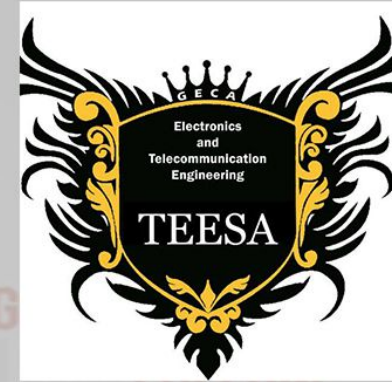




Government College of Engineering Aurangabad
(An Autonomous Institute of Government of Maharashtra)
"In pursuit of Technical Excellence"



Electronics and Telecommunication Department

**Telecommunication and Electronics Engineering Students Association
(TEESA)**

presents

E-Magazine



About Department Vision and Mission

Department of E&TC had started U.G. Course B.E.(E&TC) in 1986 with sanctioned intake of 40 and enhanced to 60 in 1996. Department also runs full time Post Graduate Course M.E. (EC) and well equipped Recognized Research Centre leading to Ph.D. (Electronics Engineering). Part time BE (E&TC) and part time ME (EC) are also run to give opportunity to working graduates and diploma holders. The department has well qualified and dedicated faculty. Department has e-learning facility, wherein course material is uploaded on server. It is made available for students as 24x7 asynchronous activities to assign various tasks like group assignment/project. IIT Kharagpur Video Lectures are also available in the department as learning resource. NPTEL video lectures are available on e-server of the department and students have their own access to use this as independent learning.

Vision

Excellence in Electronics Engineering Education and Research & Development.

Mission

Impart learning oriented education and equip students with strong foundation enabling for continuing education in Electronics Engineering field.

Educate students through state of art technologies to meet the growing challenges of the industry.

Encourage students for analytical, creative thinking and innovative research Foster moral and ethical practices in the interest of human values.

HOD's Desk

I am very much pleased to know that TEESA is publishing its e-magazine this year. I am proud to be associated with them. Though I was initially educated in Electrical Engineering during my Diploma studies, I was much fascinated towards electronic engineering. I started my study of electronic engineering during the days of vacuum tube diodes/triodes and pentodes and was lucky enough to witness the transition to semiconductor devices. It opened a vast opportunities of its applications in all walks of life. The growth in electronic market had witnessed increase in large volumes with day by day decrease in the cost of semiconductor devices and circuits. I had really enjoyed building many circuits from design, PCB to fabrication. There are endless opportunities and applications which an electronic engineer can do and can aspire to be an entrepreneur.

However since the employment scenario being changed in last few years and students being absorbed in IT industries, it is observed that the enthusiasm to study discrete electronics and undertake core projects is diminishing; eventually resulting in introduction of more non-core subjects in studies which is a great matter of concern. But I must remind you of one thing that IT industry can make your life easier by way of computerization at all walks of life but cannot be possible without involving electronics. Therefore you should feel proud that you are studying one of the most desired and sought branch of study and shall devote your attention to study the core electronic engineering subject to their details. It is possible when you are well informed about various technological developments, professional practices and activities which are taking place around the world. One way to remain connected is by involvement in the activities of the professional bodies of electronic engineers such as Institute of Electronics and Telecommunication Engineering (IETE). And I am also very glad to know and feel proud that our students have enrolled themselves as student members and are constituting IETE Student Forum on 24th January 2019 which is a great leap forward. I am sure that our students will involve in these professional activities and shall mould themselves to be placed in any industry with great confidence.



Prof. R. P. Chaudhari
Head
(Electronics and
Telecommunication)

TEESA Council Head

Electronics and Telecommunication branch is an ever evolving branch which has an ever expanding base and serves as a firm foundation for the latest development in the department of Electronics and Telecommunication. The department includes numerous innovations due to which it imparts the required technical and practical knowledge to the students. Electronics and telecommunication department has always been a source of development may it be social, cultural or technical. The e-magazine is an attempt to be a part of global connection. With the aid of e-magazine we can share our articles, achievements and happenings on the department campus. I feel that this is a good initiative by the council. I appreciate the hard work done by the council and hope that the e-magazine is a success. I wish all the best to the students and appeal them to make full benefits out of it. Your honest feedback is always needed and helps us to make the e-magazine even more fruitful.



Prof. S. S. Agrawal
TEESA Faculty Advisor
TEESA

Techno Freak

Indian Space Research Organisation's (ISRO) heaviest and most-advanced high throughput communication satellite GSAT-11 was successfully launched from the Spaceport in French Guiana during the early hours today. The launch vehicle Ariane 5 VA-246 lifted off from Kourou Launch Base, French Guiana at 02:07 am (IST) carrying India's GSAT-11 and South Korea's GEO-KOMPSAT-2A satellites, as scheduled. Ariane 5 is one of three launch vehicles operated by Arianespace along with Soyuz and Vega. After a 30-min flight, GSAT-11 separated from the Ariane 5 upper stage in an elliptical Geosynchronous Transfer Orbit. The achieved orbit was very close to the intended one. The 5854-kg GSAT-11 will provide high data rate connectivity to users of Indian mainland and islands through 32 user beams in Ku-band and 8 hub beams in Ka band. "GSAT-11 will boost the broadband connectivity to rural and inaccessible Gram Panchayats in the country coming under the Bharat Net Project, which is part of Digital India Programme," ISRO Chairman Dr K Sivan said.

The Bharat Net Project aims to enhance the public welfare schemes like e-banking, e-health, e-governance among others. He said GSAT-11 will act as a forerunner to all future high throughput communication satellites. "Today's successful mission has boosted the confidence of the entire team," Dr Sivan added. Post-separation, ISRO's Master Control Facility at Hassan in Karnataka took over the command and control of GSAT-11 and found its health parameters normal. The scientists will undertake phase-wise orbit-raising manoeuvres in the days ahead to place the satellite in the Geostationary Orbit (36,000 km above the equator) using its on-board propulsion systems. GSAT-11 will be positioned at 74-degree east longitude in the geostationary orbit. Subsequently, the two solar arrays and four antenna reflectors of GSAT-11 will be deployed in orbit. The satellite will be operational after the successful completion of all in-orbit tests. In the last 21 days, ISRO successfully completed three satellite and two launch vehicle missions.

INDIA'S HEAVIEST COMMUNICATION SATELLITE GSAT-11 LAUNCHED SUCCESSFULLY FROM FRENCH GUIANA



3D - PRINTER

We are all familiar with the 2D printer i.e the black and white or colour printer. The photocopy of any document is printed with the printer as per the input image that was given to it. The later world expected the things to be experienced in the actual dimensional view and this led to the invention of the 3D printer. Now, what actually is a 3D printer? Making the desired objects of any dimensions as per the actual image that was given to the input is called as the 3D printer. The image sends the information like the height, width, depth, etc to the printer through the sensors or even manual inputs can be given. The obtained information is then processed, brought together to make a digital image and hence, the printing starts. The material used here varies as per the requirements. Some materials such as liquid molecules or powder grains being fused together and the desired shape are given. The printed objects are then made to cool and acquire the firm shape. The resulting object is actually the 3D output of the given input. The history of 3D printing goes back to 1981. Early additive manufacturing equipment and materials were developed in the 1980s. In 1981, Hideo Kodama of Nagoya Municipal Industrial Research Institute invented two additive methods for fabricating three-dimensional plastic models with



photo-hardening thermoset polymer, where the UV exposure area is controlled by a mask pattern or a scanning fibre transmitter. Before the 1700's, the printing works were pretty hard. The person used to type the news, check the contents, spellings and then finalise it to proceed to later typing the same content. The newspaper then was very limited due to this technology. A latest 2D printer may it be white and black or a colour printer takes an image, process over it to adjust the intensity of the colour to be used and then the printing is done. The printed output looks just as a photocopy of the original image. The company XEROX used to build machines that would allow us to take a photocopy. Later, Xerox was the word used instead of photocopy.

GJ TALKS
Gandhar Joshi
BE E_nTC (2018-19)
gjwale.blogspot.com

A palm-sized robot has been made with a drop of a metal in a plastic wheel. The robot's wheel rolls when the liquid metal changes the center of gravity, which is controlled by altering the voltage through the embedded battery.

The researchers expect to further develop soft robots using liquid metal. They could be used in special missions such as searching for and rescuing earthquake victims, since they can change shape to slide under doors or make it through spaces humans can't get into. The controlled actuation of gallium liquid metal (LM) alloys has presented new and exciting opportunities for constructing mobile robots with structural flexibility. However, the locomotion of current LM-based actuators often relies on including a gradient of interfacial tension on the LM surface within electrolytes, which limits their application outside a liquid environment. In this work, a wheeled robot using a LM droplet as the core of the driving system is developed that enables it to move outside liquid environment.



A WHEELED ROBOT DRIVEN BY A LIQUID METAL DROPLET

The LM droplet inside the robot is actuated, using a voltage to alter the robot's center of gravity, which in turn generates a rolling torque and induces continuous locomotion at a steady speed. A series of experiments is carried out to examine the robot's performance and then to develop a dynamic model using the Lagrange method to understand the locomotion. An untethered and self-powered wheeled robot that utilizes mini-lithium-batteries is also demonstrated. This study is envisaged to have the potential to expand current research on LM-based actuators to realize future complex robotic systems.

Brain Computer Interaction

Scientists have developed a new artificial intelligence system that can decode the human mind, and interpret what a person is seeing by analyzing brain scans. The advance could aid efforts to improve artificial intelligence (AI) and lead to new insights into brain function. Critical to the research is a type of algorithm called a convolutional neural network, which has been instrumental in enabling computers & smartphones to recognise faces and objects. "That type of network has made an enormous impact in the field of computer vision in recent years," said Zhongming Liu, an assistant professor at Purdue University in the US. "Our technique uses the neural network to understand what you are seeing," Liu said. Convolutional neural networks, a form of "deep-learning" algorithm, have been used to study how the brain processes static images and other visual stimuli. "This is the first time such an approach has been used to see how the brain processes movies of natural scenes - a step toward decoding the brain while people are trying to make sense of complex and dynamic visual surroundings," said Haiguang Wen, a doctoral student at Purdue University. The researchers acquired 11.5 hours of Functional magnetic resonance imaging (fMRI) data from each of three women subjects

watching 972 video clips, including those showing people or animals in action and nature scenes. The data was used to train the system to predict the activity in the brain's visual cortex while the subjects were watching the videos. The model was then used to decode fMRI data from the subjects to reconstruct the videos, even ones the model had never watched before. The model was able to accurately decode the fMRI data into specific image categories. Actual video images were then presented side-by-side with the computer's interpretation of what the person's brain saw based on fMRI data. I think what is a unique aspect of this work is that we are doing the decoding nearly in real time, as the subjects are watching the video. We scan the brain every two seconds, and the model rebuilds the visual experience as it occurs," said Wen, lead author of the study published in the journal Cerebral Cortex. The researchers were able to figure out how certain locations in the brain were associated with specific information a person was seeing. "Using our technique, you may visualize the specific information represented by any brain location, and screen through all the locations in the brain's visual cortex," Wen said. "By doing that, you can see how the brain divides a visual scene into pieces, and re-assembles the pieces into a full understanding of the visual scene," he said.

Aman Parate
SE EnTC (2018-19)

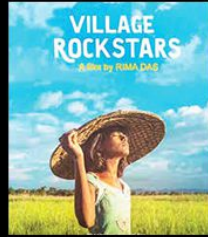
Tin Whiskers

Tin whiskers, the metallic quirks that spoil everything from televisions to space travel. Sometimes, electronics just stop working. There doesn't seem to be any rhyme or reason to it—one day they're just fine, and the next day they're dead. The culprit may have been something you could never see with the naked eye. They're commonly called "tin whiskers," but they can happen to a number of different metals, not just tin. What exactly are they? They may sound like the Tin Man's five o'clock shadow, but tin whiskers are actually pretty insidious. They're microscopic, crystalline structures that sprout out of the tin that's used to solder and coat many electronic circuits, though whiskers can also grow from metals like zinc, cadmium, and silver. Whiskers generally happen due to stress in the metal. Any bending, compression, stretching, or even scratches and nicks can be enough to sprout them. We've known about them since the 1940s, but they've actually gotten worse in recent years because of an unrelated safety guideline: the elimination of lead in electronics, which has been great for human health, but bad for electronics, since lead can keep whiskers from forming. Tin whiskers can extend several millimetres—sometimes even longer than 10 millimetres, according to NASA—but they don't need to be very big to wreak havoc on electronics. That's because they only need to be long enough to form a "bridge" between two different electronic parts. That bridge can cause problems as minor as intermittent short circuits and as damaging as metal vapor arcs. The latter occur when high current and voltage vaporize the whisker, turning it into a plasma of metal ions that can carry hundreds of amps, wreaking catastrophic destruction in its wake. Real-World consequences. Here on Earth, whiskers can cause problems in everything from your TV remote to medical devices. In 1986, the FDA recalled several models of a pacemaker because tin whiskers were causing circuit problems. More recently in 2005, a nuclear reactor in Connecticut was suddenly shut down due to a computer malfunction caused by—you guessed it—a single tin whisker. Whiskers can cause even more damage above the ground. That's because higher altitudes help whiskers form even faster. The microscopic growths have been enough to shut down satellites, destroy airplane communication equipment, and ruin space shuttle components. The problem is especially risky for space travel, where any glitch could mean the difference between life or death. Luckily, experts are aware of the problem, and are hard at work figuring out solutions to fight it.

Atharva Bagad SE EnTC (2018-19)

65TH NATIONAL FILM AWARDS 2018

**BEST FEATURE FILM:
VILLAGE ROCKSTARS
(ASSAMESE)**



**BEST POPULAR FILM:
BAAHUBALI: THE
CONCLUSION**

**BEST ACTRESS:
SRIDEVI (MOM)**



**BEST ACTOR:
RIDHI SEN
(NAGAR KIRTAN)**



**DADA SAHEB PHALKE
AWARD:
VINOD KHANNA**



**BEST
DIRECTOR:
JAYARAJ
(BHAYANAKA)**



**BEST CHOREOGRAPHY:
TOILET: EK PREM KATHA
(SONG: GORI TU LATTH
MAAR)**





**BEST SPECIAL
EFFECTS:
BAAHUBALI: THE
CONCLUSION**

**BEST PLAYBACK
SINGER (MALE):
YESUDAS FOR 'POYI
MARANJA KAALAM'
(VISWASAPOORVAM
MANSOOR)**



**BEST HINDI FILM:
NEWTON**



**BEST PLAYBACK
SINGER (FEMALE):
SHASHA TIRUPATI
FOR 'VAAN
VARUVAN'
(KAATRU
VELIYIDAI)**

**BEST MARATHI FILM:
KACCHA NIMBU**



SALAAM INDIA

AT 35, MC MARY KOM PUNCHED HER WAY TO A RECORD SIXTH WORLD TITLE, BECOMING THE MOST SUCCESSFUL FEMALE BOXER IN THE HISTORY OF THE WORLD CHAMPIONSHIPS. IN HER COMEBACK YEAR TO THE SPORT, MARY ALSO WON GOLDS AT THE COMMONWEALTH GAMES AND THE INTERNATIONAL SILESIA BOXING CHAMPIONSHIP IN POLAND.



“MY DREAM WAS TO BECOME A WORLD CHAMPION AGAIN. I WORKED VERY HARD FOR IT. I AM A MOTHER OF THREE I HAD SEVERAL RESPONSIBILITIES. THE GOVERNMENT ALSO GAVE ME AN EXTRA RESPONSIBILITY BY NAMING ME MEMBER OF PARLIAMENT BUT I NEVER STOPPED TRAINING.”

- MARY KOM



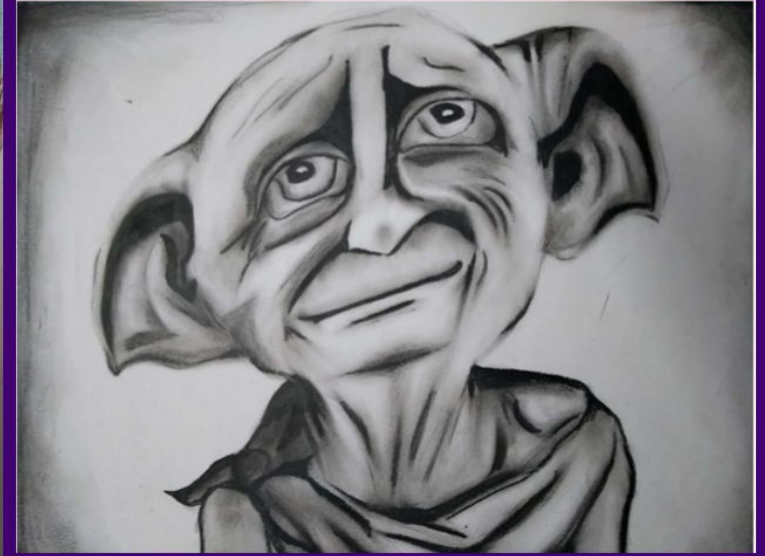
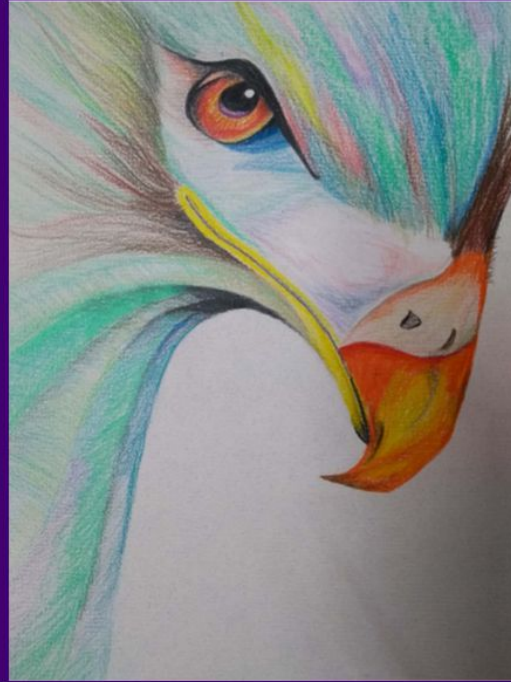
HIMA DAS' HISTORIC GOLD

WHILE NO ONE WAS WATCHING, 18-YEAR-OLD INDIAN RUNNER HIMA DAS SPURTED TO A HISTORIC GOLD AT THE IAAF WORLD U20 CHAMPIONSHIP. SHE BECAME THE FIRST-EVER INDIAN WOMAN TO WIN AN ATHLETICS GOLD ON THE INTERNATIONAL STAGE. THE ASSAMESE SPRINT STAR MADE INDIA PROUD, AND EVERYONE FROM THE PRESIDENT TO BOLLYWOOD CELEBRITIES HAILED HER FEAT.

Cultural Feast



Maitreyee Kedar
TE EnTC
(2018-19)



Pallavi Ner
SE EnTC
(2018-19)



Rinku Patil

TE EnTC (2018-19)

rinkupatil.blogspot.com



Ritu Sarwade

BE EnTC (2018-19)

Sahityam

दुसरो के बोल दोहराने से महान नहीं कहलायेगा,
कब तक तू दूसरों की कामयाबी से अपना मन
बेहलायेगा,
तू भी अपने सफर पर नकिल जा,
चुनौतियाँ तो देगी दस्तक लेकनि तू बना डरे चलते
चला जा,
चुनौतियाँ ये परवत हैं इनके मस्तक पर चढ़ाई करते
चला जा,
शखिर पे पोहोचते ही इंसान तो दूर चुनौतीभी तेरे बोल
दोहराएगा.

rrd_writes
Rajdeep Dwivedi
BE EnTC (2018-19)

बघा पटतंय का?
उघडे करून डोळे पहा तुम्ही जरा,
सांगा..! पटतंय का तुम्हाला ?
सूर्याकडे पाहून वचारा स्वतःला;
आहे तो 'तेजस्वी' क, आग ओकणारा नरिंदयी गोळा....!
फुल गुलाबाचे पाहिले, तर खूप सुंदर आहे,
नाहीतर, काट्यांचे भले मोठे कुंपण आहे....!
समजून घेतलं आयुष्याला तर
प्रत्येक वळण सोपं आहे.
नाहीतर, गुंतागुंत येथे वाढतच आहे....!
मानलं तर आपण सारे "खास" आहोत.
नाहीतर, सर्वसामान्य आहोत....!
पाण्याचा पेला असतो अर्धा भरलेला
आणि असतो अर्धा रकामा....!
मानल तर झोपडीतही 'लखलखाट' आहे,
नाहीतर, बंगल्यातही अंधकार आहे....!
अनुभवलं तर प्रत्येक क्षणात सुख आहे.
नाहीतर, सारे क्षण नरिंथक आहेत....!
दविस सगळ्यांसाठी एकच आहे.
जगलो तर 'स्वर्ग' नाहीतर, नर्क आहे..!
पाहिलं तर आयुष्य जन्मोजन्मीचं खेळ आहे.
नाहीतर जीवन क्षणभंगुर आहे!
बघा पटतंय का?
मानलं तर दगडातही 'देव' आहे.
नाहीतर, देवही दगड आहे..!

Rinku Patil
TE EnTC
(2018-19)
rinkupatil.blogspot.com

I haven't had the experience of travelling through trains. But recently I did. And as always the train was off time. So, I decided to observe things. I observed a middle aged man looking at a bottle, probably wondering if its half filled or half empty.

A small teenage girl strolling through the unclear crowd, trying to find a perfect place to sit down and relax.

An elderly couple patiently waiting on a desk, remembering all their past travelling experiences, sharing love in its purest form.

100's of people bending down by the corner, waiting for the train to arrive, so desperately.

A beggar asking for money, so he could get some food. His eyes were filled with equal amounts of hope and despair. Probably the only guy there who was this honest with themselves. The announcement lady, making annoyingly inaccurate predictions of when the trains would arrive. The vendors, making that weird sound and laughing as if they know what's going on. A disabled woman getting a help of a stranger.

And among all of them, I was the only one observing. Observing everything. Observing everyone. Staring through the spaces. Sharing awkward glances. And with all of this I realized a thing. With every moment passing by, the world is getting colder.

The irony of life is that in today's era we are closer than ever before yet so far away, further than ever before. All we could do, is take out some time for ourselves in this hell of an amazing life, and observe.

Ajinkya Ghalle
SE EwTC (2018-19)

मेरी चाहत का इक़रार तो करती मेरी मुस्कूराहटे है
लेकनि तुम अनदेखा कर देते हो यह ही समझ के
की मुस्कुराना तो मेरी आदत है
तुझे शब्दों में बयान करने की तो बोहोत चाहत है
लेकनि शब्द भूला देती तेरी मुस्कराहट है

rrd_writes
Rajdeep Dwivedi
BE EwTC (2018-19)

TCS Recruits

BE EnTC

Abhay Yadav

Aboli Shastri

Aishwarya Jahagirdar

Anand Parande

Kshitija Shende

Mohan Toshniwal

Neha Patil

Neha Verma

Pankaj Shidhaye

Pranita Shinde

Pratiksha Hivarekar

Ravikumar Kurhade

Ritu Sarwade

Sanjivani Kawade

Satyam Bang

Saurabh Kabra

Shital Kulkarni

Shweta Rawas

Sumit Patil

Swamini Ghode

Swapnil Pimple

Syed Iliyas Alam Qadri

Tejas Deshpande

Vaibhav Ganjare

Varun Kulkarni

Yashodeep Kacholiya

ME EnTC

Shweta Gaikwad

Shubham Toshniwal

Nupur Somvanshi

Vishal Hadaltikar

The background of the slide features a light blue background with a row of silhouettes of business professionals in suits, some holding briefcases or talking on mobile phones.

Siemens Recruits

Shweta Modak

Bhagyashri Narule

Wipro Recruits

Nishigandha Bhagunde

Sainath Ebitwar

Abhishek Chopade

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TEESA Council

About Us

TEESA

In my opinion, Telecommunication is a very dynamic branch of engineering deriving its base from core of electronics. Everyday one can find something new or updated in it. It's a continuous loop of upgradations in this sector where each milestone paves a way for tomorrow's another advancement. In this world of unsettling quest for technological supremacy, an engineer should never lag behind what is being in trend today. Thus it's a very little step that TEESA Council could take in helping our fellow students to get acquainted with present technologies, their worldwide real life applications, informative theory etc. To add to it a pinch of excitement and fun, we have tried to put in some other sections as well in the E-magazine. We hope that all students get benefited from it. I appeal them to please share a honest feedback with us and help us to do even better...!

Anand Parande
General Secretary
BE ENTC (2018-19)

For any queries, suggestions or feedback -
teesa@geca.ac.in