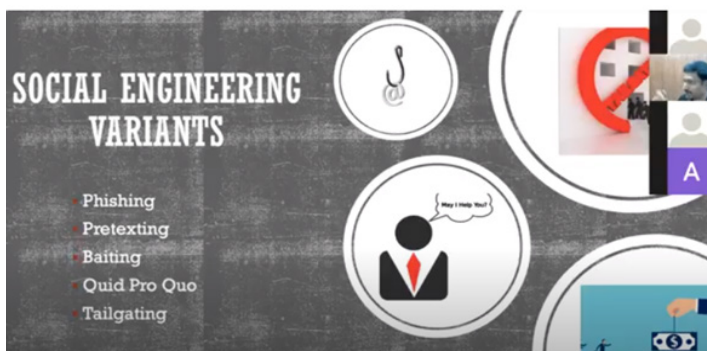




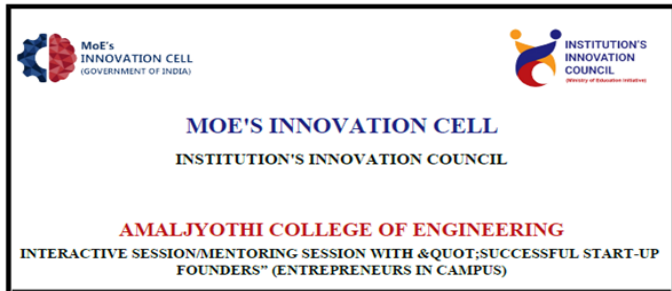
**DEC 2021**

## Cyber Security and Forensics

The Department successfully conducted KTU sponsored Online FDP on “Cyber Security and Forensics” from 01-09-2021 to 03-09-2021 jointly organized by ACM Kottayam Professional Chapter and Centre for Continuing Education (CCE), Amal Jyothi College of Engineering, Kanjirappally. Program Coordinator & ACM Kottayam Chapter Chair was Prof. Manoj T Joy, Course Coordinator was Ms. Neenu R, CCE Coordinator was Ms. Shiney Thomas. The programme discussed about cyber forensics, Advanced Intrusion Detection Systems in Cloud Computing, cloud security, various threats etc. The resource persons for the programme were Dr Preeti Mishra, Mr. Sreekanth R Iyer, IBM, Dr. Arun Cyril Jose, IIIT, Kottayam, Adarsh Nair, UST Global, Prof. Dr. Vinod P, Dr. J. Jeba Sonia.



## Successful Startup Founders (Entrepreneurs in Campus)



Dr. Jeba Sonia J, Ms. Anishamol Abraham organized a webinar on the topic "Successful Startup Founders (Entrepreneurs in Campus)" on 18th August 2021 as a part of IIC activity of AJCE. The resource person is Mr. Anil P Jose, Director, Digiora Technologies, Kochi, (Alumni of AJCE). The objective of the webinar is to make the students to understand how to start their own startup companies, becoming entrepreneur. Since it was an interactive session, students asked their doubts to the resource person. They got a clear idea about how to start their own company.

### How to Plan for a Startup and its Legal & Ethical Steps

Ms. Anishamol Abraham, Dr. Jeba Sonia J organized an online session on "How to Plan for a Startup and its Legal and Ethical Steps" on 30th August 2021 as a part IIC activity of AJCE. The resource person is Prof. Sherin Sam Jose (CEO, Startup Valley, Amal Jyothi TBI). This session is focussing on encouraging students to involve startup activities inside and outside campus. It helped them to plan for startup and understanding the step for it.

## COGNITIVE AND BRAIN COMPUTING INTERFACES


Dr. Jina Varghese conducted a webinar, on 'COGNITIVE AND BRAIN COMPUTING INTERFACES' in association with ACM, AJCE on 14-9-2021 at 2.30pm to 3.30pm. Resource person was Dr. Elizabeth Sherly, Director, IITMK, Trivandrum. Meghana and Gopika were the student coordinators. Brain computer interfaces (BCIs) have been applied to sensorimotor systems for many years. However, BCI technology has broad potential beyond sensorimotor systems.

ACM AJCE PRESENTS

Webinar on

**COGNITIVE AND BRAIN COMPUTING INTERFACES**

Resource Person



Dr. Elizabeth Sherly  
Director, IITMK, Trivandrum

14 SEPT 2021 | 2:30 PM - 3:30 PM


Register at  
[bit.ly/acm-cbci](https://bit.ly/acm-cbci)

Faculty coordinator: Dr. Jina Varghese 9544135560  
Student coordinators: Meghana 8547427115 | Gopika 7306219065


Limited seats only

## Awareness on Cyber Security

Mr. Syam Gopi invited as the resource person for the first-year induction program of Saintgits College of Engineering (Autonomous). The Ethics Committee of the college has decided to conduct a lecture on the topic: 'Awareness on Cyber Security.' The lecture was scheduled on 11th November 2021 from 2.00 p.m. to 3.00 p.m. The topic was Awareness on Cyber Security – Cyber Laws & Online Safety.

 **SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)**

**STUDENT INDUCTION PROGRAMME 2021-'22**



**Awareness on Cyber Security**  
- Cyber Laws & Online Safety

**Mr. SYAM GOPI**  
Elite Member - Kerala Police Cyberdome  
Senior Member - ACM

11 November 2021 2 PM - 3 PM

LEARN . GROW . EXCEL

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## **FDP/Courses Attended / Conducted**

- Anju Joseph & Neethu C Sekhar successfully completed the 9-week FDP “Artificial Intelligence with Machine Learning in Java”, organized by Oracle Academy.
- Ms. Bini M Issac attended a one-week FDP on “Management of Software systems” from 22nd to 27th November organized by Dept of CSE, College of Engineering, Trivandrum
- Fr. Siju John attended a one-week faculty development program on “Recent Innovative Trends in Biomedical Engineering & Technology” during December 13-17, 2021, Organized by Biomedical Engineering of Mepco Schlenk Engineering College, Sivakasi.
- Coursera “Machine Learning for All” (4 weeks) completed by Ms. Neenu R and Ms. Elisabeth Thomas
- Dr. Jeba Sonia J successfully completed a 30 hours Live online Instructor-led training on “Applied Deep Learning & Computer Vision on Image and Video” jointly conducted by E-Cell IIT Hyderabad & EduxLabs from 8 to 19th September 2021.
- Ms. Shiney Thomas, Assoc. Professor, CSE attended AICTE sponsored Online STTP on “Artificial Intelligence and Applications” from 23-08-2021 to 28-08-2021 (Term-3) organized by the Department of Computer Science & Engineering, Marian Engineering College, Tvm.
- Ms. Anishamol Abraham, Ms. Elisabeth Thomas, Ms. Niya Joseph, Ms. Neethu C Sekhar, Dr. Jeba Sonia J, Ms. Anju Joseph, Ms. Tintu Alphonsa Thomas, Asst. Professor, CSE attended AICTE sponsored Online STTP on “Artificial Intelligence and Applications” from 9-08-2021 to 14-08-2021 (Term-2) organized by the Department of Computer Science & Engineering, Marian Engineering College, TVM
- Dr. Jina Varghese has undergone Innovation Ambassador training conducted by MoE’s Innovation Cell & AICTE during the period from 5th August - 31st August 2021 in online mode.

## **Seminar /Webinar / workshop Attended /Conducted**

- Neethu C Sekhar has participated in the Global Tech Summit on ‘Career Advancement through Red Hat Technologies | Cloud and Automation’ jointly conducted by Amal Jyothi College of Engineering Kanjirappally and Marian College Kuttikanam in association with Red Hat and ipsr solutions limited on 09 October 2021.
- Fr. Siju John has participated in the webinar on “To write a quality research article for SCI indexed journals” organized by PEC-NISP CELL & PEC-IIS on 27-08-2021
- Fr Siju John attended a five days’ workshop on “Recent Trends in Medical Electronics” In association with Schmitt Centre for Biomedical Instrumentation from 22-11-2021 to 26-11-2021, organized by EEE dep AJCE.
- Ms. Resmipriya M G attended a 6-day national Online Workshop on “Resources for Research, Journal Selection and Research Productivity” from 18-23 December,2021 organized by Research and Development Cell, Providence Women’s College, Kozhikode in association with LORE & ED Research Associates.
- Dr. Jeba Sonia J attended an online session on “Modern Solutions Architect” on 29th August 2021, conducted by MultiCloud4U Academy.
- Neethu C Sekhar has participated in the Global Tech Summit on ‘Career Advancement through Red Hat Technologies | Cloud and Automation’ jointly conducted by Amal Jyothi College of Engineering Kanjirappally and Marian College Kuttikanam in association with Red Hat and ipsr solutions limited on 09 October 2021.
- Krishnalal G has attended Open-Source Summit- India 2021, organized by Open-Source Club, Saintgits College of Engineering and FOSSS ASIA from 28, June - 02, July 2021.



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## Seminar /Webinar / workshop Conducted

- The Dept. successfully conducted KTU sponsored Online FDP on “Cyber Security and Forensics” from 01-09-2021 to 03-09-2021 jointly organized by ACM Kottayam Professional Chapter and Centre for Continuing Education (CCE), Amal Jyothi College of Engineering, Kanjirappally. Program Coordinator & ACM Kottayam Chapter Chair- Prof. Manoj T Joy, Course Coordinator- Ms. Neenu R, CCE Coordinator- Ms. Shiney Thomas.
- Dr. Jeba Sonia J, Ms. Anishamol Abraham organized a webinar on the topic “Successful Start-up Founders (Entrepreneurs in Campus)” on 18th August 2021 as a part of IIC activity of AJCE. The resource person is Mr. Anil P Jose, Director, Digiora Technologies, Kochi, (Alumni of AJCE).
- Ms. Anishamol Abraham, Dr. Jeba Sonia J organized an online session on “How to Plan for a Start-up and its Legal and Ethical Steps” on 30th August 2021 as a part IIC activity of AJCE. The resource person is Prof. Sherin Sam Jose (CEO, Startup Valley, Amal Jyothi TBI).
- Dr. Jina Varghese conducted a webinar about, ‘Unravel the threats in the digital era ‘ on 6-1-2021 under ACM AJCE
- Ms. Anishamol Abraham, Ms. Elisabeth Thomas, Ms. Niya Joseph, Ms. Neethu C Sekhar, Dr. Jeba Sonia J, Ms. Anju Joseph, Ms. Tintu Alphonsa Thomas, Asst. Professor, CSE attended AICTE sponsored Online STTP on “Artificial Intelligence and Applications” from 9-08-2021 to 14-08-2021 (Term-2) organized by the Department of Computer Science & Engineering, Marian Engineering College, TVM
- Ms. Anju Joseph & Ms. Neethu C Sekhar enrolled for Oracle Academy’s FDP, Artificial Intelligence with Machine Learning in Java. They attended an online briefing session organized by Oracle Academy on 03-09-2021
- Dr. Jina Varghese conducted a webinar, on, COGNITIVE AND BRAIN COMPUTING INTERFACES in association with ACM, AJCE on 14-9-2021.

## Faculty As Resource Person

- Dr. Jeba Sonia J was the resource person for the webinar on “Future of Data Science and Business Analytics” on 07.12.2021, organized by CSE department of Mahaguru Institute of Technology, Mavelikara.

## Projects (staff / student)

- Neethu C Sekhar published an article titled “Learn the basics of Creating Visualisations with Tableau Public” in Open Source for You Magazine, November 2021
- Fr Siju John presented a paper titled “Role of Nano Materials in Bio- Medical Imaging” in international e-conference Advanced materials (ICOAM 2021) organized JP college of Arts & Science, Tenkasi held on 24th 7 25th September 2021.

## Expert talks

- Mr. Syam Gopi took an online session on” Cyber Law and Online Safety- Threats and Safeguards” as part of the student induction programme at Govt. Polytechnic College, Cherthala on 25th October 2021.
- Mr. Syam Gopi took a session on Online Safety, organized by Janamaithri Police Pampady for the students of Cross Road HS, from 2021-10-09
- Mr. Syam Gopi took an online session on Cyber Safety for Govt Polytechnic Nattakom on 2021-10-08
- Mr. Syam Gopi invited as the resource person for the first-year induction program of Saintgits College of Engineering (Autonomous), Pathamuttom

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## Paper presentation / Publications

- Fr Siju John has presented a paper entitled "Qualitative Analysis of Medical Image Encryption Based on Chaotic Maps- An Application of Data Mining" in AICTE sponsored National E-conference conducted by CSE department, P A college of Engineering and Technology, Pollachi, on 5th October to 7th October 2021.
- Neethu C Sekhar, Rosmin Augustine, Midhlaj Ahamed T K, Johny Xavier Fernandez & Serene Anna Giji (2017-21 batch) presented a paper titled "Derma-Speziale: An Image-Based Automated System for Skin Disease Identification Using CNN" at AICTE Sponsored National Conference on Smart Systems & Technologies (NCSST-2021), Marian College Trivandrum on December 16th, 2021.
- Neethu C Sekhar, Leoyon Reji, Merlin Sebastian, Nandita Suresh, Shahad C K (2017-21 Batch) presented a paper "WHAT'S NEXT? Prediction Model for Students Future Development" at AICTE Sponsored National Conference on Smart Systems & Technologies (NCSST-2021), Marian College Trivandrum on December 17th, 2021.
- Mr. Jayakrishna V, AP-CSE, Presented a paper titled "nc-eNCE Graph Grammars and Graph Rewriting P Systems" in International Conference on Membrane Computing 2021 (ICMC 2021), organized by the Chengdu University of Information Technology, Chengdu, China and by the Faculty of Informatics of the University of Debrecen, Hungary on August 25-26, 2021. Co-Author: Dr. Lisa Mathew
- Jeba Sonia J, Jina Varghese, Elisabeth Thomas presented a paper titled "Measuring COVID-19 Opinion in the Online Debate Using an Unsupervised Model" in the International Conference on Emerging Trends in Science, Engineering and Management (ICETSEM-2021) conducted by GM Institute of Technology, Karnataka held on 15th and 16th July 2021.
- Joshma Joby, Sandra Merin Thomas, Roshan Job, Robin Jose Raju (2017-21 Batch) and Dr. Arun K S published a paper titled "PneumoGAN: A GAN based Model for Pneumonia Detection" in 2nd International Conference on Advances in Computing, Communication, Embedded and Secure Systems (ACCESS), Adi Shankara Institute of Engineering and Technology, Kalady, Kerala on 2nd September 2021
- Priya Jose, Richu Mathews Jacob, Shilpa Satosh, T Sophia Varghese, Ms. Anishamol Abraham published a paper titled "CONCENTRATION DETECTION ON E-LEARNING SYSTEM" in the International Journal of Research and Analytical Reviews (IJRAR), UGC Approved (Journal No: 43602) & 5.75 Impact Factor Volume 8 Issue 3, Date of Publication: July 2021 2021-07-07
- Neethu C Sekhar published an article titled "Learn the basics of Creating Visualisations with Tableau Public" in Open Source for You Magazine, November 2021
- Jobin P Jose, Joshua Jacob Chacko, Neethu Maria Mathew, and Prof Tom Kurian published a paper titled "Face Mask Detection and Crowd Estimation Using MobileNet V2" in IRJET Vol:08 Issue:10 | October 2021
- Fr Siju John presented a paper titled "Role of Nano Materials in Bio- Medical Imaging" in international e-conference Advanced materials (ICOAM 2021) organized JP college of Arts & Science, Tenkasi held on 24th to 25th September 2021.
- Toni Veluthedathu, Fr. Siju John, Dr.S. N Kumar presented a paper titled "Security and Privacy of Cloud- and IoT-Based Medical Image Diagnosis Using Fuzzy Convolutional Neural Network in the COVID Scenario" at HEALTH CON'2021 two days national conference conducted by Shri Vaishnav Vidhyapeeth Vishwavidyalaya, INDORE, on December 16 & 17th 2021.
- Joys K Mathew, Fr. Siju John, Dr. S.N Kumar presented a paper titled "Improving the Security of Cloud-Based Medical Imaging Techniques in the COVID Scenario" at HEALTH CON'2021 two days national conference conducted by Shri Vaishnav Vidhyapeeth Vishwavidyalaya, INDORE, on December 16 & 17th 2021.

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## Paper presentation / Publications

- Ashak Achankunju Thomas, Fr. Siju John, Dr. S.N Kumar presented a paper titled "Overview of Cybersecurity in PACS and Medical Imaging – An aid in the COVID Scenario for Disease Diagnosis" at HEALTH CON'2021 two days national conference conducted by Shri Vaishnav Vidhyapeeth Vishwavidyalaya, INDORE, on December 16 & 17th 2021.
- Irine Sarah Mathew, Fr. Siju John, Dr. S.N Kumar presented a paper titled "Study of Deep Learning Algorithm in Medical Image Encryption/ Decryption for Teleradiology Application in the COVID Scenario" at HEALTH CON'2021 two days national conference conducted by Shri Vaishnav Vidhyapeeth Vishwavidyalaya, INDORE, on December 16 & 17th 2021.
- Abhinav Bavos, Fr. Siju John, Dr.S. N Kumar presented a paper titled "A Survey on Blockchain Technology towards Green IoT: Opportunities and Challenges in the COVID Scenario" at HEALTH CON'2021 two days national conference conducted by Shri Vaishnav Vidhyapeeth Vishwavidyalaya, INDORE, on December 16 & 17th 2021.
- Abhinand Krishna K, Fr. Siju John, Dr. S.N Kumar "A Study on Medical Image Fusion Algorithms for Teleradiology Application: An Urge in the COVID Scenario" at HEALTH CON'2021 two days national conference conducted by Shri Vaishnav Vidhyapeeth Vishwavidyalaya, INDORE, on December 16 & 17th 2021.
- Fr Siju John, Dr. S N Kumar presented a paper titled "Study on Medical ImageEncryption Techniques for Telemedicine Application – An Urge in the COVID Scenario" at HEALTH CON'2021 two days national conference conducted by Shri Vaishnav Vidhyapeeth Vishwavidyalaya, INDORE, on December 16 & 17th 2021.

## Student/ Staff, awards/achievements

- Ms. Fabeela Ali Rawther secured admission for PhD at KTU.
- Grace Maria Binu and Aneena Thankachan of S4 CSE A cleared the first round of ADOBE "SheCodes" internship recruitment.
- S3 CSE results (2019-23) - 20 students have 10 SGPA and 60 students have above 9 SPGA, out of 142 total.
- S1 CSE results (2020-24)- 4 students have 10 SGPA and 35 students have SGPA above 9.
- The team from AJCE, Nevin Koshy Daniel, Milan Mani Mathew, and Sreedevi S from CSE shortlisted for next round in TECHgium 5th Edition Competition on 22/11/2021 conducted by L&T Technology Services under the guidance of Dr Jeba Sonia J. The next round will be conducted on 3rd December 2021.

## Faculty as Resource Person

- Dr. Jacob John Served as Reviewer for the paper titled "Using I2P encrypted virtual tunnels for a secure and anonymous communication in VANets: I2P Vehicular Protocol (IVP)" for possible publication in the Journal Wireless Personal Communications, Springer (SCI indexed IF: 1.671)
- Dr. Jeba Sonia J was the resource person for the webinar on "Future of Data Science and Business Analytics" on 07.12.2021, organized by CSE department of Mahaguru Institute of Technology, Mavelikara.

# PLACED STUDENTS

Placement Statistics

Sl No	Name	Company 1	Company 2	Company 3	Company 4
1	ABHIJITH M K	MARLABS	WIPRO		
2	ABHINAND KRISHNA K K	QUEST GLOBAL			
3	ADARSH ROHIN V	TCS	COGNIZANT		
4	ALEX P JOSEPH	TCS			
5	ALIYA ASHRAF	INAPP	TCS	WIPRO	
6	ALLEN V TOM	TCS	QBURST	COGNIZANT	
7	AMAL ANTONY	DXC	TCS		
8	AMALU GEORGE	HTC			
9	ANANTHU ANIL	COGNIZANT			
10	ANEESHA ALEXANDER	TCS	WIPRO		
11	ANILESH K	IBS	EXPERION	COGNIZANT	
12	ANNA JOHN	QUEST GLOBAL	COGNIZANT		
13	ANOUSHKHA TRESA	COGNIZANT			
14	ARATHY V	HEXAWARE			
15	ARJUN B NAIR	PENTAGON SPACE			
16	ARJUN R	TCS	WIPRO	COGNIZANT	
17	ARVIN LUKE KOTTARATHIL	MARLABS			
18	ATHIRA JOHN	IBS			
19	AVINASH THOMAS GEORGE	TCS	WIPRO	COGNIZANT	
20	BINITTA VARGHESE	MARLABS	TCS	WIPRO	COGNIZANT
21	DEVIKA MURALI	DXC			
22	DISHNA SASI	TCS	WIPRO	COGNIZANT	
23	DIYA ANNA THOMAS	BIRLASOFT	TCS	WIPRO	EXPERION
24	DONIKA BOSE	TCS			
25	ELIZABETH STEPHEN	TCS			
26	EMIL GEORGE	VIRTUSA			
27	FREDY WILSON	TCS			
28	INDULEKHA MAHILAMONI	INAPP	WIPRO	Capgemini	
29	JAMES BABU	COGNIZANT			
30	JAMES SANO SUNIL	WIPRO	COGNIZANT		
31	JEENA K SABU	COGNIZANT			
32	JEFFIN JOSE	COGNIZANT			
33	JEMIN JOSHY	TCS			
34	JEVIN JIJU	HTC			
35	JIYA JOHN	DXC	TCS	WIPRO	
36	JOBIN JOSE	DXC	TCS	WIPRO	COGNIZANT

Sl No	Name	Company 1	Company 2	Company 3	Company 4
37	JOE JOSEPH JOIAN	INTELLECT	QBURST		
38	JOEL JOHN KANDATHIL	INFOSYS	SOTI		
39	JOSMI JOY	COGNIZANT			
40	JOYS K MATHEW	TCS	WIPRO		
41	KEVIN TONY	QBURST	COGNIZANT		
42	KRIPA SUSAN SHAJI	TCS	WIPRO		
43	LINU JOSEPH	TCS			
44	LIYA ELSA MATHEW	WIPRO	EXPERION		
45	MALAVIKA ARUN	TCS	WIPRO		
46	MAREENA ABRAHAM	HTC			
47	MARIA ALEX	INTELLECT			
48	MATHEW SABU	INAPP	WIPRO		
49	MEERA M NAIR	DXC			
50	MILAN MANI MATHEW	DXC			
51	MINNU SABU	DXC			
52	NAVEEN JOHN	WIPRO	COGNIZANT		
53	NEHA ANIL	DXC			
54	NESTIN C SOLOMON	COGNIZANT			
55	NEVIN KOSHY DANIEL	GUIDEHOUSE			
56	NIJO NOBLE	DXC	COGNIZANT		
57	NITHEESH D	WIPRO			
58	NIVYA RAJ	HEXAWARE	WIPRO		
59	NOEL ABI KUNJACHAN	INTELLECT	COGNIZANT		
60	OLIVIA ABRAHAM	TCS	WIPRO	InApp	
61	PARVATHI E V	PENTAGON SPACE			
62	PAUL BABU	WIPRO			
63	REHAN P ZAVI	SOTI	WIPRO		
64	RONCY R THOMAS	EXPERION			
65	SHAMIL THOMAS	DXC			
66	SHANA JAMES	PENTAGON SPACE	INTELLECT		
67	SHAN SHAJI	QBURST	COGNIZANT		
68	SHEENA	HEXAWARE			
69	SIBI MATHEW	WIPRO			
70	SREEDEVI S	ASPIRE SYSTEMS			
71	SREYA	INAPP	TCS	WIPRO	
72	SVETLANA BRIGHT	TCS			
73	VIVEK MATHEW THOMAS	TCS			



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## Vision of the Department

The Computer Science and Engineering department is committed to continually improve the educational environment in order to develop professionals with strong technical and research backgrounds.

## Mission of the Department

To provide quality education in both theoretical and applied foundations of Computer Science & Engineering.  
Create highly skilled Computer Engineers, capable of doing research and also develop solutions for the betterment of the nation.  
Inculcate professional and ethical values among students.  
Support society by participating in and encouraging technology transfer.

## Programme Educational Objectives

**PEO1** Be successfully employed in computing profession as well as multidisciplinary domains in supportive and leadership roles.

**PEO2** Participate in life-long learning through successful completion of advanced degrees, continuing education, certifications and/or other professional development.

**PEO3** Promote design, research, product implementation and services in the field of Computer Science and Engineering through strong technical, communication and entrepreneurial skills.

**PSO1** Apply Engineering knowledge to analyze, design and develop computing solutions by employing modern computer languages, environments and platforms that can solve complex problems.

**PSO2** Anticipate the changing direction of computational technology, evaluate it and communicate the likely utility of that for building software systems that would perform tasks related to industry, research and education.

**PSO3** Inculcate the knowledge of Engineering and Management principles to manage projects effectively and create innovative career paths.

## Programme Outcomes

**B Tech Computer Science and Engineering Graduates will be able to:**

- 1.Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2.Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- 3. 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 the public health and safety, and the cultural, societal, and environmental considerations.
- 4.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.
- 5.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.
- 6.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.
- 7.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.
- 8.Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- 9.Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- 10.Communication:** Communicate effectively on complex engineering activities with the engineering community and with 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.
- 11.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.
- 12.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.