SUSTAINABLE DEVELOPMENT GOALS

4. QUALITY EDUCATION

4.3 Ensure Inclusive and Equitable Quality Education and Promote Lifelong Learning Opportunities for All

In the absence of further action, an estimated 300 million pupils will not have the fundamental literacy and numeracy skills needed for success in life, and an estimated 84 million children and youth will remain out of school by 2030.In addition to free primary and secondary schooling for all boys and girls by 2030, the aim is to provide equal access to affordable vocational training, eliminate gender and wealth disparities, and achieve universal access to quality higher education. Education is the key that will allow many other Sustainable Development Goals (SDGs) to be achieved. When people are able to get quality education they can break from the cycle of poverty. Education helps to reduce inequalities and to reach gender equality. It also empowers people everywhere to live more healthy and sustainable lives. Education is also crucial to fostering tolerance between people and contributes to more peaceful societies. To deliver on Goal 4, education financing must become a national investment priority. Furthermore, measures such as making education free and compulsory, increasing the number of teachers, improving basic school infrastructure and embracing digital transformation are essential.

The SDG4 goal is a pivotal driver for positive change, emphasizing the transformative power of education in fostering a sustainable and equitable world. The objective of SDG 4, which focuses on ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all, is geared towards achieving various targets by 2030. For college-level education specifically, this includes ensuring that all students have access to affordable and quality higher education, vocational training, and opportunities for lifelong learning. This means advocating for policies that promote equal access to education and addressing barriers that marginalize certain groups.

Policy on Quality Education

The Chennai Institute of Technology (CIT) has made a distinct mark in the field of education and research. It imparts and follows an educational system which not only provides for a living but for an improved quality of life.

The various departments are headed by Heads and Teachers with high profile educational qualifications who impart value-based education which aids a person to put into use what he has learnt from the institution and thereby lead a good life.

The teachers not only teach pure academics but also imparts life skills. They understand the needs of

different types of students, such as slow learners, some more oriented towards sports and cultural activities, some more interested in research.

The CIT strives to coordinate these students and take them forward as a one big group. It also aims at inclusive education in the sense that students from different economic, social, geographical and cultural differences are admitted in one campus and treated alike.

Every effort has been made by the CIT to accommodate people from the local community. The CIT partakes in different activities organized by the local community and goes out to spread awareness on various issues related to the development of the local community as a whole.

The various departments conduct awareness campaigns on the necessity of educating the children. A great emphasis is laid on the early years of education, the formative stage of a person's life, which determines his personality at a later stage. The CIT campus supports the primary, kindergarten and lower primary classes and standard education is imparted to the children to enable them to become better citizens of tomorrow.

The economic growth of a country depends on a well-planned and well-organized class of citizens who by their wise and well-informed financial decisions helps to promote the growth of our country.

In order to make this wise and well-informed decisions, the students should be given a class of education which helps them to not alone analyze the economy and plan accordingly but also pay their taxes regularly. Each student is educated about his duty towards the country and how responsible citizenry would reflect on the growth of the country.

There is no discrimination or inequality in the system of education imparted by us and all the classes of students are given the privileges and preferences which are owed to them under the Constitution and various. other legislations.

CIT tries to build a fair and sustainable world where every person is provided with equal opportunity to realize his potential to the fullest. CIT has a placement cell which enables the students who have successfully completed their courses to find employment.

This provides job security to students as the employers come in through the CIT so their credentials are checked before the students get employed. The Placement Cell consists of a team which thoroughly investigates into the goodwill of the employer.

CIT takes great pride in making the world know that the resources of the CIT can be used even by

persons who are not studying in the campus. The facility is open to all irrespective of any discrimination.

Therefore, the CIT envisages promotion of not only its students but whoever is interested in educating themselves. The aim is, precisely, the welfare of the society as a whole. For the same reason, it provides huge access not alone to the library but also to the online courses, video lecture materials and other facilities which a student wants to access.
Any student who is endowed with intellectual ability is promoted and encouraged to navigate his skills and achieve great success.

CIT is well equipped with modern technological devices with its IT enabled and smart classrooms which have LCD projectors, white boards, audio facilities for the speakers and every student has an easy access to computer.

CIT also has computer labs and every library is endowed with adequate computers to enable the students to have access for their research and learning.

CIT also provides for Learning Management System, MOODLE, TCS, etc., the most sophisticated process for teaching learning management. All the departments have been successfully conducting online classes and it is ensured that each student participates effectively. This has been a great success during the pandemic times.

CIT has been organizing events in the public domain by conducting public lectures, various events, educational events and ensure maximum public participation.

CIT also offers vocational training to the public, free of cost and this has enabled many persons to secure jobs and earn their livelihood. Many families are benefitted by this and in this way the CIT ensures that it is always in the service of the community.

The various departments of the CIT have also organized many extension activities beyond the campus which has benefitted the students in the nearby schools, the people of small hamlets in the vicinity of the CIT, the small towns and the city areas which is appreciated by the people who are the beneficiaries of such activities.

CIT is a student friendly campus and each student is important to the institution. For the better benefit of the students, the CIT has founded the Students Grievance Cell so that they can address

their concerns. Then an Anti-Ragging Cell is created for the benefit of the students.

Another Committee, that is the Internal Complaints Committee was formed relating to the prevention, prohibition and redressal of sexual harassment at workplace to the female employees and students. A Caste Discrimination Control Room is also created to solve the differences arising out of the caste discrimination.

CIT takes pride that it provides access to education to all, those who seek knowledge and wisdom, regardless of their ethnicity, religion, community, gender or disability.

Policy History

Policy created on	22-05-2019
Policy reviewed on	25-11-2022

Policy on Lifelong Learning Process

The institute promotes lifelong learning opportunities for all the individuals of the society. The institution supports education and information through various information resources which are user friendly. It enhances knowledge and skills through the learning materials offered in the website, and the skill development modules both online and offline. It aims to make learning flexible, easily accessible, through clear, reliable information and advice. CIT has policies, processes and necessary infrastructure for integrating the resources within the institution and ensure free access to the resources through its website. To Provide and support various stakeholders such as student community, faculty and staff, public, to access the various learning resources and utilize the knowledge to improve quality of lifelong learning. The objectives are to promote lifelong learning practices by accessing relevant, high-quality, evidence based learning resources, integrating information and communication technology.

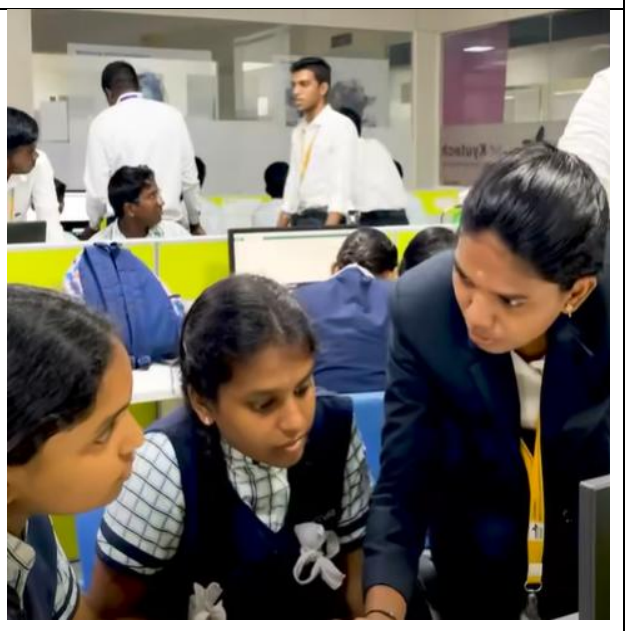
Policy History

Policy created on	22-05-2019
Policy reviewed on	25-11-2022

Public resources (lifelong learning)

Provide free access to educational resources for those not studying at the university.

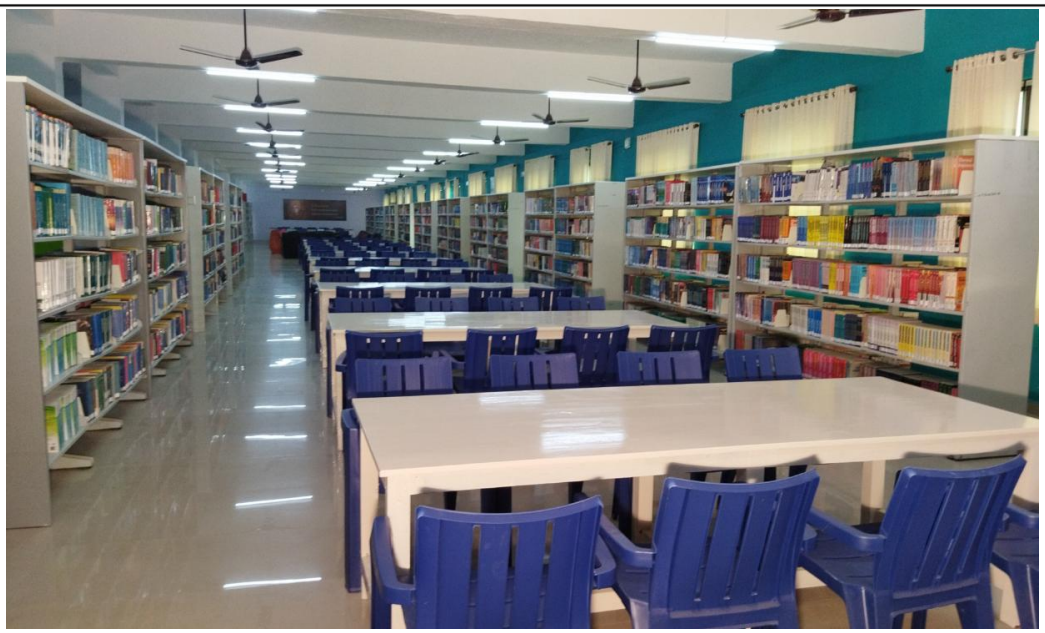
Our institution hosts more than 30 Centres of Excellence (CoEs), including Industrial Robotics, Coding Centre, Renewable Energy Centre, and advanced Mechanical Laboratories equipped with high-specification instruments. These centres are designed not only for our students but also to serve the wider community. We regularly organize training programs, workshops, and awareness events for school students and the general public, offering them the opportunity to explore and utilize our cutting-edge facilities. In addition, individuals from outside the university can approach us to receive free training and knowledge-sharing sessions, ensuring open access to quality educational resources and promoting lifelong learning beyond campus boundaries.






Provide Public Access to Libraries Including Books and Publications

The Chennai Institute of Technology offers open access to its well-equipped central library for school students and the general public. This initiative aims to promote a culture of learning and knowledge sharing beyond the campus community. The library houses a vast collection of books, journals, magazines, and digital resources covering various disciplines. By allowing access to external learners, the institution encourages educational growth, research opportunities, and reading habits among the local community. Visitors can utilize the reading spaces, reference materials, and digital facilities under the guidance of library staff. This initiative strengthens the institute's commitment to inclusive education and community development.



Education outreach activities beyond campus

Inspiring Young Innovators – Entrepreneurial Awareness Session

Chennai Institute of Technology regularly hosts educational and entrepreneurial events that are open to students, educators, and the general public. Entrepreneurs Manoj Arwin, Founder of @arwin_networks, and Karthikesh J G, Founder of @karthikesh_robotics, who were incubated at CIT Innovation Labs, along with the Self-Reliant Bharath Movement, conducted an inspiring session at Shri Gorantla Ramalingaiah Vivekananda Vidyalaya, Chennai. These initiatives aim to nurture young minds, promote innovation, and empower the next generation of entrepreneurs, fostering a culture of learning and collaboration that extends beyond the university campus.

Vazhikaatti Program

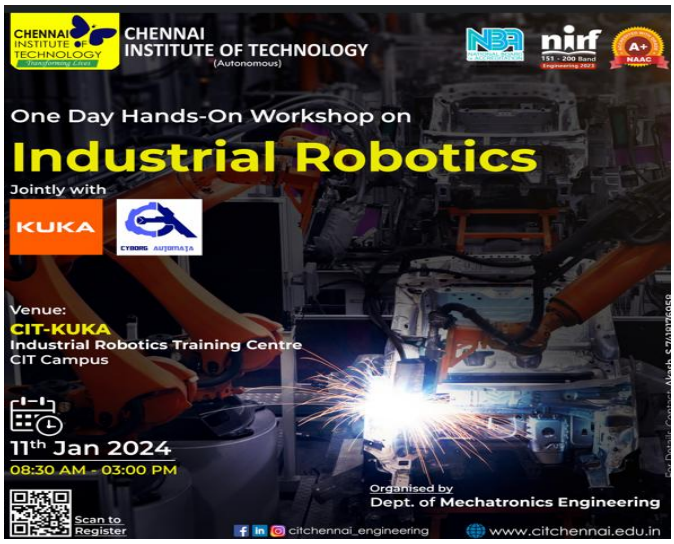
Chennai Institute of Technology actively engages in education outreach initiatives beyond its campus to connect with aspiring students and the community. Every year, we conduct programs such as the TNEA Engineering Counselling Vazhikaatti, organized at various districts including Theni, to guide and support prospective engineering students. During these sessions, our Chairman

Mr. P. Sriram shares valuable insights on the current job market, emerging technologies, and fast-developing industrial sectors. These annual outreach activities aim to enhance career awareness, promote informed educational choices, and extend the institution's impact beyond the campus, fostering knowledge and opportunity for all.

Public events (lifelong learning)

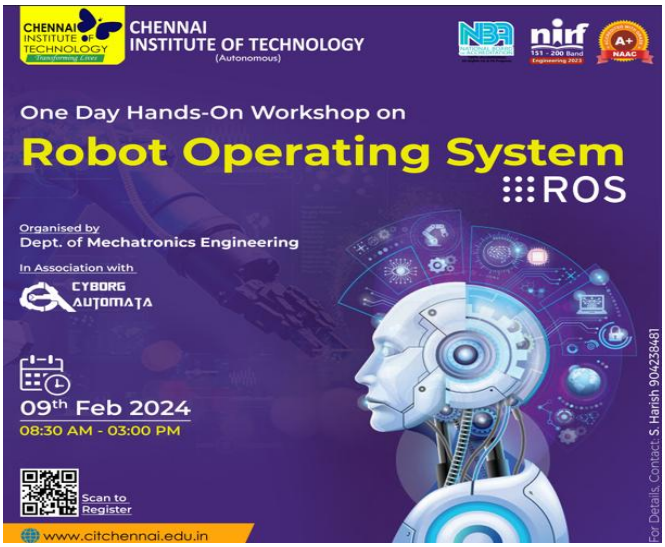
One-Day Hands-On Workshop on Industrial Robotics

Chennai Institute of Technology actively hosts educational workshops and training programs that are open to students, professionals, and the general public. As part of this initiative, the Department of Mechatronics Engineering organized a One-Day Hands-On Workshop on Industrial Robotics in collaboration with KUKA and Cybros Automatia at the CIT–KUKA Industrial Robotics Training Centre. The workshop provided participants with practical exposure to robotic systems, automation technologies, and real-time industrial applications, bridging the gap between academic learning and industry practices.



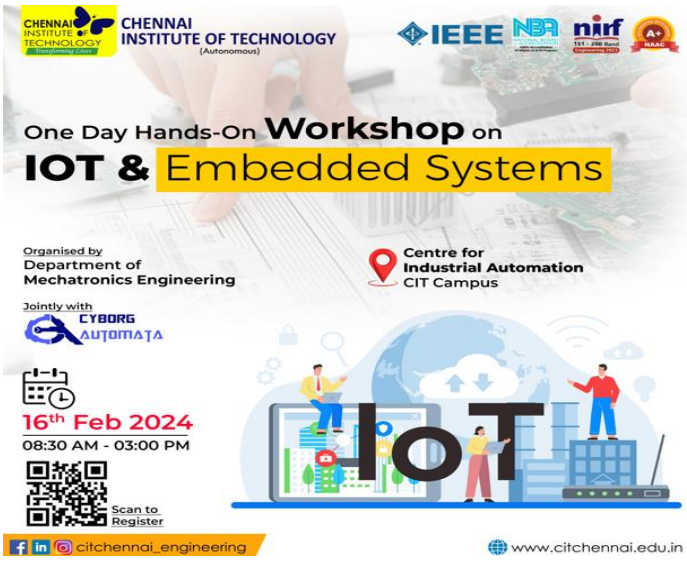
One-Day Hands-On Workshop on Robot Operating System (ROS)

The Department of Mechatronics Engineering conducted a One-Day Hands-On Workshop on Robot Operating System (ROS) in association with Cyborg Automata, providing participants with real-world exposure to robotics and automation technologies. Chennai Institute of Technology regularly organizes such hands-on workshops and training programs open to students, faculty, professionals, and the general public to promote practical learning and industry readiness.



One-Day Hands-On Workshop on IoT & Embedded Systems

The Department of Mechatronics Engineering organized a One-Day Hands-On Workshop on IoT & Embedded Systems at the Centre for Industrial Automation, CIT Campus, in collaboration with Cyborg Automata. Chennai Institute of Technology regularly organizes such hands-on workshops and training programs that are open to students, faculty, professionals, and the general public to promote practical learning and industry readiness. These initiatives provide participants with valuable exposure to emerging technologies and real-world applications, fostering innovation and skill development beyond the classroom.



Two-Day Hands-On Workshop on Drone Building

The Centre for Defence and Space Research at Chennai Institute of Technology organized a Two-Day Hands-On Workshop on Drone Building, offering participants an in-depth understanding of drone technology and its real-world applications. Event encourage participants to explore emerging technologies and enhance their technical skills, extending the university's educational impact beyond the campus.

4.4 Proportion of first-generation students

Indicator: Proportion of first-generation students

Number of students starting a degree: 1440

Number of first-generation students starting a degree: 169

RESEARCH ACTIVITIES

Following are the research projects carried out in the department which has the relevance to SDG 4 goals.

ULTIMATE Q& A LARGE LANGUAGE MODEL CHAT APPLICATION

The Ultimate Q&A LLM chat app represents a novel approach to interacting with PDF documents through a chat interface. Leveraging natural language processing and machine learning technologies, this application allows users to query multiple PDFs simultaneously, obtaining relevant information and responses based on the content of the documents. This paper outlines the development, functionality, and potential applications of the Ultimate Q&A LLM chat app, emphasizing its significance in enhancing document interaction and information retrieval.

ADAPTIVE LEARNING FOR AUTISTIC CHILDREN: MOOD-BASED MUSIC THERAPY INTEGRATION

Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder that involves difficulties in social communication. Previous research has demonstrated that these difficulties are apparent in the way ASD children speak, indicating that it may be possible to estimate ASD severity using quantitative features of speech. Here, we extracted a variety of prosodic, acoustic, and conversational features from speech recordings of Hebrew speaking children who completed an Autism Diagnostic Observation Schedule (ADOS) assessment. Sixty features were extracted from the recordings of 72 children and 21 of the features were significantly correlated with the children's ADOS scores. Positive correlations were found with pitch variability and Zero Crossing Rate (ZCR), while negative correlations were found with the speed and number of vocal responses to the clinician, and the overall number of vocalizations. Using these features, we built several Deep Neural Network (DNN) algorithms to estimate ADOS scores and compared their performance with Linear Regression and Support Vector Regression (SVR) models. We found that a Convolutional Neural Network (CNN) yielded the best results. This algorithm predicted ADOS scores with a mean RMSE of 4.65 and a mean correlation of 0.72 with the true ADOS scores when trained and tested on different sub- samples of the available data. Automated algorithms with the ability to predict ASD severity in a reliable and sensitive manner have the potential of revolutionizing early ASD identification, quantification of symptom severity, and assessment of treatment efficacy.

SUBJECTIVE ANSWER EVALUATION USING MACHINE LEARNING AND NATURAL LANGUAGE PROCESSING

This Project presents an innovative approach for the automated evaluation of subjective answers leveraging the power of machine learning (ML) and natural language processing (NLP) techniques. Traditional methods of assessing subjective responses often rely on manual grading, which can be time- consuming and prone to subjectivity. Our proposed system aims to streamline this process by employing advanced ML algorithms and NLP models to objectively evaluate and score subjective answers. We explore various methodologies for feature extraction, sentiment analysis, semantic understanding, and contextual comprehension to develop a robust evaluation framework. Furthermore, we discuss the integration of these techniques into an end- to-end system capable of handling diverse types of subjective responses. Experimental results demonstrate the effectiveness and efficiency of our approach, showcasing its potential to revolutionize the evaluation of subjective answers in various educational and professional settings.

E-LEARNING PLATFORM FOR FULL STACK WEB DEVELOPMENT

This Project details the development of an e-learning platform tailored specifically for full-stack developers. The platform integrates features such as YouTube video tutorials, interactive coding exercises, a playground IDE, and a user contribution interface. A login/sign- up system is also implemented for user authentication and personalized experiences. The report outlines the platform's architecture, functionality, user interaction, and concludes with its potential impact on software development education.

ACADEMIC PROGRESS FORECASTING USING MACHINE LEARNING IN PYTHON

This Project proposes a machine learning based approach for forecasting academic progress, aiming to assist educators in identifying students at risk of underperformance. Leveraging data from student demographics, educational background, and classroom engagement metrics, our methodology employs various supervised learning algorithms, including decision trees, random forests, perceptron, logistic regression, and neural networks. We evaluate the performance of these models using real-world student performance data, comparing their accuracy in predicting academic outcomes. The results demonstrate the effectiveness of the proposed approach in accurately forecasting student progress, thereby enabling proactive interventions to support at-risk students and improve overall educational outcomes.