Volume 14

TARANG

THE OMNIPRESENT CONTACT

JUNE 2019

Prompt Energy Transmorgrification : How hummingbirds inspire our present cooling systems

5G-Gateway to the new future

Look out for EMISAT- India's eyes

OUTERNET

Maharshi Karve Stree Shikshan Samstha's
Cummins College of Engineering for Women, Pune
An Autonomous Institute affiliated to Savitribai Phule Pune University
KARVENAGAR, PUNE- 411052, India.
(University affiliation No. PU/PN/ENGG/087/1991, INDIA)
Approved by All India Council for Technical Education (AICTE)
National Assessment & Accreditation Council (NAAC) Grade-A

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H.O.D's Message

It gives me immense pleasure to write the message for departmental magazine 'TARANG 2019 (Vol 13) -The Omnipresent Contact'. TARANG magazine presents a record of various activities of the department throughout the year. As the title suggests, this magazine shall prove to be technically interesting and informative magazine. Even a cursory glance at the contents of the magazine is enough to show that our department has been progressing by leaps and bounds in not only academics but also in extra-curricular activities.

Our students made us proud by excelling in academics, sports and cultural activities. I congratulate the faculty members also for receiving research grants and publishing papers in reputed journals and conferences. Various guest lectures and industrial visits were also organized to enhance the learning experience. The department also successfully implemented autonomy for the S.Y. and T.Y. courses.

I congratulate the editorial team for their tireless efforts in bringing out this year's issue. I hope the readers will enjoy the articles and content of this edition.

With blessings…

Dr. Prachi Mukherji

HoD, E&TC Dept

Editor's Note

Seek and ye shall find.

The sky is no more the limit. We are now exploring the world beyond it. Today, we have a rover on Mars. Soon, humans will follow. Tarang 2019 edition is all about the 'Omnipresent Contact' and the technology that helps establish it. With ISRO carrying out one after the other successful missions, this is our tribute to the Indian Space Research Team.

This year saw an exceptional rise in the activities by the students as well as the faculty. We laud these records and hope to attain new ones in coming years.

We sincerely hope you enjoy reading this issue as much as we enjoyed curating it.

Happy Reading!!!

Magazine Coordinator: Prof Manasi Pathade

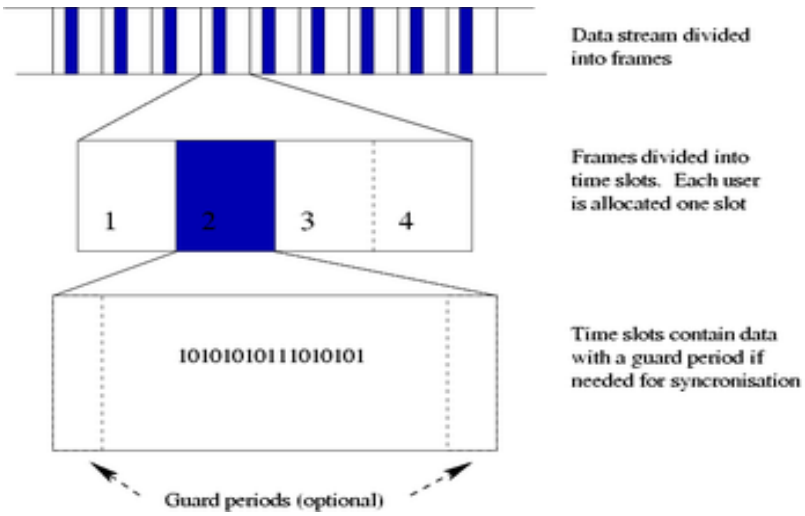
Tanvi Pardhi, Kanchan Waghchawre, Mansi Khandekar, M. Esha Priya, Apurva Raj, Shruti Tol,

Simran Mujawar, Dipannita Banerjee, Parvathy Asokan

EMISAT-INDIA'S EYES

By Apurva Raj (SY)

Emisat is an ISRO-DRDO joint project which is an Electronic Intelligence satellite weighing a total of 429kgs and constituted the main payload of the PSLV rocket. There was a total of 29 satellites which were placed in 3 different orbits. It is modelled after a famous Israeli spy satellite called SARAL. Both these satellites have the **SSB-2 bus protocol** which is the core component for their sharp electronic surveillance capabilities across the length and width of a large country like India.
EMISAT also has a special altimeter (a radar altitude measuring device) that works in the Ka-band microwave region of the spectrum. The main capability of EMISAT is in signal intelligence, intercepting signals broadcasted by communication systems, radars, and other electronic systems. The Ka-band frequency that EMISAT is sensitive to allows EMISAT(India's newest spy) to scan through ice, rain, coastal zones, land masses, forests and wave heights with ease.



ADVANTAGES OF THE SYSTEM:

1. **<u>Automatic Identification System from ISRO[AIS]:</u>** The Automatic Identification System (AIS) will be used for maritime satellite applications such as for capturing messages transmitted from the ships. Working of the systems have not been revealed by ISRO for certain security purposes but we can understand the general working of these systems. The Time Division Multiple Access, allows several users to share the same <u>frequency channel</u> by dividing the signal into different time slots. The users transmit in rapid succession, one after the other, each using its own time slot. The two major advantages of TDMA transmission are if a channel is transmitting heavier loads, then it can be assigned a bigger time slot than the channel which is transmitting lighter loads. Another advantage of TDMA is that the power consumption will be very low.

The fundamental challenge for AIS satellite operators is the ability to receive very large numbers of AIS messages simultaneously from a satellite's large reception footprint. There is an inherent issue within the AIS standard. The TDMA radio access scheme defined in the AIS standard creates 4,500 available time-slots in each minute but this can be easily overwhelmed by the large satellite reception footprints and the increasing numbers of AIS transceivers, resulting in message collisions, which the satellite receiver cannot process.

2. Automatic Packet Repeating System from AMSAT[APRS]: The Automatic Packet Repeating System (APRS) will assist amateur radio operators in tracking position data. APRS is a digital communications protocol for exchanging information among a large number of stations covering a large (local) area. As a multi-user data network, it is quite different from conventional packet radio (radio signals carrying packets of data).

Packet repeaters, called digipeaters (receive a packet, process it, and retransmit on the same frequency),form the backbone of the APRS system. All stations operate on the same radio channel, and packets move through the network from digipeater to digipeater. All stations within radio range of each digipeater receive the packet. The packet will only be repeated through a certain number of digipeaters.

Digipeaters keep track of the packets they forward for a period of time, thus preventing duplicate packets from being retransmitted.

The system has good reliability because the packets are transmitted (broadcast) to everyone and multiplied many times over by each digipeater. This means that all digipeaters and stations in range get a copy, and then proceed to broadcast it to all other digipeaters and stations within their range. The packets are multiplied more than they are lost. Therefore, packets can sometimes be heard some distance from the originating station.

SIGNIFICANCES OF THE LAUNCH:

- **Sniffing Enemy Radars:** This satellite will monitor and give locations for enemy radar sites deep in their territory. Till now, India was using airplanes as early warning platforms, but with this satellite, Indian will get a space-based platform to sniff out enemy radars.
- **Situational Awareness:** Space-based electronic intelligence or EMISAT will further add teeth to situational awareness of the Armed Forces as it will provide location and information of hostile radars placed at the borders.
- **Helpful in Surgical Warfare:** Being capable of detecting electronic signals on the ground, will help India in surgical warfare specially to check Pakistan-sponsored terrorism.
- **Successful Operations:** For about eight years in the making, EMISAT can be a valuable tool for India to carry out stealth air operations in enemy territory since the satellite can detect enemy radars.

CONCLUSION:

EMISAT's launch comes six days after India test-fired an anti-satellite missile in the Mission Shakti operation. With this, India has achieved a double bullseye in space, first with Mission Shakti a direct hit to kill of a satellite at 300-kilometer altitude and now, with the help of ISRO. After the launch, the ISRO Telemetry Tracking and Command Network (Bengaluru) have assumed control of the satellite. In the coming days, EMISAT will be brought to its final operational configuration.

OUTERNET

By Harshada Rokade (SY)

The internet in today's world is of paramount importance. Internet users now have access to resources and information that were out of reach before, with the ability to access almost unlimited knowledge online.

Access to the Internet has been deemed so important, the UN Human Rights Council has declared Internet access a basic human right. An organization called the Media Development Investment Fund has worked out a solution that can freely broadcast information around the globe in a modern version of shortwave radio.

Since the information is all one-way, users in censored countries can bypass censorship while retaining their privacy. Users who are barred from the Internet due to high monthly costs or lack of infrastructure can receive the broadcasts for free on various devices.

The new system is operating at a high speed, which is a little over 20kbps and 200 MB of content per day. At the current download speed of 20kbps, the company is broadcasting both data and a 24/7 audio stream.

What outernet consists of ?

Outernet uses a network of miniature satellites floating in space to broadcast data. Digital content is being transmitted from Earth into space, with **tiny CubeSats satellites** (miniaturized satellite) distributing the data in a continuous loop to **mobile devices, antennas** and **satellite dishes**.

How it works?

1. Outernet broadcasts a file around the world over a satellite signal in a process that is similar to what happens with satellite radio, but the content can be in any format.
2. Lantern uses its internal antenna to receive the signal. The tuner selects the frequency, turning the analog waves into digital bits, and passes the bits to the compute module. At this stage, these bits are turned into digital files, which are all stored in the device's memory.
3. Lantern acts like a local server for the saved content, and emits a Wi-Fi hotspot. Users can connect to this Wi-Fi with any device to access the saved content.

Lantern is really a pretty simple device. The best way to think of Lantern is a cross between an FM radio and Wi-Fi router.

Where are they found?

Most artificial satellites are found in the **Low-Earth Orbits** (LEO). If it is any higher, radiation begins to affect electrical components.

100-1240 miles is the range of distance above the Earth's surface the CubeSats can orbit.

Main Objective:

The Outernet is bridging the global information divide. The Outernet is extending coverage to everyone, free of charge, bypassing censorship, and acting as a global notification system during natural disasters.

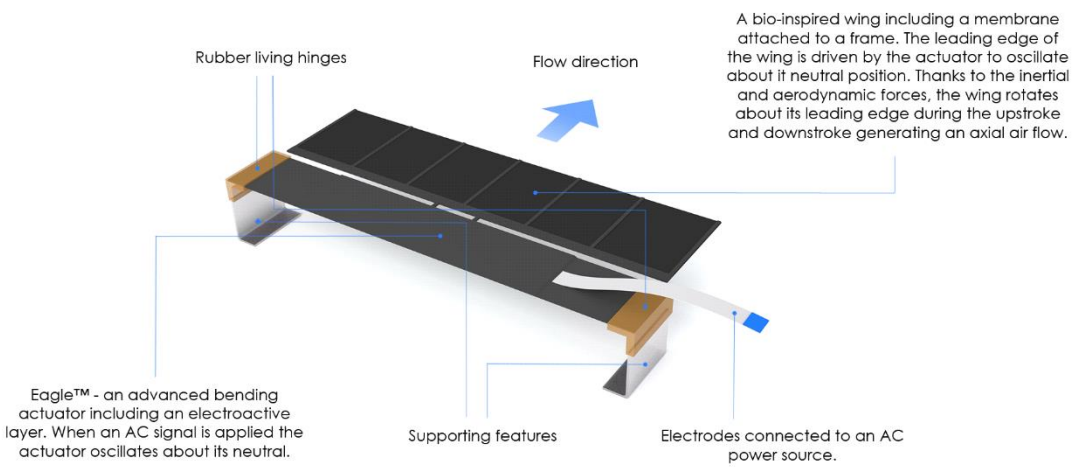
PROMPT ENERGY TRANSMORGRIFICATION

By Radhika Rani (SY)

Recent studies in the Electronics and Telecommunications Research Institute (ETRI),South Korea has led to the development of a thermoelectric module which can convert the body heat energy into electricity and amplify it to power wearable devices.

This thermoelectric moiety5 is similar to a sweat gland structure which can convert temperature differences of the human body and the structure in a similar fashion as a ThermoPot. The other core technology used in it is "biomimetic heat sink". Heat sinking amplifies the difference by almost five times which provides us with desirable output.

Biomimetic heat sink has a very interesting origin, the Hummingbirds. Research has found that most



hummingbirds are about 25% more efficient than the best drones designed to date.

Unlike any other bird wings, hummingbird wings flap in the same manner as insect wings. The wing rotates around its long axis during transitions between upstroke and downstroke. This efficient cooling technology maximizes energy efficiency.

It has been confirmed that when six devices are modularized in a bundle, they can generate up to a commercialization level of 2~3 milliwatts (mW).

The major advantage of this nascent technology is that unlike disposable batteries, these devices can continuously generate energy from the human body temperature. Ultimately making energy availability extremely accessible and handy for all. Little by little our steps towards energy efficient technologies would make the world more livable and sustainable for other futuristic developments.

5G-GATEWAY TO THE NEW FUTURE

By Shruti Tol (TY)

5G refers to 5th-Generation Wireless Systems and uses additional spectrum in the existing LTE frequency range to build on the capabilities of 4G, which is often used interchangeably with 4G LTE by marketers. LTE denotes Long Term Evolution, and is a term that was deployed with early 4G networks that presented a substantial improvement on 3G, but did not fully qualify as 4G, meaning 4G LTE is essentially first-generation 4G.

5G also uses shorter wavelengths than 4G, which means antennas can be shorter without interfering with the direction of the wavelengths. 5G can therefore support approximately 1,000 more devices per meter than 4G. The networks will help power a huge rise in Internet of Things technology, providing the infrastructure needed to carry huge amounts of data, allowing for a smarter and more connected world. With development well underway and testbeds already live across the world, 5G networks are expected to launch across the world by 2020, working alongside existing 3G and 4G technology to provide speedier connections that stay online no matter where you are.

5G will revolutionize the mobile experience with supercharged wireless network, which can support up to 10 to 20 GBPS of data download speed. It is equivalent to a fiber optic Internet connection accessed wirelessly. Compared to conventional mobile transmission technologies, voice and high-speed data can be simultaneously transferred efficiently in 5G.Low latency is one of the most important features of 5G technology which is significant for autonomous driving and mission critical applications. 5G networks are capable of latency less than a millisecond.

Internet of Things (IoT) is another broad area for development using supercharged 5G wireless network. Internet of Things will connect every objects, appliances, sensors, devices and applications into Internet. IoT applications will collects huge amount of data from millions of devices and sensors. It requires an efficient network for data collection, processing, transmission, control and real-time analytics.

To sum up, 5G is one of the most sophisticated wireless technologies we have ever developed so far. It will revolutionize the entire area where wireless network can be used for efficient and secure communication. The socio economics impact of 5G has yet to be analysed. However, it will make significant impact on every areas where wireless transmission is inevitable.

DEPARTMENT ACTIVITIES

GUEST LECTURES ORGANIZED:

Sr. No.	Date	Topic	Subject	Speaker	Audience	Co-Ordinator
1.	7 July 2018	Experience sharing about system design	Product Design	Mrs. Swadha Bhat-Mahabaleshwrkar	BE	Dr. Shubhangi R Chowdhary
2.	3 July 2018	Non-conventional power sources and solar power generation	Green energy (AC)	Mr. Shirish Aphale	BE	Dr. Anita Jain Prof. K.S. Joshi Prof. Prachi Waghmare
3.	20 July 2018	Project ideas that can be turned into products	Projects	Mr. Deepak Bhopatkar	TY	Dr. S.S. Musale Dr. S.S. Vanarase Prof. M.S. Patankar
4.	28 July 2018	Cyber Security	Computer Network Security	Mrs. Pradnya Kashikar	BE	Dr. Mrudul Dixit Prof. Padma Hirve
5.	30 July 2018	Applications of AI	AI	M.r Kunal Chandratre	BE	Dr. Mrudul Dixit
6.	24 Aug 2018	Quick Sort Algorithm	Systems programming and operating sysytems	Dr. Shrirang Karandikar	TY	Prof. Vidya Sisale
7.	3 Sept 2018	Project Planning and Implementation	Projects	Mr. Sunil Bandal	BE	Dr. Mrudul Dixit
8.	1,3,4,5 Sept 2018	Interview Techniques	Audit Course	Dr. Srirang Karandikar	TY all branches	Dr. Anita Patil
9.	10 Sept 2018	Finance	Principles of economics and finance	Ms. Rachana Phadke	SY all branches	Dr. Anita Patil
10.	10 Oct 2018	Preparation for UPSC	Career Guidance	Prof. Ajit Chahal	TY and SY all branches	Dr. Anita Patil

11.	15 Oct 2018	VLSI chips and more	Electronic devices and circuits	Mr. Amol Khanolkar	SY	Prof. Rupali Pawar Prof. Manasi Pathade
12.	23 Oct 2018	Competitive exams, Civil services and Social commitment	Career Guidance	Mr. Shyam Deshpande (Retd IAS officer)	SY all branches	Dr. Anita Patil
13.	24 Oct 2018	Graphs and its Applications	Data Structures	Mr. Sunilkumar Bora	SY	Dr. S.A. Paranjape
14.	1 March 2019	Industrial Applications of DSP	Digital Signal Processing	Mr. Vedant Talnikar	TY	Dr. Ashwini Deshpande
15.		Orbital Mechanics	BCS	Mr. Anant Patki	BE	Prof. Prachi Waghmare Prof. Anamika Kumari

CONFERENCES/WORKSHOPS/SEMINARS ORGANIZED:

Sr. No.	Title	Date	Co-Ordinator
1.	Business Idea Competition – Sell your idea if you can	5 Sept 2018	
2.	Workshop on Raspberry-pi	19 Sept 2018	Dr. Bageshree Pathak
3.	Guidance session seminar on LATEX	26 Sept 2018	Dr. Sharada N Ohatkar
4.	Workshop on Python based AI	28-29 Sept 2018	Dr. Mrudul Dixit
5.	Workshop on Digital Marketing	5-6 Oct 2018	Dr. Anita Patil Prof. Prachi Waghmare
6.	Workshop on Analog and Digital CMOS Design	25-26 Oct 2018	Dr. Seema Rajput
7.	IEEE organized workshop on Python – Hands on	13-14 Dec 2018	Dr. Anita Patil
8.	IEEE organized workshop on Ethical Hacking and Information	5-6 Jan 2019	Dr. Mrudul Dixit

9.	Workshop on Image Processing using Python	17-18 Jan 2019	Dr. Bageshree Pathal
10.	Workshop on Python Internals	16-17 Feb 2019	Prof. Tejashree Pawar
11.	TY Mini Project Competition	26 March 2019	Prof. S.G. Dube Prof. S.A. Mangale
12.	BE Project Competition	27-28 March 2019	Dr. S.S. Musale
13.	Workshop on LATEX	12 April 2019	Dr. Sharada Ohatkar
14.	Workshop on Arduino hands on implementation using Rasberry-pi	16 April 2019	Dr. Bageshree Pathak

INDUSTRIAL VISITS ORGANIZED:

Sr. No.	Industry Visited	Date	Attended By	Co-Ordinator
1.	Avaya pvt.ltd , Magarpatta, Pune	25 September 2018	BE	Dr. Mrudul Dixit Prof Padma Hirave
2.	Abs Electroplaters India pvt.ltd, Sanaswadi, Pune	22 October 2018	TY	Prof. S.L. Sahare
3.	AIR High Power Transmitter, Hadapsar, Pune	18-22 February 2019	SY	Prof. G.R. Padalkar
4.	GMRT, Pune	20 February 2019	TY	Dr. Ashok Khedkar
5.	Streamline Power Systems pvt.ltd, Pune	8 October 2018	TY	Prof. Kalpana Joshi

STUDENT ACHIEVEMENTS

- **Ritu Sharma** awarded as the best outgoing student of 2018-19

PLACEMENTS 2018-19

- **124** students placed from E&TC department

Sr. No.	Name of company	Salary offered (in lakhs)	No of student(s) placed
1	Accenture	4	31
		6	3
2	Amdocs	4.75	1
3	Avaya	12	1
4	Baxter	10	2
5	Bosch	5	12
6	Capgemini	3.8	1
7	Cisco	13	3
8	Eaton	6.25	8
9	Forbes Marshall	6.2	1
10	Hinduja Tech	3.25	1
11	Infosys	4	5
		4.25	1
		6	6
		9	1
12	JCB	2.65	8
13	Mercedes Benz	6	1
14	OFSS	6	2
15	Philips	7	3
16	PWC	8.41	4
17	Rockwell Automation	5.2	3
18	Shoptimize	5	1
19	Siemens Ltd	5	2
20	Tata Autocomp	5	1
21	Tata Communications	3.6	2
22	Tata Motors	6	3
23	TCS	3.5	1
24	TE Connectivity	4.5	2
25	TIAA	7	1
26	UBS	11.5	2
27	Varroc	4	4
28	Vodafone	4.25	3

29	Walmart Labs	**18.75**	1
30	Wipro	3.5	2
31	Standard Chartered	4.67	1

ROBOCON 2019

A National level event organized by Doordarshan and MIT Academy of Engineering, Pune.
Following *E&TC* students are a part of the college team- ***AAVEG 2019.***

- Aditi Chintawar
- Siddhi Sudhir Chikode
- Rucha Kulkarni
- Rutuja Kulkarni
- Aakanksha Khare

SAE AERO DESIGN Micro 2019

A series of competitive mechanical engineering events conducted by SAE International.
Following *E&TC* students are a part of the college team- ***BHARADWAJ 2019.***

- Menta Esha priya
- Apurva Raj
- Tanvi Kumbhar

Jokes

Customer: Do you have any two-watt, 4-volt bulbs?
Sales Rep: For what?
Customer: No, two.
Sales Rep: Two what?
Customer: Yes.
Sales Rep: No.

Is it brown, sweet and has 150kOhms. What it is?
Chocolate packed resistor.

The red wire said to the black wire "Why are you so sad?"
The black wire replied "I've been grounded"

TY MINIPROJECT COMPETITION WINNERS

Position	Name of Students	Title of Mini Project
First	Tripti Chanda , Apurva Amritkar , Aishwarya Bapat	Asthama Attack Detection
First	Aditi Kori , Saudamini Patki , Aditi Rathi	Diagonosis of Diabetic Retinopathy
Second	Nisha Chowdhary , Saumya Jha	QR Code Based Metro Ticket
Third	Vani Deshpande , Sonal Kurane , Mona Tuptewar	Smart Dustbin
Fourth	Madhura Toro, Sanjana Shinde-Desai, Sheikh Aarfa	Security Alert System Using Face Recognition
Fifth	Priyanka Kamthe , Pranjali Phalke , Shraddha Shete	Arduino Based Colour Sorter

FINAL YEAR PROJECT COMPETITION WINNERS

Position	Name of Students	Title of Project
First	Rutuja Ghorpade, Pranjali Gidwani, Shruti Ingale	Fundus Image Analysis
Second	Priyanka Kamble , Pranjali Kamble, Siddhi Velhal	Li-Fi-based Communication Between Mobile and Other Devices
Third	Nikita More,Meghna Raje,Shivangi Sinha	Object Tracking Using Particle Filter in Thermal and Visible Modalities
Consolation	Anagha Gunjal, Chaitali Handrale, Srushti Jadhav	Tennis Ball Collector (Pick and Place Robot)
Consolation	Viraja Shivbhakta , Shreya Joshi, Prajakta Udas	Image Inpainting Using Neural Networks

OTHER TECHNICAL EVENTS (WINNERS)

Sr. No.	Name of student	Name of Event	Month & Year	Level	Prize
1.	Aanchal Zanjari, Rajeshwari Tingle,Sayali Yadav	IEEE Project Competition IOIT , sAISSMS	June-19	Inter-collegiate	*First*
2.	Pranjali Shrivastava, Harsha Sakhare, Samiksha Kadoo	IEEE Project Competition IOIT , AISSMS	June-19	Inter-collegiate	*Second*
3.	Nisha Chowdhary Anagha Deogaonkar	Circuitrix, CCEW	Feb-19	Inter-collegiate	*First*
4.	Ruchita Gholap Dhanashree Bajoreeya	Circuitrix, CCEW	Feb-19	Inter-collegiate	*First*
5.	Devishi Vyas Rachita Bagal	Decrypt in the Dark, CCEW	Feb-19	Inter-collegiate	*First*
6.	Aeishanee Dash	Scifi Trivia, CCEW	Feb-19	Inter-collegiate	*First*
7.	Devishi Vyas	Scifi Trivia, CCEW	Feb-19	Inter-collegiate	*Second*
8.	Pranoti Raut	Scifi Trivia, CCEW	Feb-19	Inter-collegiate	*Third*
9.	Shreya Patil	Scifi Trivia, CCEW	Feb-19	Inter-collegiate	*Third*
10.	Rucha Mehta Mrunmayee Joshi	Scif Trivia, CCEW	Feb-19	Inter-collegiate	*Third*
11.	Samruddhi Joshi Medhavi Subhedar	Electronics Treasure Hunt, CCEW	Feb-19	Inter-collegiate	*First*
12.	Sejal Yeola Amruta Kulkarni	Electronics Treasure Hunt, CCEW	Feb-19	Inter-collegiate	*First*
13.	Aishwarya Kale Snehal Badhe	Electronics Treasure Hunt, CCEW	Feb-19	Inter-collegiate	*First*
14.	Snehal Jadhav Shabdali Patil	Electronics Treasure Hunt, CCEW	Feb-19	Inter-collegiate	*Second*

CULTURAL EVENT WINNERS

Sr. No.	Name of Students	Event Name	Month & Year	Level	Prize
1.	Shrutika Teli , Manasi Mundankar	Rangoli, CCEW	March 2019	Intra-college	*Second*
2.	Apurva Kulkarni Mayuri Damodhar	Rangoli, CCEW	March 2019	Intra-college	*Third*
3.	Divya Gavane Gunjan Kokadwar	Treasure Hunt, CCEW	March 2019	Intra-college	*First*
4.	Arati Padale Manali Nandgaonkar	Doodling, CCEW	March 2019	Intra-college	*Second*
5.	Esha Priya Aayushi Goyal	Fandom Quiz, CCEW	March 2019	Intra-college	*First*
6.	Tanvi Pardhi Kanchan Waghchawre	Fandom Quiz, CCEW	March 2019	Intra-college	*Third*

7.	Roshni Wankhede	Painting, CCEW	March 2019	Intra-college	*First*
8.	Gauri Tambde	Sketching, CCEW	March 2019	Intra-college	*First*
9.	Anagha Deogaonkar	Poem Recitation, CCEW	March 2019	Intra-college	*First*
10.	Shruti Tol	Poem Recitation, CCEW	March 2019	Intra-college	*Second*
11.	Vaishnavi Bhandarkar	Poem Recitation	March 2019	Intra-college	*Second*
12.	Kanchan Waghchawre Ruta Kulkarni	Qrious, CCEW	March 2019	Intra-college	*First*
13.	Rishika Jha Mitali Joshi	Qrious, CCEW	March 2019	Intra-college	*Second*
14.	Sataparna Paul	Cummins Karvan , CCEW	March 2019	Intra-college	*First*
15.	Spruha Pingale	Fashion Show Gandhar, CCEW	March 2019	Intra-college	*Second*
16.	Madhura Navagire	Fashion Show Gandhar, CCEW	March 2019	Intra-college	*Second*
17.	Shivani Padule	Fashion Show Gandhar, CCEW	March 2019	Intra-college	*Second*

SWAYAM – NPTEL Certification Course

Sr. No.	Course Name	Name of Student	Result
1.	Programming, Data Structures and Algorithms using Python	Janhavi Sathe	Elite Topper of 5% in this course
		Anshu Priya	Successfully Completed
		Ayushi Bansal	Elite
		Bhumika Baghia	Successfully Completed
2.	Biology for engineers and other non-biologists	Kanchan Waghchawre	Elite
3.	The Joy of Computing using Python	Shriya Pawar	Elite
		Daivi Borole	Elite
		Ananya shukla	Elite + Gold
		Vedanti Gaikwad	Elite
		Alankriti	Elite
		Vaishnavi Bhairavkar	Successfully Completed

4.	Data Base Management Systems	Alankriti	Successfully Completed
		Mayuri Damodhar	Successfully Completed
		Ruta Kulkarni	No Certificate
		Daivi Borole	Successfully Completed
		Ananya Shukla	Successfully Completed
		Tanvi Pardhi	Successfully Completed
5.	Introduction to Machine Learning	Tripti Chanda	Elite
		Anvesha Katariyar	Elite
6.	Introduction to Internet of Things	Alankriti	Elite
		Ruta Kulkarni	Successfully Completed
		Madhura Pantoli	Successfully Completed
		Shruti Tol	Elite
		Shwetali	Elite
7.	Digital Circuits	Sanjana Shinde-Desai	Elite
8.	Introduction to Literary Theory	Tripti Chanda	Elite
9.	Design and Analysis of Algorithms	Tripti Chanda	Successfully Completed
		Nivedita D Dongre	Successfully Completed
10.	Matlab Programming for Numerical Computation	Anagha Deogaonkar	Successfully Completed
11.	Problem Solving Through Programming in C	Kunjal Kokadwar	Successfully Completed
12.	Fundamentals of Power Electronics	Aditi Tarate	Successfully Completed
13.	Fundamentals of Semiconductor devices	Pranauti Kendhe	Elite + Silver Topper of 5% in this course

SPORTS ACHIEVEMENTS

Sr. No.	Name of the Students	Event in which participated	Month & year	Level	Prizes/ Medals won
1.	Pradnya Mundargi	Summit 2018 Basketball (Women)	4th-8th Sept.2018	National	Winner
		Pune City Zonal Sports Basketball	2018	Intercollegiate	Runner Up
		Damini-2019 Basketball (Women)	2019	Intercollegiate	First prize
		Zest-2019, Handball	2019	Intercollegiate	Winner
		Zest-2019, Basketball	2019	Intercollegiate	Winner
		PACE-2019, Basketbal	2019	Intercollegiate	First
		AIT-2019, Basketball	2019	Intercollegiate	Winner
		PICT-2019, Basketball	2019	Intercollegiate	Winner
		Pentacle-2019, Basketball	2019	Intercollegiate	Winner
2.	Handrale Chaitali Gurunath	Pune City Zonal Sports Football	2018	Intercollegiate	Winner
3.	Bagal Rachita Sharad	Pune City Zonal Sports Football	2018	Intercollegiate	Winner
4.	Kajal Shrawagi	Damini 2019 Volleyball	2019	Intercollegiate	Runner up
		Damini 2019,Tug of war	2019	Intercollegiate	2nd Runner up
		Zest-2019, Volleyball	2019	Intercollegiate	Runner up
		Elevate 2019 Volley ball	18th Feb.2019	Intercollegiate	Winner
		Pentacle 2018 Volley ball	2018	Intercollegiate	Winner
5.	Aparna Athwale	Damini-2019 Kabadi	2019	Intercollegiate	Second prize
6.	Rashmi Jadhav	Damini-2019 Kabadi	2019	Intercollegiate	Second prize
		Damini-2019 Tug of war	2019	Intercollegiate	Third prize
7.	Manasi Bhandarkar	Zest-2019, Handball	2019	Intercollegiate	First
8.	Manjushree Jiwane	Damini 2019 Volleyball	2019	Intercollegiate	1st Runner up
		Zest-2019, Handball	2019	Intercollegiate	Runner Up
9.	Rucha Mehta	Zest-2019, Cricket	2019	Intercollegiate	Runner up
10.	Rutuja Ghorpade	Zest-2019, Football	2019	Intercollegiate	Runner up
11.	Dhanshree Kasture	Zest-2019, Chess Classical	2019	Intercollegiate	First
		Zest-2019, Chess Blitz	2019	Intercollegiate	First
		Damini 2019 Chess	2019	Intercollegiate	First

12.	Simran Gumber	Pentacle 2018 Football	2018	Intercollegiate	First
13.	Darshana Pondkule	Zest-2019, Cricket	2019	Intercollegiate	Runner up
		Damini 2019 Cricket	2019	Intercollegiate	First
14.	Hanika Shah	University, Football	2019	Intercollegiate	Winner
		Zest-2019,Cricket	2019	Intercollegiate	Runner up
		Zest-2019, Handball	2019	Intercollegiate	Winner
15.	Simran Gumber	University-2019,Football	2019	Intercollegiate	Winner
		AIT-2019,Football	2019	Intercollegiate	Winner
		Zest-2019,Football	2019	Intercollegiate	Runner up
		VIT-2019,Football	2019	Intercollegiate	Runner up
		Flames-2019,Football	2019	Intercollegiate	Runner up
		MIT-2019,Football	2019	Intercollegiate	Runner up
		Pentacle-2019,Football	2019	Intercollegiate	Winner
16.	Mona Tupekar	Zest-2019,Football	2019	Intercollegiate	Runner up
17.	Ketki Thipse	Zest-2019,Football	2019	Intercollegiate	Runner up
		Flames-2019, Football	2019	Intercollegiate	Runner up
		Pentacle-2019, Football	2019	Intercollegiate	Winner
18.	Manisha Chavan	Damini-2019, Kabaddi	2019	Intercollegiate	Runner up
19.	Rashmi Jadhav	Damini-2019, Kabaddi	2019	Intercollegiate	Runner up
20.	Aparna Athawale	Damini-2019, Kabaddi	2019	Intercollegiate	Runner up
21.	Ananya Shukla	Pentacle-2019,Football	2019	Intercollegiate	Runner up
22.	Harshada Chougule	Zest-2019, Hammer throwing	2019	Intercollegiate	Runner up
23.	Rutuja Ghorpade	University-2019,Football	2019	Intercollegiate	Winner
		AIT-2019,Football	2019	Intercollegiate	Winner
		Zest-2019,Football	2019	Intercollegiate	Runner up
		VIT-2019,Football	2019	Intercollegiate	Runner up
		Flames-2019,Football	2019	Intercollegiate	Runner up
		Pentacle-2019,Football	2019	Intercollegiate	Winner
24.	Rachita Bagal	University-2019,Football	2019	Intercollegiate	Winner
		AIT-2019,Football	2019	Intercollegiate	Winner
		VIT-2019,Football	2019	Intercollegiate	Runner up
		Pentacle-2019,Football	2019	Intercollegiate	Runner up

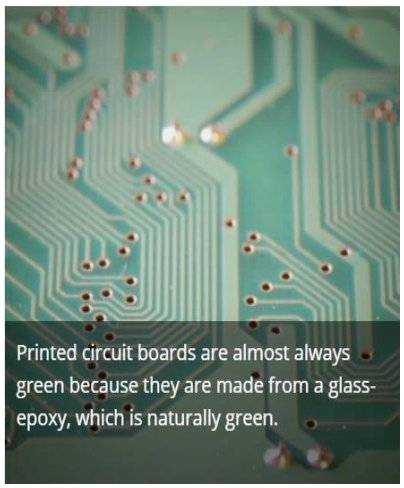
GOLDMAN SACH SCHOLARSHIP AND MENTORSHIP

Sr. No.	Name	Year	Award
1.	Aarfa Bano Sheikh	TY	Scholarship (US $1500) & Mentorship Award
2.	Ashwini Khaple	TY	Scholarship (US $1500) & Mentorship Award
3.	Mrunal Tambe	SY	Mentorship Award
4.	Anuja Tidke	SY	Scholarship & Mentorship Award

NCAT 2019

Sr. No.	Name	Round 1	Round 2 Rank
1.	Rucha Kulkarni	*Selected for Round 2*	36
2.	Sriya Garde	*Selected for Round 2*	37
3.	Mrunal Tambe	*Selected for Round 2*	39
4.	Ketki Vidhate	*Selected for Round 2*	46
5.	Mansi Bhandarkar	*Selected for Round 2*	-
6.	Tripti Chanda	*Selected for Round 2*	-

FUN FACTS



- A ½" diameter tube can fit one million threads of fiber optic cable.
- Your favourite Nokia tone for receiving SMS text messages is actually Morse code for SMS.

FACULTY ACHIEVEMENTS

RESEARCH GRANTS RECEIVED

- ***Dr. Ashwini Deshpande*** *has received a research grant under ISRO-UoP Joint Research Programme for the project Development of Image Quality Improvement Algorithms for Satellite imagery- Radiometric data - an amount of Rs.8,70,000 over a period of 2 years.*

RESOURCE PERSON

Sr. No.	Faculty Name	Title/Topic
1.	Dr. Prachi Mukherjee	PHD Examiner at SRM Chennai on 8th Oct 2018
		PHD Review team member at COEP, Bharati Vidyapeeth, MIT
		Synopsis Examiner at DYP Pimpri
		Interviewer at SCOE
2.	Dr. Anita Patil	Examiner for MTech Project Exam at MIT-ADT University, Pune
3.	Dr. Sharada Ohatkar	Examiner for ME Dissertation at WIT Solapur University
		Question paper setting for end-semester exam at G.H.Raisoni College, Pune
		Question paper setting for SPPU ME exam
		ME Seminar at MIT-WPU on 26th October 2018
		Expert Lecture on Information Theory and Applications at JSPM on 15th January 2019
		Reviewer of SCOPUS index Journal of Engineering, Science and Technology at Taylor's University on 1st February 2019
4.	Dr. Sandeep S Musale	Expert for SPPU on interview panel at Ramchandra COE on 18th December 2018
		Expert by SPPU for Avishkar National Competition in January 2019
5.	Dr. Shubhangi Chaudhary	Examiner for ME Dissertation at SGDCOE, Jalgaon on 9th November 2018
6.	Dr. Bageshree Pathak	Examiner for ME Dissertation at KJ Somaiya college, Mumbai on 31st October 2018
		Guest lecture on Signals and Systems (Random Variables and Probabilities) at MMCOE on 3rd October 2018
		Faculty Development Program on Audio and Video Engineering at VIIT on 21st December 2018
7.	Dr. Ashwini Deshpande	Guest speaker for faculty oriented workshop on Digital Image and Video Processing at DYPIEMR, Akurdi on 13th July 2018
		Examiner for ME Dissertation at PVPIT, Sangli on 17th August 2018
		Examiner for ME Dissertation at TKIET, Warananagar on 1st September 2018
		Question paper setting for G.H.Raisoni college, Pune on 21st September 2018
8.	Dr. Seema Rajput	Examiner for ME Dissertation on Vital Parameter Monitoring for Health at BVCOE, Pune on 13th October 2018

		Question paper setting on Algorithm for VLSI Design Automation for BVCOE, Pune on 12th September 2018
		Question paper setting on Testing and Verification of VLSI Design for BVCOE, Pune on 12th September 2018
9.	Dr. Mrudul Dixit	Guest speaker for faculty oriented workshop on Computer Networks and Securities at I²IT, Pune on 9th July 2018
10.	Dr. Ashok Khedkar	Guest speaker for SPPU faculty oriented workshop on Mobile Communication at MMCOE, Pune on 13th December 2018
11.	Supriya Mangale	Question paper setting for ME SPPU on 12th October 2018

PAPERS PUBLISHED

Sr. No.	Faculty Name	Paper Title	Journal/Conference
1.	Dr. Madhuri Khambete	Image Quality Assesment Database for demosaicing artifacts	International Conference on Communication and Signal Processing,, India (April 2018 ISSN: 978-1-5386-3521-6/18)
2.	Dr. Prachi Mukherjee	Fuzzification of Context Parameters for Network Selection in Heterogeneous Wireless Environment	2018 Springer International conference on Computer Networks and Inventive Communication Technologies (ICCNCT - 2018) Volume 15 2018 ISSN:2367-4520 ISBN:978-981-10-8681-6
		An Intelligent Video Surveillance System for Anomaly Detection in Home Environment Using a Depth Camera	Springer conference published in Scopus indexed Journal Advances in Intelligent Systems and Computing ,SPRINGER Nature Singapore Pte Ltd. 2019 2018 ISSN: 2194-5357
		Indoor Human Fall Detection System Based On Automatic Vision Using Computer Vision And Machine Learning Algorithms	International Journal JESTEC (Journal of Engineering Science and Technology) SCOPUS Journal Vol.13,No 8(2018) ISSN: 18234690
		Deep Learning with Spatio-Temporal Descriptor of Appearance and Motion Estimation for Video Anomaly Detection	International Journal of Imaging Journal of Imaging, Volume 4, Issue 6 (June 2018) ISSN : 2313433X DOI: 10.3390/jimaging406007
		Threshold Based Approach for Human Fall Detection System	Journal of Applied Science and Computations Vol5.Issue 7,June 2018 ISSN :1076-5131

		Enhancement of Microstrip Patch Antenna Parameters Using Defective Ground Structure	Springer Nature Singapore Pvt. Ltd. 2018 Part of the Advances in Intelligent Systems and Computing book series (AISC, volume 696) Print ISBN 978-981-10-7385-4 Online ISBN 978-981-10-7386-1
		A Novel Algorithm For Speech Recognition Using Tonal Frequency Cepstral Coefficients Based On Human Cochlea Frequency Map	Journal of Engineering Science and Technology (Scopus, ESCI, UGC listed) ISSN: 1823-4690
		Speech Recognition using Novel Diatonic Frequency Cepstral Coefficients and Hybrid Neuro fuzzy Classified	Springer- Lecture Notes in Computational Vision and Biomechanics (Scopus, UGC listed) Proceedings of the International Conference on ISMAC in Computational Vision and Bio-Engineering 2018 (ISMAC-CVB) ISSN: 2212-9413
3.	Dr. Anita Patil	Cardiac Arrhythmia Detection through ECG Signals	IEEE Sponsored 4th International Conference for Convergence in Technology (I2CT) 2018". Mangalore, Karnataka, India
		Cardiac Arrhythmia Detection through ECG Signals	International Journal of Electrical, Electronics and Data Communication (IJEEDC) Vol-6, Issue-19, Oct 201
4.	Dr. Sharada N. Ohatkar	Analysis of VANET protocols for Urban and Rural area using QualNet Simulator	MAT Journals, Journal of Telecommunication Study Volume 4 Issue 1, pp 18-26
		Comparative Analysis of Protocols Applied in MANET and VANET Using QualNet Simulator	International Journal of Current Engineering and Scientific Research (IJCESR) Volume-6, Issue-4, pp 105-112, 2019
		GA with SVM to Optimize the Dynamic Channel Assignment for Enhancing SIR in Cellular Networks.	Advances in Signal Processing and Communication. Lecture Notes in Electrical Engineering, vol 526. Springer, Singapore vol 526, 20 November 2018, pp 73-83 Print ISBN 978-981-13-2552-6, Online ISBN 978-981-13-2553-3
5.	Dr. Sandeep S Musale	Grey hole and Cooperative attack prevention protocol for MANET'	International conference on emerging Technologies in Data Mining and Information Security Lecture notes in computer Science by Spring
6.	Dr. Bageshree Pathak	Face recognition based attendance system using machine learning algorithms	International Conference on Intelligent Computing and Control Systems (ICICCS 2018) 14-15 June 2018 ISBN:978-I-5386-2842-3

		Stress Level Detection from Human Speech	International Journal of Innovative Research in Science, Engineering and Technology ISSN(Online): 2319-8753
7.	Dr. Ashwini Deshpande	Human Head Pose and Eye State Detection Based Driver Distraction Monitoring System	3rd International Conference on CVIP-2018 September 29- October 01, 2018
8.	Dr .Seema Rajput & Dr.Anita Jain	Book: "Integrated Circuits" Published by Giatech Publishing House for Second Year Degree course in Electronics /Electronics &Telecommunication Engineering (Sem -IV)	
9.	Dr. Mrudul Dixit	Naive Bayes and SVM based NIDS	International Conference on Inventive Computation Technologies (ICICT-2018) Coimbatore, Tamilnadu, India IEEE Conference November 15-16, 2018 Scopus record id : 21100793693
10.	Prof Manasi Pathade	Unsupervised Detection of Dispersion and Merging Activities for Crowded Scenes	3rd International Conference on Advanced Computing and Intelligent Engineering (Springer) 22 - 24 Dec 2018
11.	Prof Ganesh R Padalkar	Analysis of Basic-SegNet Architecture with variations in training options	18th International Conference on Intelligent Systems Design and Applications (ISDA) at Vellore Institute of Technology, Vellore, India 6 - 8 Dec 2018
12.	Prof Prachi Waghmare	Overview of Social Media Monitoring Tools	4th International Conference on Research Trends in Engineering, Applied Science and Management(ICRTESM-2018) 12/16/2018 UNIVERSAL REVIEW Volume 7, Issue XII, December/2018 (ISSN NO : 2277-2723)

SWAYAM – NPTEL Certification Course

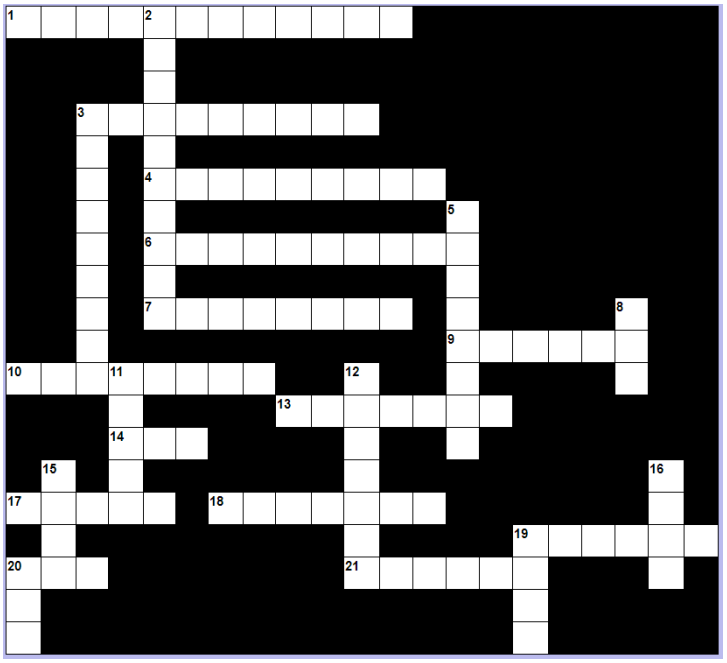
Sr. No.	Faculty Name	Course Name	Result
1.	Dr. Ashwini Deshpande	Remote Sensing and Digital Image Processing of Satellite Data	Elite
		Machine Learning for Science and Engineering Applications	Elite
2.	Prof. Tejashree Kadam	The Joy of Computing using Python	Elite + gold
		Programming in C++	Elite + Silver Topper in 5% of this course
		Programming in Java	Elite + Silver
3.	Dr. Seema Rajput	Hardware modeling using verilog	Successfully completed
4.	Dr. Megha Borse	Basic electrical circuits	Successfully completed
5.	Dr. Sharada Ohatkar	Principles of Signal Estimation for MIMO/ OFDM Wireless Communication	Elite
6.	Prof. Anamika Kumari	Computational Electromagnetics & Applications	Successfully completed
		Electromagnetic Compatibility, EMC	Elite + Silver
		Introduction to Non-linear Optics and its Applications	Successfully completed
7.	Dr. Anita Patil	Stress Management	Elite
		Joy of Computing using Python	Elite
8.	Prof. Sandhya Potdar	Digital Image Processing	Elite
		Joy of Computing using Python	Elite
9.	Prof. Ganesh Padalkar	Digital Image Processing	Elite
10.	Dr. Bageshree Pathak	Outcome based pedagogic principles for effective teaching	Elite
		Joy of Computing using Python	Elite
12.	Dr. Anita Jain	Hardware modeling using verilog	Elite
13.	Prof. Manasi Pathade	Digital Image Processing	Elite
14.	Dr. Sandeep Musale	Digital Image Processing	Elite
15.	Prof. Preeti Shenolikar	Embedded System Design with ARM	Elite
		Joy of Computing using Python	Elite
		Machine Learning for Science and Engineering Applications	Successfully Completed
16.	Prof. Pallavi Kamble	Computer Organization and Architecture: Pedagogical Aspect	Successfully Completed
17.	Prof. Prachi Waghmare	Social Networks	Successfully Completed
18.	Dr. Ashok Khedkar	Evolution of Air Interface towards 5G	Elite + Silver
		Electromagnetic Compatyability, EMC	Successfully Completed

CONFERENCES/SEMINARS/WORKSHOPS ATTENDED

Sr. No.	Faculty Name	CSW Attended
1.	Dr. Sharada N. Ohatkar	SWAYAM-NPTEL (AICTE Approved FDP) on Principles of Signal Estimation for MIMO/ OFDM Wireless Communication by IIT Kanpur, Online
		SWAYAM-NPTEL (AICTE Approved FDP) on Evolution of Air Interface towards 5G (Online)
2.	Dr. Sandeep Musale	Faculty Oriented Workshop on Electronic Product Design at AISSMS IOIT, Pune
3.	Dr. Sandeep Musale Prof. Mahesh K. Pote Prof.Ganesh Padalkar Prof.Sandhya Potadar Prof.Manasi Pathade Prof. Rupali Pawar	NPTEL (AICTE Approved FDP) on Digital Image Processing (Online)
4.	Dr. Seema Rajput	Faculty oriented workshop on VLSI Design & Technology at PCCOE ,Pune
		NPTEL (AICTE Approved FDP) on Basics of Software Defined Radios and practical applications (Online)
5.	Dr. Bageshree Pathak	NPTEL Online course on Outcome based padegogy for effective teaching learning (Online)
		Workshop on Python programming at CCOEW
		Workshop on Auditory signal processing and Matlab programming at PICT, Pune
		Workshop on Image Processing using Python at CCOEW
6.	Dr. Bageshree Pathak Dr. Anita Patil Prof.Snehal Natekar Prof. Tejashree Pawar	NPTEL (AICTE Approved FDP) on Joy of Computing in Python (Online)
7.	Dr. Shubhangi R.Chaudhary	NPTEL Online course on Introduction to Wireless and Cellular Communications (Online)
8.	Dr. Ashwini Deshpande	NPTEL (AICTE Approved FDP) on Remote Sensing and Digital Image Processing of Satellite Data (Online)
9.	Dr. Mrudul Dixit	Faculty oriented workshop on Artificail Intelligence at DYPIEMR, Pune
		Seminar on AI for All at MITSOT, Pune
		Faculty oriented workshop on Machine Learning at VIIT, Pune
10.	Dr. Anita Jain Prof Prachi waghmare	One Day Seminar on Awareness about DRDO Research Projects at COEP,pune
11.	Dr. Anita Jain Dr. Seema Rajput Prof. Ravikant Suryawanshi	NPTEL (AICTE Approved FDP) on Hardware Modelling using Verilog (Online)
12.	Dr. Anita Patil	NPTEL (AICTE Approved FDP) on Stress Management (Online)
		Workshop on Digital Marketing at CCOEW, Pune

13.	Dr. Ashok Khedkar	NPTEL Online course on Analysis and Design Principles of Microwave Antennas by IIT Kharagpur,Online
		NPTEL Online course on Outcome based padegogy for effective teaching learning by IIT Kanpur
14.	Dr. Megha Borse	NPTEL online course on Basic Electrical circuits by IIT Madras, online
15.	Prof Anamika Kumari	NPTEL (AICTE Approved FDP) on Introduction to Non-Linear optics and its Application
		NPTEL (AICTE Approved FDP) on Computational Electromagnetics and Application
		NPTEL Awareness Workshop on NPTEL Awareness at MIT Academy, Alandi
16.	Prof Anamika Kumari Prof Prachi waghmare	Faculty oriented workshop on Broadband Communication system at PCCOE, Ravet, Pune
17.	Prof Prachi waghmare	NPTEL (AICTE Approved FDP) on Joy of Computing in Python (Online)
18.	Prof.Sandhya Potadar	Workshop on Cyber Forensics and Ethical Hacking at CCOEW
		Workshop on Image Processing using Python at CCOEW
		Faculty oriented workshop on Audio Video Engineering at VIIT, Pune
		One day workshop on Ethical hacking and Information Security at CCOEW, Pune
19.	Prof. Tejashree Pawar	NPTEL (AICTE Approved FDP) on Programming in C++ (Online)
		NPTEL (AICTE Approved FDP) on Programming in Java (Online)
20.	Dr. Mrudul Dixit Prof. Padma Hirave	Faculty oriented workshop on Computer Networks and Security at IsquareIT , Pune
21.	Prof. R. R. Borhade	Faculty oriented workshop on Biomedical Electronics at RMD, Pune
		Faculty oriented workshop on Mobile Communication at MMCOE , PUNE
22.	Prof. S L Sahare	Faculty oriented workshop on Robotics at AISSMS COE, Pune
23.	Prof.Manasi Pathade	IEEE SPS Winter School for Advances in Machine Learning and Visual Analytics for Forensic and Security Applications at MIT WPU Pune
24.	Prof.M.S.Patankar	Training Course on GEN TRIZ Level1- Basic at CCOEW
25.	Prof.Vidya Sisale	Faculty oriented workshop on PLC and Automation at VIIT, Pune

A TREAT FOR YOUR BRAIN



Across:

1. A connection that should not be there
3. Electricity can flow through
4. Does not conduct electricity -
6. Temperature changes its resistance
7. This component reduces the flow of electricity
9. This means three in the colour code
10. An adjustable resistor
13. Measured in amps!
14. Short for a type of circuit board
17. The unit of potential difference and EMF
18. A source of power!
19. Buzzers and LEDS are examples of an -
20. A light sensitive resistor
21. Turn a circuit on or off with this

Down:

2. This component is able to switch or amplify
3. This component stores electric charge.
5. A solder joint that does not conduct electricity -
8. 2% tolerance
11. Sensors are -
12. What comes between input and output?
15. 5 per cent tolerance
16. Helps the solder flow
19. Resistors are measured in -
20. Usually produces a red light!

VISIT TO GMRT

VISIT TO AIR

GUEST LECTURE ON VLSI

GUEST LECTURE BY DR.SEVA PANDA

NSS ACTIVITIES

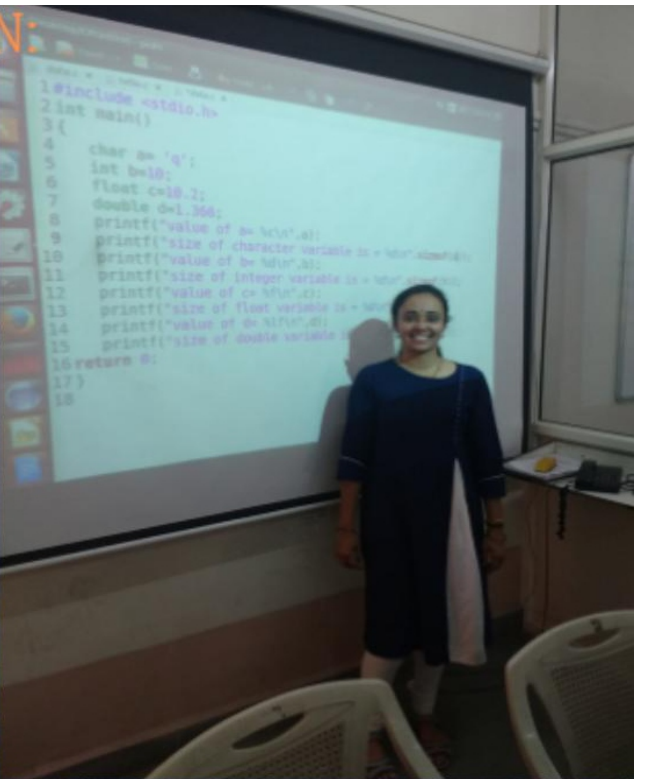
TRAFFIC AWARENESS CAMPS WERE CONDUCTED ON A LARGE SCALE

GLANCE OF THE VARIOUS ACTIVITIES CONDUCTED

WORKSHOPS ON:

IMAGE PROCESSING

C PROGRAMMING



PYTHON

B.E. AND T.Y.PROJECT COMPETITIONS