



SR
Engineering
College
Innovation . Creativity . Entrepreneurship

Ananthasagar | Hasanparthy | Warangal | TS - 506 001

ELECTROVORTEX

NEWSLETTER

Volume 01 | Issue 29 | January - June 2021

VISION OF INSTITUTION

*To be among the Top 20
Private Engineering
Institutes in India by 2020*

MISSION OF INSTITUTION

M1: Design and implement a curriculum that equips students with professional and life skills.

M2: Recruit, develop and retain outstanding faculty to achieve academic excellence.

M3: Promote and undertake quality research in thrust areas of science and technology.

M4: Collaborate with industry and academia to meet the changing needs of society.

M5: Foster innovation and cultivate the spirit of entrepreneurship among students.

Vision of the ECE Department

*To academically outstand in the field
of Electronics and Communication
Engineering education.*

Mission of the ECE Department:

M1: Build Electronics and Communication Engineering knowledge in students by implementing novel educational experiences.

M2: Develop effective instructional infrastructural resources.

M3: Develop Technology Entrepreneurship skills through interdisciplinary learning.

M4: Develop community through service, consulting and research activities.



PEO of the ECE Department:

The Electronics and Communication Engineering graduates from S R Engineering College, Warangal are expected to:

PEO1: Create innovative products in the field of Electronics and Communication Engineering.

PEO2: Pursue higher education or professional development courses for life-long learning.

PEO3: Develop entrepreneurial mindset among students and support community building.



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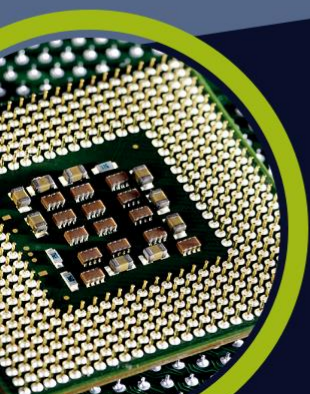




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Profile of ECE Department

- ❖ Department of Electronics and Communication Engineering (ECE) was started in the year 2002. The department offers 4 years under graduate (UG) program in B. Tech ECE and 2 years post graduate (PG) program in M. Tech Embedded Systems and Electronics Design Technology. The current student intake for UG program is 180 and PG program is 54.
- ❖ The department has experienced, qualified, dedicated, and trained faculty with deep sense of commitment towards the students and institution. The department has well equipped and state of the art laboratories for both UG & PG programs. The department has its own vision and mission at par with the vision and mission of the institute.
- ❖ The department of ECE is accredited by NBA under Tier-I in 2018, New Delhi and NAAC Bengaluru.

Highlights of the department

- ❖ Faculty have published several research publications which are cited in Web of Science, Scopus, and Google scholar.
- ❖ Faculty have published several patents in their domain.
- ❖ Training for placement is offered in the department along with mock interviews by Alumni who are well placed.
- ❖ In the year 2018, the Center for Embedded Systems and Internet of Things lab was founded.
- ❖ We have been voted the Best Engineering College in town for ECE due to our excellent career chances and 100% placement rate.

Program Outcomes (POs):

- ❖ **PO1: Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- ❖ **PO2: Problem analysis:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- ❖ **PO3: Design/Development of Solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for public health and safety, and cultural, societal, and environmental considerations.
- ❖ **PO4: Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- ❖ **PO5: Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
- ❖ **PO6: The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- ❖ **PO7: Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- ❖ **PO8: Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- ❖ **PO9: Individual and teamwork:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- ❖ **PO10: Communication:** Communicate effectively on complex engineering activities with the engineering community and with the society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- ❖ **PO11: Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- ❖ **PO12: Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Program Specific Outcomes (PSOs):

- ❖ **PSO's 01:** Apply mathematical foundations, electronic principles and computer fundamentals in the modeling and design of electronic-based systems in a way that demonstrates comprehension of the tradeoffs involving design choices.
- ❖ **PSO's 02:** Demonstrate ideas, methodologies with new cutting-edge technologies using system software for product development starting from the lowest level of physical devices to the top level of application development.

Activities of the department:

Programs Conducted:

- ✓ A One Week Refresher Program on “**Effective Teaching Skills for Outcome Based Engineering Education (Phase-II)**”, Sponsored by AICTE & ISTE, Organized by ECE Dept, SREC. From 01-03-2021 to 06-03-2021.
- ✓ A National Seminar on “**Introspection to Internet of Things**”, Organized by Department of ECE & IETE Warangal on 24-04-2021.
- ✓ Virtual seminar on “**Internet of Things in Healthcare**”, Organized by Dept. of ECE & ICT Academy on 05-06-2021.

Faculty publications:

International/national journals:

- ✓ Ajayan, J., Nirmal, D., Tayal, S., Bhattacharya, S., Arivazhagan, L., Fletcher, A. A., ... & Ajitha, D. (2021). **Nanosheet field effect transistors-A next generation device to keep Moore's law alive: An intensive study.** Microelectronics Journal, 114, 105141.
- ✓ Kumar, J. S., Nirmal, D., Hooda, M. K., Singh, S., Ajayan, J., & Arivazhagan, L. (2021). **Intensive study of field-plated AlGaN/GaN HEMT on silicon substrate for high power RF applications.** Silicon, 14(8), 4277-4282.
- ✓ Karthikeyan, A., Prakasam, P., Karthik, S., Ajayan, J., & Sai Gokul, S. (2021). **Automata Theory-based Energy Efficient Area Algorithm for an Optimal Solution in Wireless Sensor Networks.** Wireless Personal Communications, 120(2), 1125-1143.
- ✓ Sridevi, R., Charles Pravin, J., Ramesh Babu, A., & Ajayan, J. (2021). **Lowering the Schottky barrier height by titanium contact for high-drain current in mono-layer MoS2 transistor.** Journal of Electronic Materials, 50(6), 3295-3301.
- ✓ Ajayan, J., Nirmal, D., Mathew, R., Kurian, D., Mohankumar, P., Arivazhagan, L., & Ajitha, D. (2021). **A critical review of design and fabrication challenges in InP HEMTs for future terahertz frequency applications.** Materials Science in Semiconductor Processing, 128, 105753

- ✓ Murugapandiyan, P., Nirmal, D., Ajayan, J., Varghese, A., & Ramkumar, N. (2021). **Investigation of influence of SiN and SiO₂ passivation in gate field plate double heterojunction Al_{0.3}Ga_{0.7}N/GaN/Al_{0.04}Ga_{0.96}N high electron mobility transistors.** Silicon, 14(4), 1421-1429.
- ✓ Tayal, S., Ajayan, J., Joseph, L. M. I., Tarunkumar, J., Nirmal, D., Jena, B., & Nandi, A. (2021). **A comprehensive investigation of vertically stacked silicon nanosheet field effect transistors: an analog/rf perspective.** Silicon, 14(7), 3543-3550.
- ✓ Tayal, S., Vibhu, G., Meena, S., & Gupta, R. (2021). **Optimization of device dimensions of high-k gate dielectric based dg-tfet for improved analog/rf performance.** Silicon, 14(7), 3515-3521.
- ✓ Bhattarai, S., Sharma, A., Muchahary, D., Gogoi, D., & Das, T. D. (2021). **Numerical simulation study for efficiency enhancement of doubly graded perovskite solar cell.** Optical Materials, 118, 111285.
- ✓ Bhattarai, S., Sharma, A., Muchahary, D., Gogoi, M., & Das, T. D. (2021). **Carrier transport layer free perovskite solar cell for enhancing the efficiency: A simulation study.** Optik, 243, 167492.
- ✓ Prasad, C. R., & Bojja, P. (2021). **A non-linear mathematical model-based routing protocol for WBAN-based health-care systems.** International Journal of Pervasive Computing and Communications.
- ✓ Ramchandrarao, P., Prasad, R., Chitti, S., Merugu, S., & Tarun Kumar, J. (2021). **COVID-19 Patient Health Management System Using IoT.** In Next Generation of Internet of Things (pp. 635-646). Springer, Singapore.
- ✓ Das, S., Bhattacharya, S., Das, D., & Rahaman, H. (2021). **A survey on pristine and intercalation doped graphene nanoribbon interconnect for future VLSI circuits.** AIMS Materials Science, 8(2), 247-260.
- ✓ Sathish, B. S., Ganesan, P., Leo Joseph, L. M. I., Palani, K., & Murugesan, R. (2021). **A two-level approach to color space-based image segmentation using genetic algorithm and feed-forward neural network.** In Advances in Artificial Intelligence and Data Engineering (pp. 67-78). Springer, Singapore.
- ✓ Ganesan, P., Sathish, B. S., Leo Joseph, L. M. I., Subramanian, K. M., & Murugesan, R. (2021). **The Impact of Distance Measures in K-Means Clustering Algorithm for Natural Color Images.** In Advances in Artificial Intelligence and Data Engineering (pp. 947-963). Springer, Singapore.
- ✓ Kollem, S., Reddy, K. R., & Rao, D. S. (2021). **Improved partial differential equation-based total variation approach to non-subsampled contourlet transform for medical image denoising.** Multimedia Tools and Applications, 80(2), 2663-2689.
- ✓ Kollem, S., Reddy, K. R., & Rao, D. S. (2021). **An optimized SVM based possibilistic fuzzy c-means clustering algorithm for tumor segmentation.** Multimedia Tools and Applications, 80(1), 409-437.

- ✓ Rajapitamahuni, A. K., Thoutam, L. R., Ranga, P., Krishnamoorthy, S., & Jalan, B. (2021). **Impurity band conduction in Si-doped β -Ga₂O₃ films**. Applied Physics Letters, 118(7), 072105.
- ✓ Ahmed, S. M., Shaik, F., Gunjan, V. K., & Ali, M. Y. (2021). **An Organized Approach for Analysis of Diabetic Nephropathy Images Using Watershed and Contrast Adaptive Thresholding**. In Modern Approaches in Machine Learning and Cognitive Science: A Walkthrough (pp. 53-67). Springer, Cham.
- ✓ Ahmed, S. M., Shaik, F., Gunjan, V. K., & Ali, M. Y. (2021). **A Literature Survey on Identification of Asthma Using Different Classifier and Clustering Techniques**. Modern Approaches in Machine Learning and Cognitive Science: A Walkthrough, 69-80.

Patents published:

- ✓ Dr. V. Malathy got a patent entitled “**Application of self Healing Techniques in Wireless Sensor Networks**”.
- ✓ Dr. J. Ajayan got a patent entitled “**Flying vehicle abetted network communication tower**”.

Books published:

- ✓ Dr. V. Malathy published a book on “**Antennas and Microwave Engineering**” in the Charulatha Publications in 2021 February ISBN no: 978-93-90967-10-0.
- ✓ Dr. V. Malathy published a book on “**Analytical Methods and Instrumentation**” in the Charulatha Publications in 2021 February ISBN: 978-93-90967-04-9.
- ✓ Dr. V. Malathy published a book on “**Transmission and Distribution**” in the Charulatha Publications in 2021 March ISBN no: 978-93-90967-00-1.
- ✓ Dr. V. Malathy published a book on “**Transmission and Distribution**” in the Charulatha Publications in 2021 March ISBN no: 978-93-90967-00-1.
- ✓ Dr. Shubham Tayal published a book on “**High-k Materials in Multi-Gate FET Devices**” in the CRC Press (Taylor & Francis) in 2021 September ISBN no: 9780367639686.
- ✓ Dr. Shubham Tayal published a book on “**Computational Technologies in Materials Science**” in the CRC Press (Taylor & Francis) in 2021 October ISBN no: 9780367640576.
- ✓ Dr. Shubham Tayal published a book on “**Internet of Things Energy, Industry, and Healthcare**” in the CRC Press (Taylor & Francis) in 2021 October ISBN no: 9780367686529.
- ✓ Dr. J. Ajayan published a book on “**Semiconductor devices and technologies for future ultra low power electronics**” in the CRC Press (Taylor & Francis) in 2021 December ISBN no: 9781032061610.

Workshops/FDPs/Trainings attended:

- ✓ Mr. Ch. Rajendra Prasad attended a Online STTP on AICTE Training and Learning (ATAL) Academy Online FDP on **“Immersive Virtual Reality”** from 04.01.2021 to 08.01.2021 organized by SR Engineering College, Warangal, India.
- ✓ Dr. Shubham Tayal attended a online STTP on **“ICT Tools for teaching and learning”**, from 24.05.2021 to 28.05.2021 organized by National Institute of Technical Teachers' Training and Research (NITTTR), Kolkata, India.
- ✓ Dr. Shubham Tayal attended a one week online Short Term Training Program on **“Emerging Nanoscale Devices, Circuits and Its Applications (NANODC-21)”** from 10.05.2021 to 14.05.2021 organized by Department of Electronics & Communication Engineering, Delhi Technological University, Delhi, India.
- ✓ Mr. Yalabaka Srikanth attended Online FDP on AICTE Training And Learning (ATAL) Academy Online FDP on **“Internet of Things (IoT)”** from 04.01.2021 to 08.01.2021 organized by Jawaharlal Nehru National College of Engineering.
- ✓ Mr. Sreedhar Reddy Kollem attended a One Week Online Short Term Training Programme(STTP) on **“Artificial Intelligence and Machine Learning for Signal Processing”** from 24.05.2021 to 29.05.2021 organized by Department of Electronics and Telecommunication Engineering, Trident Academy of Technology, Bhubaneswar, Odisha, India.
- ✓ Mr. Sreedhar Reddy Kollem attended STTP on One Week Short Term Training Programme through ICT Mode on **“Image Processing using MATLAB”** from 24.05.2021 to 28.05.2021 organized by National Institute of Technical Teachers' Training and Research (NITTTR), Kolkata, India
- ✓ Dr. Leo Joseph attended a One Week Online Short Term Training Programme(STTP) on **“Artificial Intelligence and Machine Learning for Signal Processing”** from 24.05.2021 to 29.05.2021 organized by Department of Electronics and Telecommunication Engineering, Trident Academy of Technology, Bhubaneswar, Odisha, India.
- ✓ Dr. Leo Joseph attended a AICTE Sponsored Two Weeks FDP on **“Responsibility of Higher Education Institutions Under AICTE In Implementing Sustainable Development Goals”** from 23-02-2021 organized by Sri Ram Institute of Technology, Chennai.
- ✓ Dr. Leo Joseph attended Refresher Program on AICTE-ISTE Sponsored Refresher Program on **“Effective Teaching Skills for Outcome Based Engineering Education”** from 01-03-2021 to 06-03-2021 organized by SR Engineering College, Warangal, India.
- ✓ Mr. B. Girirajan attended Online FDP on Faculty development programme in **“Entrepreneurship”** from 30.03.2021 to 10.04.2021 organized by CRISP.
- ✓ Mr. P. Ramchander Rao attended Online STTP on One Week Online Short Term Training Programme(STTP) on **“Artificial Intelligence and Machine Learning for Signal Processing”** from 24.05.2021 to 29.05.2021 organized by Department of ETE, Trident Academy of Technology, Bhubaneswar, Odisha, India.

- ✓ Mr. A Chakradhar attended Online FDP on Two-week Online Faculty Development Programme on **“RISC-V VLSI Implementation Flow: RTL2GDS”** from 27.03.2021 to 10.04.2021 organized by Electronics and ICT Academies.
- ✓ Mr. A Chakradhar attended Workshop on Five Days Online Hands-on Workshop on **“Next-Generation Nano-electronics Devices, Circuits and its Applications using EDA tools”** from 24.02.2021 to 28.02.2021 organized by Department of Electronics and Communication Engineering, IIT Bhagalpur.
- ✓ Mr. A Chakradhar attended Workshop on Five Days Online Hands-on Workshop on **“Metamaterial and its Applications using HFSS (MAU-HFSS-2021)”** from 27.01.2021 to 31.01.2021 organized by Department of Electronics and Communication Engineering, IIT Bhagalpur
- ✓ Mr. A Chakradhar attended FDP on One-Week Faculty Development Program on **“Introduction to Data Science using Python (Level A)”** from 15.03.2021 to 19.03.2021 organized by Delta Sigma Technologies.
- ✓ Mr. A Chakradhar attended Workshop on **“Next-Generation Nano-electronics Devices, Circuits and its Applications using EDA tools”** from 24-28 February 2021 organized by Dept. of ECE, IIT Bhagalpur
- ✓ Mr. A Chakradhar attended Workshop on Five Days Online Handson Workshop on **“Metamaterial and its Applications using HFSS (MAU-HFSS-2021)”** from 27-31 January 2021 organized by Dept. of ECE, IIT Bhagalpur
- ✓ Ms. N. Shilpa attended STTP on **“AI MEMO Millimeter (mm) Wave and Massive MIMO Applications for 5G Wireless Networks using AI”** from 25-01-2021 to 01-02-2021 organized by GRIET.
- ✓ Mr. S. Srinivas attended STTP on **“PYTHON for 5G NOMA, Cooperative and Cognitive Radio”** from 12-01-2021 organized by Dept.of EE, IIT Khanpur
- ✓ Mr. P. Ramchander Rao attended Orientation Program on **“Advanced VLSI Design using Microwind”** from 06-05-2021 to 12-05-2021 organized by Dr. Rajendra Gode Institute of Technology & Research , Amravati, Mahrastra

Student achievements:

- ✓ 2017 Batch Student **Shashi Phalgun** placed in **CISCO** with package of **14 LPA**.



Faculty achievements:

- ✓ Congratulations to **Dr. K. Sreedhar Reddy**, Assistant Professor in the department of Electronics & Communication Engineering is awarded with Ph.D., Degree from JNTUH, Hyderabad.



- ✓ Congratulations to **Dr. Ch. Rajendra Prasad**, Assistant Professor in the department of Electronics & Communication Engineering is awarded with Ph.D., Degree from KL University, Guntur.



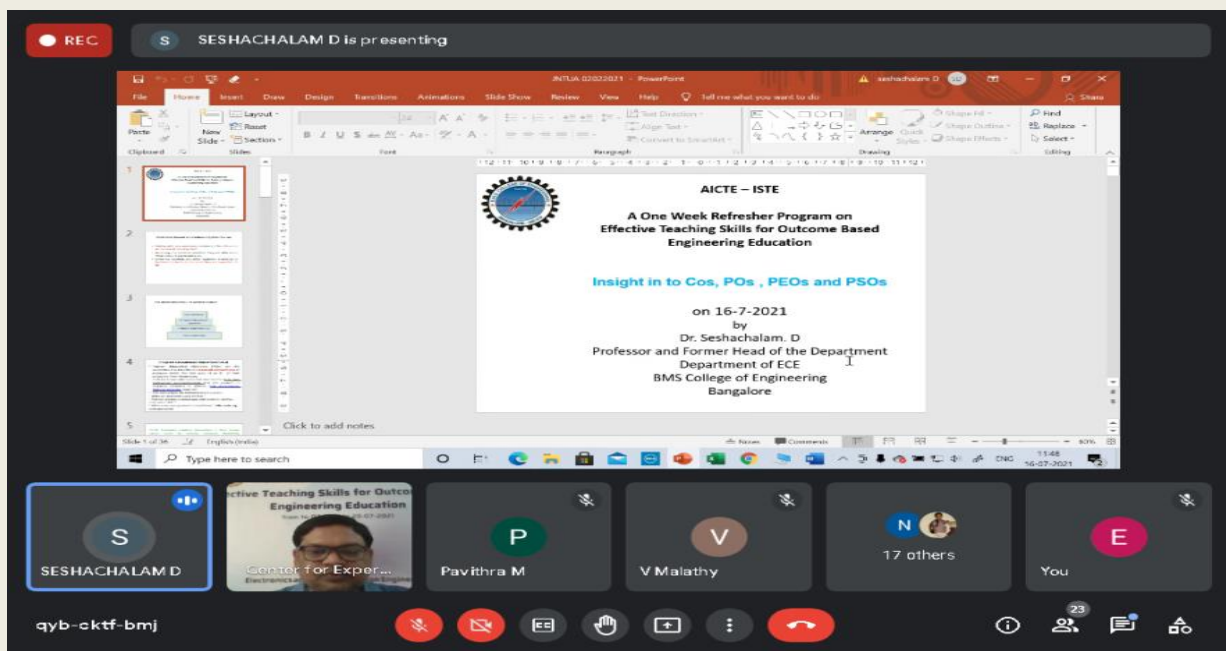


Placement details:

The following are the placements taken place between January to June 2021

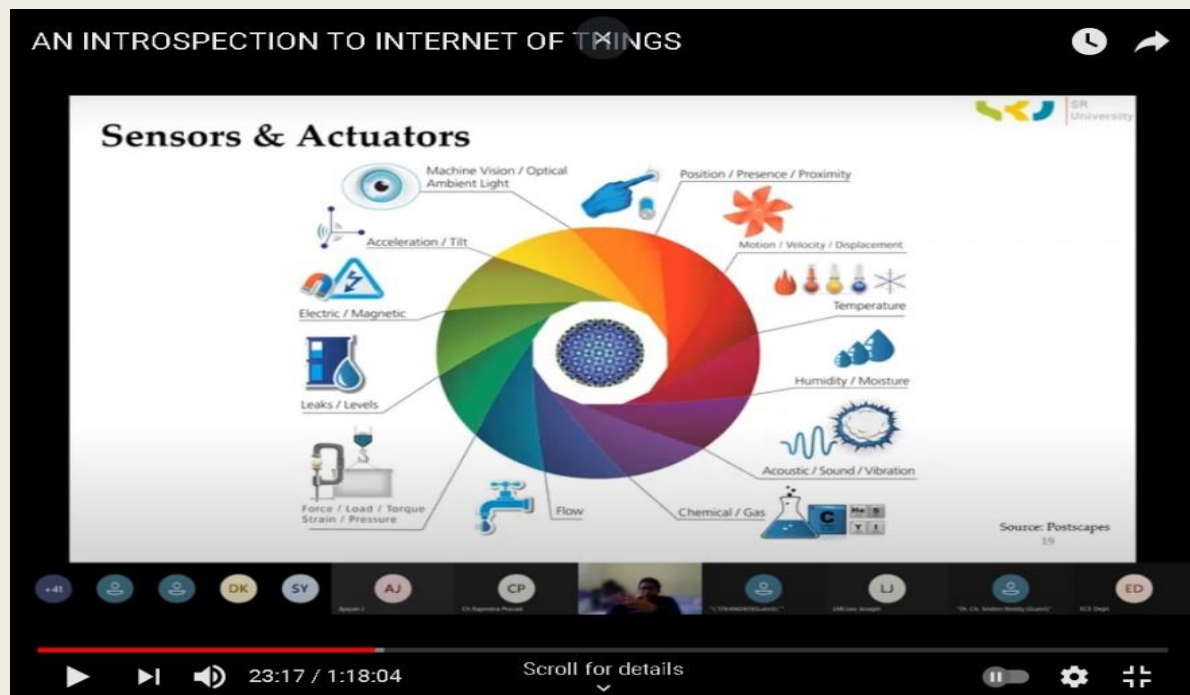
S. No.	Name of the Company	No. of Students Placed	Package
1	CISCO	1	14
2	CTS	15	3.5
3	DXC	27	3.6
4	Edupolis (Unschool)	1	5
5	Hexaware	1	3.6
6	ICCS	5	1.8
7	Infosys	14	3.6
8	NTT Data	1	3.5
9	Savantis	8	2.2
10	TCS Ninja	12	3.36
11	Tvarana Software Solutions	1	3.6
12	Wonjin	4	2
13	Woosu	1	1.4

Photographs of various activities:

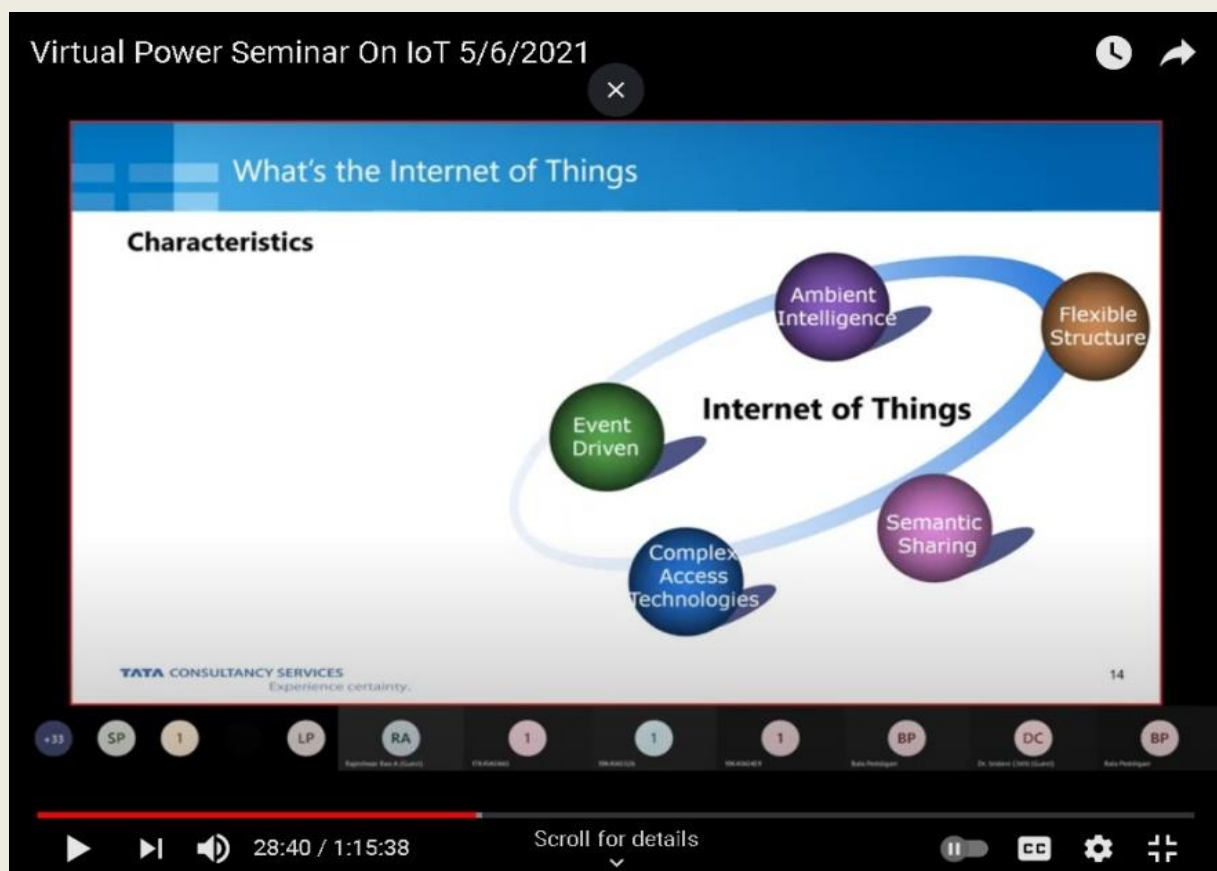


A One Week Refresher Program on Effective Teaching Skills for Outcome Based Engineering Education (Phase-II).
Sponsored by AICTE & ISTE, Organized by ECE Dept, SREC. From 01-03-2021 to 06-03-2021

Photographs of various activities:



A National Seminar On *Introspection to Internet of Things*, Organized by Department of ECE & IETE Warangal on 24-04-2021



Virtual seminar on *Internet of Things in Healthcare* Organized by Dept. of ECE & ICT Academy on 05-06-2021