to solve complex engineering problems

- **PO2: Problem Analysis:** identify, formulate, research literature and analyze complex engineering problems to arrive at valid conclusions

- **PO3: Design & Development of Solutions:** design algorithm, a system, circuit, component, or process to meet desired needs with real time constraints

- **PO4: Investigation of Complex Problem:** design experiments, analyze and interpret data to arrive at valid conclusions

- **PO5: Modern Tools Usage:** apply appropriate techniques and tools in the modelling and design of electronic systems

- **PO6: Engineer and Society:** apply the knowledge to assess societal, health, safety, legal and cultural issue and consequent responsibilities to electronics engineer

- **PO7: Environment & Sustainability:** demonstrate knowledge and an understanding of an impact of engineering solution on environment and need for sustainable development

- **PO8: Ethics:** commit to professional ethics, responsibilities and norms of engineering practice

- **PO9 : Individual & Team work:** function effectively as an individual, and as a member or leader in diverse teams and multidisciplinary settings

- **PO10: Communication:** effectively communicate, write report, design documentation and make presentations

- **PO11: Project management & Finance:** demonstrate knowledge and an understanding of management principles and apply them while managing projects

- **PO12: Lifelong Learning:** recognize need for and engage in lifelong learning in the context of technological change

Board of Studies (BOS) & Department Advisory Board (DAB)

Dr. Surendra S. Rathod (Chairman)
Professor and Head of Department,
Sardar Patel Institute of Technology,
Mumbai

Dr. Mahesh B. Patil (Domain Expert)
Professor, Department of Electrical
Engineering,
Indian Institute of Technology Bombay,
Mumbai

Dr. Baylon G. Fernandes (Domain Expert)
Professor, Department of Electrical
Engineering, Indian Institute of Technology
Bombay, Mumbai

Academician (University Nominee)

Dr. Ravi Todi (Alumni)
Ph.D., Past IEEE Chair Region 1, Foundry
Engineering Manager, Qualcomm
Technologies Inc.
San Diego, CA – 92121

Mr. Abhishek Sharma, (Alumni)
Ph.D. Researcher, Carnegie Mellon
University, USA

Mr. Nandish Avalani
(Alumni & Industry Representative)
MS-North Carolina State University,
Engineer, Staff I- Electronic Design Central
Engineering,
Broadcom Comm. Pvt. Ltd. Mumbai

Mr. Viral Hingarh (Alumni)
MBA IIM Indore,
Senior Manager, Axis Bank

Mr. S Ranganathan
(Employer Representative)
GM – Defence & Aerospace SBG, Larsen &
Toubro– Heavy Engineering, Mumbai

Prof. K. T. Talele
(Senior Faculty from Department)
Associate Professor, Sardar Patel Institute of
Technology, Mumbai

Dr. Deepak Karia
(Senior Faculty from Department)
Associate Professor, Sardar Patel Institute of
Technology, Mumbai

Dr. Rajendra Sutar
(Senior Faculty from Department)
Associate Professor, Sardar Patel Institute of
Technology, Mumbai

Salient Features of the Department:

- Department is provisionally accredited by National Board of Accreditation (NBA) with effective 8/11/2013.
- Department adopted outcome based education system as per the NBA norms
- Now institute has applied for the academic autonomy to UGC and University of Mumbai. Department has also applied for Ph.D. Research Center in Electronics Engineering.
- Department is planning for the Center of Excellence in 'Embedded System' under ARM University Program and Center of Excellence in 'Control system, instrumentation and automation.'
- Department involves industry for the development of laboratory set-up. Recently technical expertise is sought from Siemens for development of control system, instrumentation and power electronics laboratory.
- Department has continuous assessment policy. Every experiment is graded on the same day it is performed. For this department has developed practical record which student has to regularly bring during practical sessions. Every student is given 'written feedback/suggestion' based on his performance in the laboratory sessions. Ten performance indices and corresponding Rubrics are developed which help teacher to arrive at proper suggestion/feedback.
- To encourage students for the research work and publication, department reimburses registration money for publications to the students.
- Institute has allocated Rs. 50,000/-- per year to the department for the purchase of books in the department library. These books are available to the students for immediate reference.
- Department also encourage students to develop various mini-projects. Every mini-project gets maximum Rs. 1000/-- as reimbursement. Department also funds the final year projects as per the need.
- Department received PSoC development boards under MoU signed with Eduvance, the educational arm of Vanmat Technologies Pvt. Ltd. under which department received technical support from Cypress Semiconductor Inc. and ARM university program
- Department has vibrant mentoring system to help students at individual levels. Apart from professional counsellor, teachers in the department do individual mentoring to students regarding professional guidance, career advancement, course work specific, laboratory specific and all round development. Every semester officially at least two times mentor meetings are held, however need based attention is being paid towards all the students. Based on the student's feedback in mentor meeting, regular improvements in the department are carried out for example students are provided with the lockers to keep their belongings to reduce their baggage.
- Department has various schemes/programmes like SPES and SDP for skill development of students.

Department Faculty

Dr. S.S. Rathod
Designation: Professor & Head
Qualification: Ph.D. (IIT Roorkee)
Experience: 15 Years
Expertise: Semiconductor Device Modeling, VLSI
Design, Radiation Effects
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Dr. Deepak C Karia
Designation: Associate Professor
Qualification: Ph.D. Electronics (V.J.T.I., Mumbai)
Experience: 14+ Years
Expertise: Wireless & Mobile Communication,
Networking
Email: deepak_karia@spit.ac.in

Prof. K. T. Talele
Designation: Associate Professor
Qualification: M.E. (Pursuing Ph.D.)
Experience: 20 Years
Expertise: Digital signal processing, Image, audio,
video Processing, Machine Vision
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Prof. N.A. Bhagat
Designation: Associate Professor
Qualification: M.E. (Pursuing Ph.D.)
Experience: 14 Years
Expertise: Digital Design, Network Analysis,
Electronic Circuit Design, IP
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Dr. Rajendra Sutar
Designation: Associate Professor
Qualification: Ph.D. (VNIT Nagpur)
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Expertise: Power Electronics, Instrumentation
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Prof. P. V. Kasambe
Designation: Assistant Professor
Qualification: M.E. (Pursuing Ph.D.)
Experience: 12 Years
Expertise: Control Sys, Instrumentation, Linear IC

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Prof. Payal Shah
Designation: Assistant Professor Experience: 05
Years
Qualification: ME.
Expertise: BEE, Power Electronics, Control System,
Signal Processing
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Prof. Manisha Bansode
Designation: Assistant Professor
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Experience: 05 Years
Expertise: Electronics Circuit Design,
Communication Engineering
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Prof. G. T. Haldankar
Designation: Assistant Professor
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Experience: 05 Years
Expertise: BEE, Power Electronics, Electronic
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Prof. Priya Deshpande
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SUPPORTING STAFF

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Shri Jitendra Dongre
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Shri Laxmikant Nandanwar
Laxmikant: Lab Assistant
Qualification: Diploma, Pursuing B.E.

RECENT PUBLICATIONS BY FACULTY

Recent Journal Publications:

1. **S. S. Rathod**, "Investigation of Electromagnetic Radiations in Mumbai," **IETE Journal of Education**, vol. 55, no. 2, pp. 81-89, Feb 2015.
2. Snehal Lopes and **S. S. Rathod**,"Analysis and Design of Finfet Based Variable Gain Amplifier," **Int. Journal of Engineering Research and Applications**, vol. 4,Issue no. 1, pp. 21-25, Jan 2014
3. Akshata Raut, **S. S. Rathod** and **N. A. Bhagat**, "Comparative Analysis of Transimpedance Amplifier of 45 nm and 180nm CMOS Technology," **IJSET**, vol. 2, Issue no. 10, pp. 1022-1025, Oct 2013. ISSN: 0018-9383
4. **Rajendra G. Sutar**, Ashwin G. Kothari, "Intelligent electrocardiogram pattern classification and recognition using low-cost cardio-care system" in **IET Science, Measurement and Technology**, pp. 134-143, Mar 2015
5. Pratik P. Joshi, **Deepak C. Karia**, Pratibha V. Rawat and Meghna G. Thakur, "Dynamic clustering scheme for distributed spectrum sensing in cognitive radio networks", **Int. J. of Communication Networks and Distributed Systems**, Vol.12, No.2, pp.169 - 182, 2014
6. **Deepak Karia** and Vasant Godbole, "ACO-based biology inspired routing protocol for ad hoc networks", **Int. J. of Swarm Intelligence**, Inderscience, 2014 (In-Press)
7. **K.T.Talele**, Arunkumar Mishra, "Highway Traffic Surveillance By Unsupervised Learning," **IJACSCC**, vol. 1, No. 1, pp. 13-17,Nov. 2013. ISSN: 2321-4058
8. Uday Pandit Khot and **N.A.Bhagat**, "Current Mode Based Communication System" **Int. Journal of innovative research in electrical , electronics, instrumentation and control engineering**, vol. 3, no. 2, March -2015.
9. Kusuma Keerthi, "Design of High performance Single Precision Floating Point Multiplier", **ITSI-TEEE**, vol. 2, Issue.1, 2014. ISSN: 2320-8945

Recent Conference Publications:

1. **S. S. Rathod**, "Research and innovations in higher technical education," **National Conf. on TEQIP-II: Best Policies and Practices**, SPFU and SGGS, Nanded, pp.123-129, Jan 2014.
2. **S. S. Rathod**, "Challenges faced by institutes in industry collaboration," **National Conf. on TEQIP-II: Best Policies and Practices**, SPFU and SGGS , Nanded, pp.116-122, Jan 2014
3. K. R. Agrawal, S. M. Kottilingel, R. Sonkusare, and **S. S. Rathod** "Performance characteristics of a single walled Carbon Nanotube Field Effect Transistor (SWCNT-FET)," IEEE Int. Conf. on Circuits, Systems, Communication and Information Technology Applications **(CSCITA)**, Mumbai, pp. 30-35, Apr. 2014.

4. Mahalaxmi Bhat and **S. S. Rathod**, "Phase Frequency Detector using FinFET: Comparative Analysis," Int. Conf. on Electrical, Electronics, Computer Science, Management and Mechanical Engineering **(ICE2CSM2E-2014)**,IITR, Pune , pp.72-76, Jun 2014 **(Best Paper Award)**

5. Semonti Saha, Anita Topkar and **S. S. Rathod**, "Study of MEMS Micorcantilever Based on their Geometric Parameters," IEEE Int. Conf. on Advanced Communication Control and Computing Techniques **(ICACCCT)**, Chennai, pp. 163-167, May 2014.

6. Saurabh Acharya, Hitesh Kabra, P. V. Kasambe and **S. S. Rathod** "Performance evaluation of an Integer Wavelet Transform for FPGA Implementation," Int. Conf. on Nascent Technologies in the Engineering Field **(ICNTE-2015)**, Mumbai, pp. 1-5, Jan. 2015.

7. Pradyumna S. G. and **S. S. Rathod** "Analysis of CMOS Synapse generating Excitatory Postsynaptic Potential using DC Control Voltages," IEEE Global Conference on Communication Technologies **(GCCT-2015),** Nagarcoil, TN, pp. 1-4, 23-24th Apr. 2015.

8. **P. V. Kasambe** and **S. S. Rathod** "VLSI WT based PPG signal denoising," IEEE Int. Conf. on Advances in Computing, Communication and Control **(ICAC3)**, Mumbai, pp. 1-6, Apr. 2015.

9. Meet Poladia, Pawankumar Fakatkar ,Sachin Hatture, **S. S.Rathod** and Sanajana Kuruwa, "Detection and Analysis of Waterborne Bacterial Colonies using Image Processing and Smartphones," 2015 IEEE Int. Conf. on Smart Technologies and Management for Computing, Communication, Controls, Energy and Materials **(ICSTM 2015)**, Chennai, pp. 1-6, May 2015. (Accepted)

10. Pradyumna S. G. and **S. S. Rathod** "Analysis of CMOS Inhibitory Synapse with varying Neurotransmitter Concentration, Reuptake Time and Spread Delay," 19th Int. Symp. on VLSI Design and Test **(VDAT)**, Ahmedabad, 26-29 Jun. 2015. (Accepted)

11. Mahesh Rathod, **Deepak C.Karia**, "Performance measurement of WEP and WPA2 on WLAN using OpenVPN", in proceedings of International Conference on Nascent Technologies in the Engineering Field (**ICNTE**), Vashi, New-Mumbai, India, Jan2015.

12. Bhushan D., **Deepak C.Karia**, "A 5.8 GHz ISM band microstrip antenna for RFID applications", in proceedings of International Conference on Nascent Technologies in the Engineering Field (**ICNTE**), Vashi, New-Mumbai, India, Jan2015

13. S.Goswami, **Deepak C.Karia** and Bhushan D., "Multiband and Wideband Antenna for Wi-Fi, WLAN, X-Band and Space Research Applications ", in proceedings of International Conference on Recent cognizance in wireless communication & image processing, 16-17 January 2015, Jaipur ,India.

14. M.Bhujbal and **Deepak C.Karia**, "Planar Dipole Antenna Design for DTV Broadcasting Application" in proceedings of International Conference on Advances in Communication and Computing Technologies **(ICACACT)**, August 2014, Mumbai.

15. Aditya Desai and **Deepak Karia,** "Patch Antenna for Communication Devices", in proceedings of International Conference on Advances in Communication and Computing Technologies **(ICACACT)**, August 2014, Mumbai.

16. **Deepak C.Karia**, M. Bhujbal and A.Desai "Wideband Printed Dipole Antenna with Embedded Loops and Coupling Patches for Digital TV Signal Reception" in proceedings of International Conference on Advances in Computing, Communications and Informatics **(ICACCI)**, September-2014, Delhi.

17. **Deepak C. Karia**, Anuradha Jadiya, "MM-SOAR Protocol using Multiple Metrics for Wireless Mesh Network," 2nd **International Conference on Recent Trends in Computer Networks and Distributed Systems Security, SNDS ,** vol. 420, pp. 70-78., 2014.

18. **Deepak C.Karia** and S. Shinde, "Clustering Based Routing Strategies for Energy Management in Ad-hoc Networks" in proceedings of 2nd **International Conference on Recent Trends in Computer Networks and Distributed Systems Security, SNDS** 2014, Trivandrum, vol. 420,pp. 79-90.

19. Aditya Desai, **Deepak Karia** and M.Bhujbal, "Inbuilt Multiband Microstrip Antenna for Portable Devices", in proceedings of 2nd International Conference on International Symposium on Signal Processing and Intelligent Recognition Systems, **SIRS 2014,** Trivandrum, vol. 264, pp. 225-234.

20. Sandesh Patil and **Kiran Talele** "Suspicious Movement Detection And Tracking Based On Color Histogram," International conference communication, information and computing technology **(ICCICT-2015)**, Mumbai, pp. 1-6, Jan. 2015.

21. Ashish Sahi and **Kiran Talele** "Person Tracking Using Mean Shift With Gray Level Grouping," International conference communication, information and computing technology **(ICCICT-2015)**, Mumbai, pp. 1-5, Jan. 2015.

22. Kevin D'souza and **Kiran Talele** "Voice Conversion Using Gaussian Mixture Models," International conference communication, information and computing technology **(ICCICT-2015)**, Mumbai, Jan. 2015.

23. **R.G. Sutar**, A.G.Kothari and A.G.Keskar, "Development of an Embeded System for Real Time Heart Rate Variability Analysis," IEEE 13th **International Symposium on Communication and Information Technologies ,** pp. 288-292, 2013.

24. Harshal Vashi, **G.T.Haldankar**, Y.S.Rao, "Real Time Circuit Simulation using DSP Processor," , *Int. Conf. for Convergence of Technology,* vol. , No. 1, pp. 13-17, 2013.

25. *N.P Athavale and* **K.T. Talele**, *"Comparision of various Image Registration Techniques with the Proposed Hybrid System,"***Proc. Of Int . Conf. On Advances in Recent Technologies In Electrical and electronics**, May 2013. DOI: 03

26. Shiburaj Pappu, **K.T. Talele**, K.V.Mehul, "Modified Enhanced Steady State Genetic Algorithm for Scheduling and Optimization Problems", India Conference **(INDICON)**, Annual IEEE , pp. 1-5, Dec *2013*.

27. **G. T. Haldankar, Payal Shah**, "A Low Powered Auto-titrator using pH Endpoint Detection" International Conference on Technologies for Sustainable Development **(ICTSD-2015),** Feb.04-06,2015, Mumbai, India.

28. **Kusuma Keerthi,** "Design of High performance Single Precision Floating Point Multiplier", **Int. Conference on Engineering and Applied Science (ICEAS)**,pg 38-43,ISBN:978-3-643-24819-09,Bangalore, July 2014.

Guest Lectures/ Invited Talks Delivered by Faculty and Achievements in 2014-15:

1. Dr. S. S. Rathod was resource person for Two day workshop on "Challenges in VLSI Design" at CRCE Bandra on 13th and 14th Mar. 2015
2. Dr. S. S. Rathod was resource person for one day seminar on "NBA Awareness Workshop" at L. T. College of Engineering on 27th Feb. 2015.
3. Dr. S. S. Rathod was resource person for one day seminar on "NBA Do's and Don'ts" at Theem College of Engineering, Palghar on 27th Dec. 2014
4. Dr. S. S. Rathod was resource person for one day seminar on "Outcome Based Accreditation Process" at Bharti Vidyapeeth College of Engineering on 16th Dec. 2014
5. Dr. S. S. Rathod was resource person for one day session on "Attainment of course outcomes" for one week workshop on "Outcome based accreditation" at Fr. C.R.C.E. Bandra on 18th Nov. 2014
6. Dr. S. S. Rathod was resource person for session on "CMOS Analog VLSI Design" for ISTE approved one week STTP on "An insight into VLSI and Nanotechnology" at Shah and Anchor College of Engineering on 17th July 2014
7. Dr. S. S. Rathod was resource person for orientation Programme on 'Basics of VLSI Design' (ETRX-SEM VI) and 'VLSI Design' (EXTC-SEM VI) organized at Bharati Vidyapeeth Navi Mumbai and also at Don Bosco College of Engineering, Mumbai.
8. Dr. S. S. Rathod was invited to conduct session on "Ethics in Research and Research Proposal" during two days workshop on research proposal and technical paper writing organized for research scholars by EXTC Department, S.P.I.T. on 10th April 2015.
9. Prof. K. T. Talele was resource person for workshop on Innovative project development organised by Somaiyya College of Engineering, Vidyavihar on 22nd Sept, 2014.
10. Prof. P. V. Kasambe was resource person for Two day workshop on Basics of LabView programming (Under TEQIP II) organised by S.P.C.E, Electrical engineering department on 18-19th Dec 2014.
11. Dr. Deepak Karia was resource person for One day workshop on WLAN and its security organised by National Institute of Industrial Engineering Powai, Sept. 2014.
12. Prof. G. T. Haldankar was resource person for workshop on Microcontroller MSP430 and Motors organised by Don Bosco Institute of Technology, Kurla on 25th Mar 2015
13. Prof. G. T. Haldankar was resource person for workshop on Raspberry PI organised by S.P.I.T, EXTC department on 5th July, 2014.
14. Prof. G. T. Haldankar was the co-ordinator for Two Week workshop on Computer Programming organised by IIT Bombay under Remote centre between 20th May – 21st June, 2014.
15. Prof. G. T. Haldankar was the co-ordinator for Two Week workshop on Computer Networking organised by IIT Bombay under Remote centre between 28th May- 5th July, 2014.
16. Prof. G. T. Haldankar was the co-ordinator for One day workshop on School teacher's training program organised by IIT Bombay under Remote centre on 8th Feb. 2015
17. **Prof. G. T. Haldankar received Best Teacher Award for the year 2014-15 from Cognizent.**
18. Dr. R. G. Sutar has completed Ph.D from VNIT, Nagpur and Prof Manisha Bansode completed Masters degree in 2014-15.
19. Prof. P. V. Kasambe has got admission for Ph.D in Fr. Agnel's College of Engineering, Bandra in 2014-15.
20. Dr. S. S. Rathod is appointed as Member of Department Advisory Board (DAB) at CRCE Bandra
21. Dr. S. S. Rathod is appointed on the Selection Panel of MPSC (Maharashtra Public Service Commission)
22. Dr. S. S. Rathod is reviewer of journal like IEEE TED, Elesevier Microelectronics Reliability, Elesevier Microelectronics Journal and various IEEE conferences like CSCITA, ICNTE, ICAC3, GCWCN, MiCTM 2015 and Int. Conf. on technologies for sustainable development
23. Dr. S. S. Rathod chaired the sessions at various conferences like IEEE IEEE CSCITS, ICNTE and IEEE Int. Conf. on technologies for sustainable development
24. Dr. S. S. Rathod is appointed as member of Syllabus Revision Committee of Mumbai University in BE Mechatronics, BE Electronics, BE Computer and BE Electronics & Telecommunication.

Faculty Roles and Responsibilities:

Faculty	Role
Dr. S. S. Rathod	Head of Department
Prof. K. T. Talele	MCA Coordinator
	TBI Coordinator
	IEDC Coordinator
	IEEE Bombay Section Student Activities Chair
	ESA Coordinator
Prof. D. C. Karia	DSP Lab In-charge
	Exam COE
	Program Coordinator
	Member of Student Welfare Committee
Dr. R. G. Sutar	Project Coordinator
	Department Exam COE
	Power Electronics Lab In-charge
Prof. N. A Bhagat	Gymkhana Chairman
	Head of Student Welfare Committee
	Digital Design Lab In-charge
Prof. P. V Kasambe	ROBOCON Coordinator
	Instrumentation Lab Incharge
Prof. Payal Shah	Department Library In-charge
	In-charge of Electronic Workshop
Prof Manisha Bansode	Timetable In-charge
	Electronic Devices & Circuits Lab In-charge
Prof. G. T. Haldankar	Remote Center Coordinator
	In-charge of Analog Design Lab
Prof. Priya Deshpande	R & D Committee Member
	Microprocessor Lab In-charge

Training Programmes Attended by Faculty in the Academic Year 2014-15:

Sr. No	Name of the staff	Subject of the workshop	Organizer	Date	Duration
1	Dr. S. S. Rathod	TI MCU design days 2014	Texas Instrument	9-10th Dec. 2014	Two days
	Dr. S. S. Rathod	2nd INUP Familiarization Workshop on Nanofabrication Technologies	IIT Bombay	28 Nov to 30 Nov. 2014	Three Days
	Dr. S. S. Rathod	INUP Hands-on training on Nanofabrication Technologies	IIT Bombay	19 Jan to 23 Jan	One Week
2	Dr. Deepak Karia	Computer Networking	IIT Bombay under Remote center	28th May- 5th July, 2014	Two week
3	P.V. Kasambe	Engineering and Science Innovation Summit	National Instrument and sponsored by AI Instruments	21st Aug. 2014	One day
		Challenges in VLSI Design	Fr. C. Rodrigues College of Engineering	13th-14th March 2015	Two days
		Wavelet theory tutorial at the time of international conference at S.P.I.T	Sardar Patel Institute of Technology	15th-17th Jan 2015	Three days
		Embedded System Design Flow using VIVADO	CoreEL Technologies (I) Pvt Ltd.	10-11th Dec. 2014	Two days
		STTP on Micro-Electro-Mechanical-Systems	Shri Ramdeobaba College of Eng. and Management, Nagpur	20-25th Apr. 2015	One Week
4	G T Haldankar	Use of circuit simulation in teaching electronics	IIT Bombay	27th -28th March, 2015	Two days
		Embedded Control System (CE and QIP)	IIT Bombay	12-16 May, 2014	One week
		Engineering and Science Innovation Summit	National Instrument and sponsored by AI Instruments	21st Aug. 2014	One day
5	Payal Shah	Use of circuit simulation in teaching electronics	IIT Bombay	27th -28th March, 2015	Two days
6	Kusuma Kirti	TI MCU design days 2014	Texas Instrument	9-10th Dec. 2014	Two days
7	Manoj Gofane	TI MCU design days 2014	Texas Instrument	9-10th Dec. 2014	Two days
		Embedded System Design using ARM cores	PICT college, Pune	1st to 3rd Dec. 2014	Three days
8	Vijaylaxmi Bhat	Hands on faculty training program on Computer Communication Network	S.P.I.T	7th Feb. 2015	One day
9	Priya Deshpande	Signal and Image processing with wavelet (TEQIP)	Veermata Jijabai Technology Institute, Mumbai	16th -25th December 2013	Two week
		Signal Processing and Applications under QIP	Veermata Jijabai Technology Institute, Mumbai	23rd to 27 Feb. 2015	One week
		Wavelet theory tutorial at the time of international conference at S.P.I.T	Sardar Patel Institute of Technology,	15th-17th Jan 2015	Two days
10	Manisha Bansode	RF circuit design under QIP	Veermata Jijabai Technology Institute, Mumbai	9-10th Feb. 2015	Two days
11	Jagdish Mali	TI MCU design days 2014	Texas Instrument	9-10th Dec. 2014	Two days
		Embedded System Design using ARM cores	PICT college, Pune	1st to 3rd Dec. 2014	Three days
		Computer Communication Network Practical	SPIT, EXTC department	7th Feb. 2014	One day
		Wavelet theory tutorial at the time of international conference at S.P.I.T	Sardar Patel Institute of Technology,	15th-17th Jan 2015	Three days

Scheme of Syllabus Offered By Department And Expected Primary Outcome:

Course code	Course Name	Primary Outcome
SEM-I		
FEC101	Applied Mathematics-I	Ability to apply mathematics to solve engineering problems
FEC102	Applied Physics-I	Ability to demonstrate knowledge of principles of physics
FEC103	Applied Chemistry-I	Ability to demonstrate knowledge of principles of physics
FEC104	Engineering Mechanics	Ability to demonstrate engineering knowledge in mechanics
FEC105	Basic Electrical & Electronics	Ability to demonstrate engineering knowledge of basic principles of electrical and electronics
FEC106	Environmental studies	Ability to understand the environmental issues, impact of engineering solutions on environment and its sustainability
FEL101	Basic Workshop Practice-I	Ability to demonstrate knowledge of engineering skills in using workshop tools
SEM-II		
FEC201	Applied Mathematics-II	Ability to apply mathematics to solve engineering problems
FEC202	Applied Physics-II	Ability to demonstrate knowledge of principles of physics
FEC203	Applied Chemistry-II	Ability to demonstrate knowledge of principles of physics
FEC204	Engineering Drawing	Ability to demonstrate knowledge in engineering drawing
FEC205	Structured Programming Approach	Ability to demonstrate structured programming skills
FEC206	Communication Skills	Ability to demonstrate communication skills
FEL201	Basic Workshop Practice-II	Ability to demonstrate knowledge of engineering skills in using workshop tools
SEM-III		
EXS301	Applied Mathematics-III	Ability to identify, formulate and solve engineering problems with mathematics
EXC302	Electronics Devices	Ability to demonstrate knowledge of physics of semiconductor devices
EXC303	Digital Circuits and Design	Ability to analyse and design digital logic circuits
EXC304	Circuit Theory	Ability to evaluate time and frequency response of electronic circuits and transmission lines
EXC305	Electronic Instruments and Measurements	Ability to demonstrate knowledge of instrument design
EXL301	Electronic Devices Laboratory	Ability to simulate electronic devices and demonstrate understanding of device characteristics
EXL302	Digital Circuits and Design Laboratory	Ability to implement digital logic circuits
EXL303	Circuit Theory and Measurements Laboratory	Ability to demonstrate conduct experiments, record and interpret data with electronic instruments
EXL304	Object Oriented Programming Methodology Laboratory	Ability to write a JAVA code and implement object oriented programming concepts
SEM-IV		
EXS401	Applied Mathematics IV	Ability to identify, formulate and solve engineering problems with mathematics
EXC402	Discrete Electronic Circuits	Ability to analyse and design discrete electronic circuits
EXC403	Microprocessor and Peripherals	Ability to demonstrate understanding of microprocessor systems
EXC404	Principles of Control Systems	Ability to derive models, analyse and apply control theory to design of controllers
EXC405	Fundamentals of Communication Engineering	Ability to demonstrate understanding of principles of communication systems
EXC406	Electrical Machines	Ability to demonstrate understanding of working principles of various types of motors
EXL401	Discrete Electronics Laboratory	Ability to simulate and implement discrete electronic systems
EXL402	Microprocessor and Peripherals Laboratory	Ability to execute assembly language programme and interface peripheral devices
EXL403	Control Systems and Electrical Machines Laboratory	Ability to perform experiments, collect data and interpret results for control systems and electrical machines
EXL404	Communication Engineering Laboratory	Ability to use modern tools in communication engineering
SEM-V		
EXC501	Microcontrollers and Applications	Ability to design microcontroller based electronic systems
EXC502	Design with Linear Integrated Circuits	Ability to design electronic circuits with the use of linear integrated circuits
EXC503	Electromagnetic Engineering	Ability to solve complex problems with theory of electromagnetic engineering
EXC504	Signals and Systems	Ability to analyse signals and systems in time as well as frequency domain

EXC505	Digital Communication	Ability to demonstrate understanding of digital communication systems
EXS506	Business Communication and Ethics	Ability to demonstrate knowledge of business communication with ethical standards
EXL501	Microcontrollers and Applications Laboratory	Ability to program and implement microcontroller based real life applications
EXL502	Design with Linear Integrated Circuits Laboratory	Ability to implement linear integrated circuits in laboratory
EXL503	Digital Communication Laboratory	Ability to demonstrate working of digital communication systems
EXL504	Mini Project	Ability to design and execute project in a team with effective communication to solve multidisciplinary societal/environmental/ health related real life problems by applying principles of project management and finance
	SEM- VI	
EXC601	Basic VLSI Design	Ability to analyse and design MOSFET based digital VLSI circuits
EXC602	Advanced Instrumentation Systems	Ability to demonstrate knowledge of principles of advanced instrumentation system
EXC603	Computer Organization	Ability to demonstrate knowledge of computer organization
EXC604	Power Electronics I	Ability to demonstrate knowledge of power devices and principles of power electronics systems
EXC605	Digital Signal Processing and Processors	Ability to use knowledge of signals and systems for digital signal processing and demonstrate knowledge of architecture of DSP processors
EXC606	Modern Information Technology for Management	Ability to use principles of management
EXL601	VLSI Design Laboratory	Ability to use modern circuit simulation tools in VLSI
EXL602	Advance Instrumentation and Power Electronics Laboratory	Ability to effectively use instrumentation system and implement power electronic circuits
EXL603	Mini Project II	Ability to design and execute project in a team with effective communication to solve multidisciplinary societal/environmental/ health related real life problems by applying principles of project management and finance
EXL605	Digital Signal Processing and Processors Laboratory	Ability to write, simulate and implement a program by applying principles of digital signal processing to solve engineering complex problems with the use of modern tools
	SEM VII	
EXC701	Embedded System Design	Ability to design embedded system
EXC702	IC Technology	Ability to demonstrate knowledge of state of the art VLSI technology
EXC703	Power Electronics-II	Ability to analyse and apply principles of advance power electronics systems
EXC704	Computer Communication Networks	Ability to demonstrate knowledge of computer communication networks
EXC705-I	Digital Image Processing (Elective)	Ability to demonstrate knowledge of image processing techniques and algorithms
EXC705-II	Artificial Intelligence (Elective)	Ability to demonstrate knowledge of neural network and fuzzy logic
EXC705-III	ASIC Verification (Elective)	Ability to apply knowledge of object oriented programming, verilog and digital design for ASIC verification
EXC705-IV	Optical Fiber Communication (Elective)	Ability to demonstrate knowledge of optical fiber communication
EXC706	Project-I	Ability to search the literature, design and execute project in a team with effective communication to solve multidisciplinary societal/environmental/ health related real life problems by applying principles of project management and finance
EXL701	Embedded System Design Laboratory	Ability to program and implement embedded system
EXL702	IC Technology Laboratory	Ability to do process and layout simulations of VLSI devices and circuits
EXL703	Power Electronics-II Laboratory	Ability to analyse and apply principles of advance power electronics systems
EXL704	Computer Communication Networks Laboratory	Ability to solve issues in computer communication networks
EXL705-I	Digtal Image Processing (Elective) Laboratory	Ability to simulate various image processing algorithms
EXL705-II	Artificial Intelligence (Elective) Laboratory	Ability to solve complex engineering problems with the use of modern tools by applying principles of neural network and fuzzy logic
EXL705-III	ASIC Verification (Elective) Laboratory	Ability to write system verilog code and simulate it with modern tool for ASIC verification
EXL705-IV	Optical Fiber Communication (Elective) Laboratory	Ability to demonstrate understanding of implementation of optical fiber communication
	SEM-VIII	
EXC801	Analog CMOS VLSI Design	Ability to analyse and design analog CMOS VLSI circuits
EXC802	Advance Networking Technologies	Ability to demonstrate knowledge of networking technologies
EXC803	MEMS	Ability to demonstrate knowledge of MEMS processes, devices and their applications

EXC804-I	Robotics	Ability to demonstrate knowledge of robotic systems
EXC804-II	Mobile Communication Technology	Ability to demonstrate knowledge of networking technologies
EXC804-III	Digital Control System	Ability to analyse and design digital control system
EXC804-IV	Biomedical Electronics	Ability to analyse and design biomedical instrumentation system
EXC806	Project-II	Ability to search the literature, design and execute project in a team with effective communication to solve multidisciplinary societal/environmental/ health related real life problems by applying principles of project management and finance
EXL801	Analog CMOS VLSI Design Laboratory	Ability to use modern circuit simulation tools for analog CMOS VLSI design
EXL802	Advance Networking Technologies Laboratory	Ability to solve issues in advance networking technologies
EXL803	MEMS Laboratory	Ability to simulate MEMS devices with modern tools
EXL804-I	Robotics Laboratory	Ability to demonstrate implementation of principles of robotics
EXL804-II	Mobile Communication Technology Laboratory	Ability to demonstrate knowledge of issues in implementation of mobile communication technologies
EXL804-III	Digital Control System Laboratory	Ability to implement digital control system in laboratory
EXL804-IV	Biomedical Electronics Laboratory	Ability to implement biomedical instrumentation systems and thereby understand issues related to design of medical instruments

Laboratories:

Sponsored Labs:

1. Texas Instruments Analog Design Lab
2. Texas Instruments MSP Lab
3. ARM University Programme
4. PSoC by Cypress Semiconductor

S.N.	Laboratory	Major Inventory
1	Power Electronics and Basic Electricity & Electronics Lab	Series inverter, Parallel inverter, John's chopper, Morgan's chopper, Step up chopper, Cyclo-converter, PWM inverter, Fully controlled converter, Half controlled converter, Lamp loads, Autotransformers, IGBT stack from Semicron Maxwell's bridge, Wein's bridge
2	Electronic Devices & Circuits Lab	DSOs, CROs, Function Generators, Multimeters, Bread-boards,,Decade resistance/capacitance Box and Inductance Box, EDA tools like PSPICE
3	Digital Circuits Lab	40 MHz DSO, 25 MHz CRO, 2MHz Function Generator, Regulated Variable Power Supply 5V/1A, Digital System Designer, Digital IC Tester, DMM Benchtop, BOSSTEKMake, Wipro Desktop-Intel core IS 530 processor
4	Analog Circuits Lab	DSOs, CROs, Function Generators, Multimeters, Bread-boards, Decade resistance/capacitance Box and Inductance Box, EDA tools like PSPICE
5	Microprocessor Lab	8085 Trainer Kits, 8051 Kits, PIC controller Kits, 8086 Trainer Kits, Microchip DV164136 PIC18F Developers Kit, Single Board Comp/Eval board Phillips LPC 214x Series, Model-ESA Keil MCB2140, Labtool 48XP, Desktops
6	Electronics Workshop Lab	PCB etching machine, PCB drilling machine, Bench type drilling Machine, SMD rework station & Desoldering station, 40 MHz DSO, 25 MHz CRO, 2MHz Function Generator, Regulated Variable Power Supply 5V/1A, DMM Benchtop
7	Electronics Instrumentation and Robotics Lab	Robotic Arm, PLC Trainer, NI ELVIS and NI MyDaq, Temperature controlled trainer, Flow controlled trainer, Speed and liquid level measurement trainers, Single phase induction motor, Trainer kits for Robotics, Lab-View (50 licenses), Computers, Transducer based systems like LVDT, strain gauge, magnetic flow meter, Inductive pick up, Capacitive pickup, Photoelectric pick up, Rotameter etc.
8	Digital Signal processing Lab	DSP Board TMS 320F, DSPStarter Kit (DSK JMS 320C6713 with CCS), DSP Starter kit TMS 320c5416, DSP Starter kit TMS320c5402, DSK-50 DSP Trainer, Xilinx VLSI Design Software, DSP-IN-VLSI-MXSFK-DSP-003 Trainer Kit, DSP Application Software, TDS 2CMA -Communication Module, Intel Web Camera, Hameg 150 MHz D.S.O. , Arbitrary Function Generator, Computers, Open source tools
9	VLSI and Embedded Systems Lab	Arbitrary Function Generator, Mentor Graphics (HEP1 & HEP2) Tool Set, MSP 430 Development Boards, C2000 Development Boards, Android Development Board for Sitara Processors, PSoC Development Boards, ARM Development Boards, PIC Development Board, Aruino Yun Boards, 8051, 8952 series board, Labtool's, AVR ISP, KEIL with hardware SoC development board (CGCorel), Tanner Tool Set, Open Source Tools, Computers
10	Project and R&D Lab	Project specific inventory

Department Library:

Department Library is an essential and valuable component of the Electronics Engineering Department. It supports outstanding research carried out in the department. Library provides easy access of books and references to the students and faculties to enable learning and advancement of knowledge. These references are proved as immediate available valuable resource during practical and project sessions.

The mission of the Department Library is to facilitate creation of new knowledge through acquisition and to provide value added services. The Departmental library has an open access and is managed by a teacher in charge with the help of student's team. Department library committee manages issue/collection and all other related tasks of departmental library. Department library has more than 1000 books. Every year books worth Rs. 50000/-- are added to the department library.

Center for Research in Neuromorphic Engineering (CRINE):

Sardar Patel Institute of Technology started CRINE with the mission of driving innovation through learning from neurons. The objective of this center is to promote research in neuromorphic engineering, to promote collaboration between colleges and disciplines and to enhance industry institute interaction. The institute has also signed MOU with Eduvance and the center is supported by Cypress Semiconductors University Alliance Program. First time faculty and students from different departments of VJTI (Matunga), SPIT (Andheri) and Fr.CRCE (Bandra) started working together in multidisciplinary area.

IEDC Activities in 2014 - 15:

1. Seminar on Project Design by Mr Kunal Gupta on 16-02-2015 from 1.00 pm to 2.30pm
2. Workshop on Company Registration by Mr Sanjay Dholakia on 10-02-2015 from 5pm to 8pm
3. Workshop on Business Model by Dr Radha Iyer on 24-02-2015 from 5pm to 8pm
4. Talk on Sources of Funding by Mr Srirang Tambe on 24-03-2015 from 5pm to 7pm

Faculty Development Program:

AICTE Funded Faculty Development program on 'Electronic System Design: From Devices to Applications' is organized by Electronics Engineering department from 4th May 2015 to 15th May 2015. Eighty teachers from 33 institutions attended this workshop which has involvement of eminent resource persons from academia as well as industry.

Guest lecturers arranged in the department in 2014-15:

Topic	Speaker	Date
Need of Electronics in Industry for Electronics Engineer	Mr. Sanjay Chaudhari, Director Electronics Study Center, Jalgaon	19th August 2014
DSP Application and Embedded Product Design	Mr. Subodh Khanolkar Design Enginner AGV Systems Pvt. Ltd, Ambernath	5th Sept. 2014
Programmable Logic Controller based Application	Mr. Ajit Kumar K. T. Training Superintendent, Anglo Eastern Maritime Academy	11th Oct. 2014
Control System	Prof. D. S. Sawant Asst. Professor, MPSTME	10th Jan. 2015
DIPLAB demonstration	Mr. Jaideep Mehendale and Mr. Mandar Joshi Wavelet Technologies pvt. Ltd.	30th Jan. 2015
Pneumatic and Hydraulic System	Prof. B.S. Chavan Asst. Prof. DBIT, Mumbai	16th Feb. 2015
Applications of VLSI	Dr. Jonathan Joshi CEO Eduvance	25th March 2015

EYANTRA:

E-yantra is a national level robotics competition sponsored by MHRD through the National Mission on Education through ICT (NMEICT). This competition started in 2012 and has been held annually. This year E-yantra introduced a new competition "E-yantra Robotic Plus PILOT" which runs parallel to the main competition. The aim of this competition was to teach concepts like image processing and microcontroller programming to the participants. All participants were given the same problem statement, however, with slightly different parameters. The problem statement this year was an abstracted version of a hospital wherein patients would request a particular item (like medicine, water, or thermometer) which would be indicated by some colour. The entire arena would be captured by a camera and an algorithm had to be developed to guide the robot autonomously to satisfy the patient requirements by picking up items from storage areas and delivering them. Various teams from the Electronics Department participated in this competition, out of which two teams reached the semi-final stage.

ROBOCON:

ABU Robocon is a robotics competition organized each year by Asia Broadcasting Union to give budding engineers a platform to show their engineering skills in the field of robotics. It was started in 2002 by Japan and today it is the biggest international robotics competition in Asia-pacific with over 16 countries participating. Robocon 2014 was hosted by India and the theme was 'Parenthood' wherein a challenge was posed to make a human-like robot. Sardar Patel Institute of Technology has been participating in this competition for the past 4 years and has always raised the bar of its performance. For the 2014 theme the prototypes for auto-bot and manual bot were made by January-mid and later on were modified to well-finished robots. In league matches we were pitched against the defending champions and a win against them was just what we wanted. This boosted our morale to new heights and we even won the consecutive match making our place in top four after the league matches. In super-league we gave a tough win to the opponent and stood tenth nationally. This year we had been posed by a challenge to make a robot which could play the game badminton. It was the most dynamic theme ever in the history of Robocon. We were successful in making our robots by the end of January but due to funding issues the field was delayed. At last with a one-week practice we gave our opponents a tough competition and were ranked 39th nationally. Team Robocon of SPIT is now geared up to reach greater heights next year with more advancement in mechanics and electronics and with a whole new zeal of robotics.

Texas Instruments Analog Maker Competition:

Texas Instruments (Bangalore) sponsored College Level Analog Maker Competition was organised by Electronics Engineering department in Aug 2014 and also in March 2015. More than 300 students participated in these events. In these event students in a team compete each other to solve the problem statement given by Texas Instruments which involves mathematical modelling, circuit simulation as well as experimental validation. Dr. S. S. Rathod is the co-ordinator of the contest and other department faculty members help in organisation of the contest. Each winner team received Cronos watches and certificates from Texas Instruments (Bangalore).

Industry visit of students at Dahanu Thermal Power Plant:

Visit to Reliance Horticulture Plant:

International Conference on Communication, Information and Computing Technology (ICCICT) 2015:

International Conference on Communication, Information and Computing Technology (ICCICT) 2015 was organized during 16-17 Jan, 2015 by Sardar Patel Institute of Technology Mumbai. It was technically co-sponsored by IEEE Bombay Section and IETE India. We are indeed delighted that the conference provided a premier forum for presentation of research results and experience reporting on the cutting edge research in the general areas of communication, information and computing technology. All faculty members of electronics engineering department were involved in the organization of the conference. In addition to the contributed papers, parallel sessions of pre conference tutorials were arranged on the first day of the conference, before the formal inauguration, to provide interested participants a feel of the current state-of-the-art of the IEEE designated areas.

ICCICT 2015 received an overwhelming response from the Research Community. The ICCICT submissions covered a wide range of topics on antennas, communication engineering, networking, sensor networks, VLSI, embedded systems, speech processing, image processing, cloud computing, software engineering and database management. ICCICT 2015 attracted 300 contributions out of which, after rigorous peer review process, only a few could be accommodated due to shortage of time. These papers were brilliantly handled through a peer reviewing system by members of the technical programme committee, comprised of members from academia, government laboratories, and industries.

Each paper received at least three peer technical reviews. We engaged over 100 reviewers from almost all premium institutions and finally we selected a total of 99 papers for oral presentation. This made the acceptance rate of ICCICT 2015 merely 33%, resulting in a very high quality of the contributed papers as well. We have received quite a good number of quality research papers from the researchers working in the industry. Our goal of having a good gel among the academic and industry research is also fulfilled. The selected 99 papers have been categorized according to their field of contribution and a total of 14 sessions were planned for the oral presentation. We made sure that each presentation gets sufficient time to present their work. The quality of accepted papers was quite good. The proceedings of the conference are being provided in a navigable CD form and are also available on IEEE-Xplore, which has a worldwide reach. We are confident that a large number of researchers would benefit from the Proceedings of the ICCICT 2015.

Teacher Performance Appraisal and Development System (TPADS):

Today teachers have to perform a variety of tasks pertaining to diverse roles. In addition to instruction, teachers need to innovate and conduct research for their self-renewal, keep abreast with changes in technology, develop expertise for the effective implementation of curricula. They are also expected to provide services to the industry and community for understanding and contributing to the solution of real life problems in industry. SWAT analysis, academic audit and appraisal system are the mechanisms used in the department to give feedback/suggestions to the teachers on their contribution to the development of the institution.

I.   Appraisal System:

An effective performance appraisal system for teachers is vital for optimizing the contribution of individual teachers to institutional performance. Institute has a well defined appraisal system and it is effectively implemented in the department. Every teacher submits self-appraisal forms via head of the department to the principal. Self- appraisal forms are as per the cadre of the teacher. In presence of head of department principal conducts one to one meeting with all the teachers gives feedback/suggestions/comments on the performance.

Also institute has a policy of sending one faculty every semester to Indian Institute of Technology Bombay for self up gradation. Under this policy in every semester one teacher is sponsored to undertake at least one M.Tech level credit course at IIT Bombay.

- Prof. Narendra Bhagat completed credit course on 'VLSI Digital Design' and 'CMOS Analog VLSI Design' from July-Dec. 2014.
- Prof. Manisha Bansode completed credit course on 'Semiconductor Device Physics' from Jan. to May 2015.

II.   Development System:

Another role relates to the shouldering of administrative responsibilities to co-operation with other teachers, heads-of-departments and the Head of Institute. To inculcate the leadership qualities, positive thinking skills and motivation to achieve goals, institute has instituted faculty development programme (FDP) which is scheduled on every Friday between 4.00 pm to 6.00 pm for all the teachers of the institute. The various activities conducted under this programme are as follows:

- Lecture by 'TIME' on topic 'Classroom Dynamics' on 23rd Jan 2015.
- Lecture by Dr Nirmala Rao on topic 'Work Life Balance' on 30th Jan 2015
- Lecture by Dr. Bhuma Vashi on 'Dental Health' on 6th Feb 2015
- Lecture by Dr. Manoj Bhatawadekar on 'Teenage Problems & Mentoring' on 13th Feb 2015
- Lecture by Mr. K. P. Kumar on 'How to keep our mind positive' on 13th March 2015

III.   Academic Audit:

Academic audit of teaching as well as non-teaching staff is done at the end of every academic year. For non-teaching staff, the department faculty conducts the academic audit. While for the academic audit of teaching faculty an academic expert from other eminent institution is invited.

Dr. Shaila Subbaraman, Professor Walchand College of Engineering, Sangali was invited in May 2014 as well as May 2015 for the academic audit. During the academic audit articulation of the course outcomes, their mapping and assessment is evaluated by the auditor for all the courses. One-to-one feedback by auditor to teachers helps in the revision of the course outcomes and their attainment.

Final Year Placement/Internship/Scholarship Statistics in 2014-15

Key	Number
Dream	13
Core	4
Accepted (Normal)	45
Total Placed	63
Total Students	76
Placement %	82.89

Student Name	Scholarship	Amount
Archita Goyal	Narotan Shiksaria	5000/--
Surabhi Kadam	J.R.D. Tata Trust Schlarship	83400/--

Profile of Students Passed in May 2014		
M.S.	25%	Georgia Tech, Missouri, NYU, Illionios, North Carolina, North Eastern, Univ. of Florida, Univ. of Colorado, Univ. of Texas
Jobs	75%	98% Placed (22% Dream Placements)
Life Long Learning	72.56%	Students appeared for various competitive exams like GATE, GRE, TOFEL, CAT, CET, AFCAT, CMAT and NCFM
Professional Membership	31.42%	Students who were members of professional bodies like IEEE and IETE

Student Name	Intern at Company
Prasad Gaikwad	Reliance Infrastructure Ltd.
Niharika Sarode	Unify Enterprise Comm. Pvt. Ltd.
Raj Shah	Tantrasoft Solutions (I) Pvt. Ltd.
Sheryl Tuscano	Prosound Products
Ashish Mohanan	Mahindra EPC Services Pvt. Ltd.
Dakshata Pawar	JSW Steel Coated Products Ltd.
Pradnya Bhangle	L&T Heavy Engineering
Ruchir Surendra Mohite	Reliance Energy Plant
Sanyogeeta Dhulgundhe	Jindal Iron and Steel Vasind
Dakshata Pawar	Jindal Iron and Steel Vasind
Nidhi Sharma	L&T Pvt. Ltd.
Amogh Morya	Air India
Kanchi Podar	Air India
Shashank Rane	Air India
Kritika Sabarwal	Air India
Madhura Valvaikar	Air India
Prathamesh Bhatkar	Air India
Tanmay Mishra	Air India
Amit Dhamne	BARC Trombay

Company	Key	Number of Offers
Siemens	Core	01
L&T Core	Core	02
Mitsubishi	Core	02
Cognizant	Normal	28
Infosys	Normal	32
L&T InfoTech	Normal	30
Credit Suisse	Dream	01
Infibeam	Dream	01
MuSigma	Dream	03
Deloitte	Dream	01
Diebold	Dream	02
KPMG	Dream	01
Aspiring Minds	Dream	01
Kotak	Dream	01
Iksula	Normal	01
TIME	Dream	02

List of Topper in May 2014:

Ranks	Name of Students	Class	Avg CGPA/ Percentage
1	Shri. Shah karan Shailesh	Second Year	9.51
2	Shri. Gala Jugal Jayesh	Second Year	9.48
3	Kum. Dhanawade pooja Arjun	Second Year	9.05
1	Kum. Kadam Surabhi Pratap	Third Year	85.35 %
2	Kum. Bhattacharya Ipsita Gautam	Third Year	81.88 %
3	Shri. Tiwari Biteshnath Raviprakash	Third Year	81.24 %
1	Shri. Choumal Abhudaya Rajesh	Final Year	76.32 %
2	Shri. Rege Kunal Shirish	Final Year	75.68 %
2	Shri. Vakadkar Amogh Anandkumar	Final Year	75.68 %
3	Shri Falerio Brendon Xavier	Final Year	73.87 %

Student's Representation in Various College Level Committees:

Representation in the Students' council

Ms. Samiksha Gupta (General Secretary)   **Mr. Kalpit Narvekar (Sports Secretary)**

Committee	Student Name
Students Council	Ms. Samiksha Gupta (General Secretary)
	Mr. Kalpit Narvekar (Sports Secretary)
IETE coordinators	Mr. Aayush Patial
	Mr. Dhvanil Mandalia
IEEE coordinators	Ms. Amisha Khimani
	Ms. Gauri Joijode
ESA coordinators	Mr. Harshit Shukla
	Ms. Aishwarya Bannore
	Mr. Chetan Jogi
E-Club (Entrepreneurs Club)	Mr. Aayush Patial
Spark Magazine	Mr. Aayush Patial
	Mr. Dhvanil Mandalia

Student's Achievements in 2014-15:

Ms. Surabhi Kadam receiving Citius Tech Excellence Award (Rs. 25,000/--)

Best Project Award by Tata Consultancy Services

1. Best Project Award by given by Tata Consultancy Services to project titled 'Portable EEG Machine for Primary Health Centres'
2. Ms. Surabhi Kadam received Citius Tech Excellence Award (Rs. 25,000/--)
3. Aniket Pendse, Amogh Morye, Kartik Chakole and Sahil Kabdule from T.E ETRX won First prize in Line Follower at spectra 2014 organized by SPCE.
4. Shreyas Palande fron F.E ETRX selected to represent the University at All India Inter University Yoga, Men and Woman tournament 2014-15 at kurukshetra University in March 2015.
5. Jugal Gala, Omkar Purandare from T.E ETRX and Dwanil Mandalia from S.E ETRX won the 2nd prize in the event Jagruti for dramatics organized as part of VISTA 2014 the annual business summit of IIM Bangalore.
6. Girish Pikle, Honey Kanpara, Swapnil Buva, Saket Aggrawal from B.E ETRX, Prasad Gite, Ameya Thombre from S.E ETRX and Pinakin Vartak from F. E ETRX were Runners-up at two Inter-collegiate cricket tournaments Enthusia (VJTI) and SPIRIT (SPIT).
7. Amogh Morye, Tanmaya Mishra, Viraj Malia (Home Automation Project)- Stood 2nd in ELECTROWORKS, an Inter-college level Project Competition

Mr. Saurabh Ratnaparkhi Successfully Scale Mount Kanglacha (Stok Kangri). It is the highest mountain (elevation 6,153 m (20,182 feet)) in the Stok Range of the Himalayas in the Ladakh region.

8. Samiksha Gupta, Gaurang Alat (RFID Security System Project)- Stood 3rd in ELECTROWORKS, an Inter-college level Project Competition
9. Anirudh Bhat, Ruchir Mohite, Advait Churi (Data Transfer Using Light Project)- Won the Consolation prize in ELECTROWORKS, an Inter-college level Project Competition
10. Jay Trivedi- Stood 3rd from Zone 2 in a University Level Chess Competition
11. Mohit Karandikar is a Singer and Won various competitions including 2nd place in Malhar, 2014.
12. Amol Marathe, Raj Lokhande- Stood 2nd in an Inter-college Level Carrom competition held in SPIRIT
13. Ashish Mohanan, Kalpit Narvekar, Raj Shah, Anurag Tulsiram- As a part of the college football team won the football cup in SPIRIT.
14. Vaishnav Dandge, Harshit Shukla and Vikram Asgaonkar are part of College Volleyball Team that won a medal/trophy in various competitions
15. Vaishnav Dandge is part of College Football Team that won a medal/trophy in various competitions
16. Ameya Thombre and Prasad Gite are part of College Cricket Team that won a medal/trophy in various competitions
17. Hrishikesh Tawade and Jay Trivedi participated in Robocon, a National Level Robotics Competition
18. Five teams from the Electronics Department have taken part in E-YANTRA, a National Level Robotics Competition
       Team 1: Tanmaya Mishra, Amogh Morye, Omkar Purandare, Gaurang Alat
       Team 2: Anirudh Bhat, Harshal Patil, Advait Churi, Ruchir Mohite
       Team 3: Aniket Pendse, Prathamesh Bhatkar, Deep Bhojani, Pooja Dhanwade
       Team 4: Anurag Tulsiram, Sahil Kabdule, Abhijeet Gokhale, Harshit Gandhi
       Team 5: Hrishikesh Tawade, Aditi Tripathi, Jay Trivedi
19. Harshal Patil, Amog Morye, Prathamesh Bhatkar,Tanmaya Mishra- Stood 1st in the Line Follower Competition held in SPECTRA, the technical festival of S.P.C.E
20. Omkar Purandare, Jugal Gala- As a part of the college drama team, stood 1st in a National Level Street Play Competition held in JAGRUTI, the cultural festival of IIM Bangalore
21. Vaibhav Pulyani, Harshal Patil- Stood 1st in an Inter-college Data Analysis competition- Moneyball, held in Mood Indigo, the cultural festival of IIT Bombay
22. Namrata Sukhani- Stood 2nd in an Intra-college debate competition, S.M. Parekh
23. Gaurang Alat- Won the Best Speaker award in an Intra-college debate competition, S.M. Parekh
24. Amit Dhamne, Hrishikesh Tawade, Sagar Shelke, Jugal Gala, Prasad Gaikwad- Stood 1st in the Analog Maker competition conducted by Texas Instruments (Bangalore).
25. Active participation of Electronics Department students in a National Level Project Competition Innovation Challenge conducted by Texas Instruments
26. Active participation of Electronics Department students in various student bodies in the college such as- IEEE, IETE, ESA, ROTARACT, ROBOCON, SPARK, ELECTROWORKS, SPACE organization committee, MATRIX organization committee

Skill Development Programme (SDP):

Department has skill development programme for electronics engineering students. Every student is asked to submit a plan about 'what they are going to do' after engineering or what is their area of interest or their goal in life. Depending on this various groups among students are formed and they have been allocated mentors/experts to achieve their goal. The mentors for MBA group are from S. P. Jain institute of management and for Civil Services groups is Collector of Kochi who happens to be our alumni. The motto of the programme is 'Do it yourself'.

Primary Outcome Emphasized:

Student will be able to acquire the value added skills and make themselves ready for the future endeavors

SDP Groups:
- MBA
- Civil Services
- Programming
- Embedded Systems
- Rasberry Pi
- Circuit Simulation
- Telecommunication
- VHDL
- Labview
- Signal Processing
- Visual TCAD
- Entrepreneurship

The Benefits of Skill Development Programme:
- Enhanced focus for future endeavors
- Developments of soft skills, communication skills, presentation skills
- Skill set development in technology
- Motivation towards invention or innovation
- Ready for placement, research etc.
- Increase interaction with teachers
- Development of laboratories and their increased utilization
- Improvement in quality of Projects in Final Year

Date	Topic	Resource Group
1/7/2014	Introduction to SDP and Embedded Systems	Dr. S. S. Rathod
	Leadership in 21st century	MBA (Vaibhav and Yash)
	Programming Microcontrollers	Embedded Systems
	Programming with mBed Platform	
	Introduction to Rasberry PI and project using Rasberry PI	
	Hands on session	Embedded Systems
2/7/2014	Introduction to TCAD	Dr. S. S. Rathod
	Emotional Intelligence and it's relevance in corporate life	Shashank and Harshada (MBA)
	TCAD programming	TCAD
	Ngspice, Tina, Oscad, Proteus	Circuit Simulation
3/7/2014	Labview Programming	Labview
	Matlab and Scilab programming	Signal Processing
	Antenna Design and IE3D	Communication
	Networking	
4/7/2014	Object Oriented Programming	Programming group
	Business and professional ethics	Sheryl and Ashish (MBA)
	Preparing for UPSC/MPSC	UPSC
7/7/2014	Linux Programming	ME Computer Student
8/7/2014	Hands on session on above technologies and feedback	Prof. G. T. Haldankar Prof. Priya Deshpande

Activities carried out by SDP groups:

- All the groups regularly conducted experiments/ case studies in their domain.
- Civil services groups finalized the subjects to be undertaken for UPSC/MPSC examinations after discussions with mentors
- MBA group started project with faculty of S. P. Jain Institute of Management
- Programming groups arranged extra classes by experts from computer department. Dr. Prachi Gharpure, Dr. D. R. Kalbande and students from computer engineering department took extra classes in the evening on object oriented programming in the entire semester.
- **'SWOT Analysis'** is carried out to identify barriers that limit outcomes of SDP, to decide on direction that will be most effective for SDP, to reveal possibilities and limitations for change in SDP, to decide plans for SDP and as a means for brainstorming and communicating
- One week knowledge exchange workshop is organized for all the student to share the knowledge they gained in the entire semester through SDP activities. The following activates are conducted in knowledge exchange workshop.

Student Performance Enhancement Scheme (SPES):

New scheme referred as 'Student Performance Enhancement Scheme' (SPES) was implemented from academic year 2013-14 in Electronics Engineering Department. In this scheme, every student received hardware tools kit worth Rs. 3000/-- to enhance their hardware debugging capabilities. One kit comprises soldering iron, multi-meter, Wire stripper, bread board, bundle of connecting wire, logic probe, soldering wire and flux. Students carry same kit during day to day practical, mini projects, final year projects and practical examinations.

Objective:
- ✓ To motivate students to perform hardware experiments independently
- ✓ To enhance capabilities of students in implementing, testing and debugging hardware.
- ✓ To save human hours during laboratory hours
- ✓ To create belongingness of laboratory among students

Benefits:

- Effective implementation of theory of **'one student one experiment'**
- Every student is **motivated** to perform experiment independently
- Students **need not issue every time** they come to lab and hence it will **save their time**.
- It **saves time of lab assistants**.
- Students can **mount the components in their free time** and can test circuits (**even at home**)
- If **experiment remains incomplete in allotted time then they can continue in the next session** and need not mount the circuit again. Hence it is possible to perform experiments which may take more than one turn. This saves their time. They can also troubleshoot in free time or at home. Teachers can also give big circuits for testing.
- This scheme is **helpful during final year projects** and **mini projects** like electronic workshop.
- **Students use tools carefully and do not damage equipments**. It creates the sense of belongingness and discipline among the students.

Sponsored Projects in 2014-15:

S.N.	Project Title	Mentor	Funding Agency
1	TeCHart	Dr. S.S.Rathod	SPIT-IEDC
2	Smart LPG Trolley	Prof. G.T. Haldankar	SPIT-IEDC
3	Electronic Pet Watchman for Safety of Senior Citizen People	Dr. D.C.Karia	SPIT-IEDC
4	Road Crossing System for the visual handicapped	Prof. K. T. Talele	SPIT-IEDC
5	W.A.T.E.R. (Water Analysis Testing Estimation Remotely)	Dr. S.S.Rathod	Texas Instruments
6	Remote Monitoring of Bacteria in Water	Dr. S.S.Rathod	Texas Instruments
7	Gesture Controlled Toy-Car	Dr. S.S.Rathod	Texas Instruments
8	Smart Irrigation System with Data Acquisition and Real Time Monitoring	Dr. S.S.Rathod	Texas Instruments
9	Android Based Smart Glove for Deaf and Dumb	Dr. S.S.Rathod	Texas Instruments
10	Crack Detection using Ultrasound Imaging	Dr. S.S.Rathod	Texas Instruments
11	Automated Measuring Camera	Dr. S.S.Rathod	Texas Instruments
12	In-house Monitoring of Quality and Quantity of LPG	Dr. S.S.Rathod	Texas Instruments
13	Portable Electroencephelogram (EEG) for Primary Health Centers	Dr. Rajendra Sutar	Texas Instruments
14	Multi-parameter Diagnostic Support System for Connected Health at Primary Health Centers in rural Area	Dr. Rajendra Sutar	Mumbai University
15	Reduction of Fuel Consumption in Engines Using HHO Based System	Prof. G. T. Haldankar	Mumbai University
16	Suspicious Activity Detection and Tracking	Prof. K. T. Talele	Mumbai University

Experts in Each Research

1. VLSI and Embedded Systems
- Dr. S. S. Rathod
- Prof. Narendra Bhagat
- Prof. P. V. Kasambe
- Prof. Manisha Bansode

2. Instrumentation and Control
- Dr. S. S. Rathod
- Dr. R. G. Sutar
- Prof. P. V. Kasambe
- Prof. G. T. Haldankar
- Prof. Payal Shah

3. DSP and Image Processing
- Prof. K. T. Talele
- Prof. Priya Deshpande

4. Communication and Networking
- Dr. D. C. Karia
- Prof. Manisha Bansode

Research Topics Offered by the Department:

1. Electronic Circuit Analysis and Design
2. Semiconductor Device Modeling
3. Novel Semiconductor Devices
4. Low Power Circuit Design
4. RADHARD Circuit Design
5. Carbon Nanotube FET and Circuit Design
6. CMOS analog and Mixed Signal Design
7. MEMS
8. ASIC Verification
9. FPGA/CPLD based design
10. Design of Embedded System
11. Labview Based Virtual Instrumentation
12. Biomedical Instrumentation
13. Antenna Design
14. Design of communication circuits
15. Digital Signal Processing
16. Image Processing

Final Year Projects in 2014-15:

S.N.	Project Title	Project Guide
1	Portable EEG Machine for Primary Health Centres	Dr. Rajendra G. Sutar
2	Detection of Brain diseases Using Artificial Intelligence	
3	Ultrasonic Surgical Cleaner	
4	Remote Controlled Metal Detector using RF signal	Prof. Payal Shah
5	Navigation Aid for Visually Impaired	
6	Electronic Fire Extinguisher	
7	Automated patient monitoring system using gesture recognition	Prof. K. T. Talele
8	Facial Expression Recognition using FACS	
9	Mobile Security System	
10	Modern Face Recognition System	
11	Video Player using TFT screen	Prof. Narendra Bhagat
12	Harvesting energy from railway track vibrations	
13	Electricity Generation from Geothermal Energy	
14	Un-manned Ground Vehicle	
15	BLDC Motor Control using Space Vector Modulation	Prof. G. T. Haldankar
16	HHO Generator	
17	Voice Controlled Robot	
18	Smart Glove for Deaf and Dumb	Dr. S. S. Rathod
19	Eyeball movement based wheelchair monitoring system	
20	Bacteria Colony estimation using image processing	
21	ECG acquisition & transmission via smart phone	
22	Intelligent Car Parking	Prof. Manisha Bansode
23	Vehicular Data Acquisition System	
24	Voice Recognition and Navigation using GPS and Ultrasonic for obstacle avoidance	
25	Under Water Communication System	Dr. D. C. Karia
26	Vehicle tracking system using GPS with accident notification.	
27	Microstrip Patch Antenna for ISM Band	
28	GSM and GPS based health monitoring system	

Parents Faculty Meeting

Degree Certificate Distribution Ceremony

Students Receiving Awards and Prizes

Cultural Events in the Department

Contact

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Electronics
Insight
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