

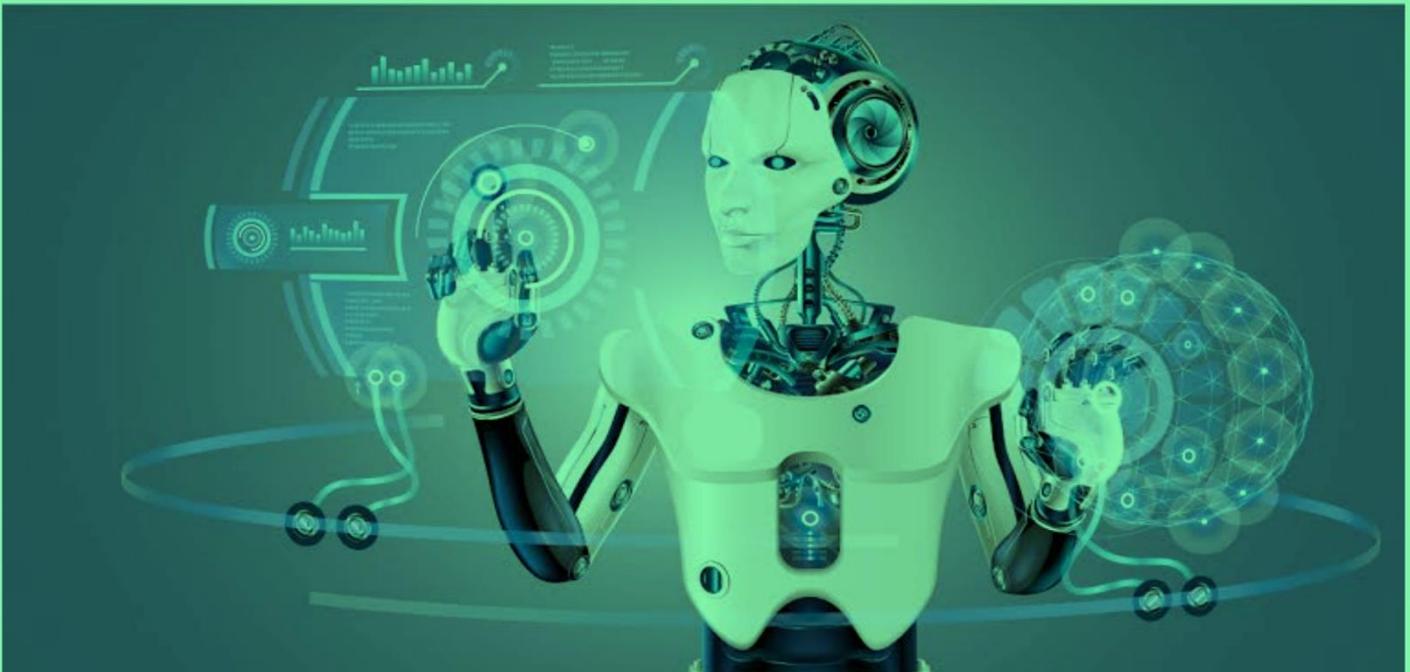


Aditya College of Engineering & Technology

*Department of
Mechanical Engineering*

IGNITO MAGAZINE

DEC-MAY [2019-2020]



EDITORIAL BOARD

Dr. N Stanley Ebenezer Asst. Professor

Mr. Abdul Arif Asst Professor

Mr. T. Giri Vijay [Student]

Mr. M. Satya Sai Kumar [Student]

Mr. P. Prasanna Kumar [Student]

Mr. P. Mohith [Student]

Chairman's Message



Dr. N.SESHA REDDY
CHAIRMAN

I believe in the philosophy of thought, word and deed as eternal which made Aditya what it is today. My thought to set a high bar to the institutions I setup by rising to the challenges of the educational field and get prepared for a life dedicated to the pursuit of knowledge, my word which always reflected my vision and gained the conviction of the heads of the institutes and parents, and my deed which makes my home and workplace as extensions of each other by considering the staff and students as the members of my extended family shaped Aditya

I know the value of a good education, more so because I did not have the benefit of the facilities that make the learning process smooth. I began my career as a lecturer, giving up my desire of qualifying in the Service Commission Examination. Out of my despair was born a strong determination which took the shape of Aditya Educational Institutions. The present-day job market poses fresh challenges that need to be managed innovatively. Global business Incubation centre, Microsoft Innovation Centre, Technical Skill Development Institute, T-hub, Training and Placement Cell, GATE coaching

Vice- Chairman's Message

As a direct product of Aditya, I know how hard my father worked to put Aditya on the academic map of the country during its many stages of expansion, even in the most trying conditions. My master's degree from UTS Australia, the continent's premier university, has given me a better grasp of the educational system. Aditya technical campus in Surampalem was constructed in the aftermath to provide professional education in engineering, technology, management, and pharmacy, with the underlying principle of excellence and quality. The campus has made rapid growth since its beginning in 2001 by upholding its unwavering dedication to advance knowledge and educate students in science and technology. The campus' main goal is to make teaching and research more relevant to the real world. The ultimate aim of Aditya is to make the campus the 'first stop' for companies in the recruitment process. Keeping in view the demands of the work environment which is beyond just knowledge and marks, a lot of emphasis is laid on the overall personality development of the students.



Dr. N SATHISH REDDY
VICE-CHAIRMAN

Principal's Message



Dr. T. K. Rama Krishna Rao
PRINCIPAL

The major issues we confront can't be handled at the same level of reasoning that we used to create them." Albert Einstein is credited with coining the phrase "theory of relativity." Man can only achieve immortality through knowledge. To stay relevant, knowledge must extend or grow. The road to excellence is the world's toughest, roughest, and steepest. Only quality is required and rewarded in our world. To develop new knowledge, available information must be directed by wisdom and intellect. Education's new duty is to promote creativity. The only way to address current and future problems and discover dynamic answers is to think creatively. Technology should be used to aid in the eradication of poverty around the world. In truth, India is home to 40% of the world's poor. Capacity is a result of confidence.

Miracles are the result of one's faith in oneself. At ACET, education aims to develop character, strengthen the mind, broaden the intellect, and foster a culture of problem-solving. The student is placed through rigorous training so that when he leaves the Institute, he can stand on his own two feet.

HOD Message



Dr. T. Srihari, HOD

Mechanical engineering is one of the oldest and broadest engineering disciplines, and plays a significant role in enhancing safety, economic vitality, enjoyment and overall quality of life throughout the world.

Mechanical engineers develop state-of-the-art technologies and exhilarating solutions for the mankind. We attempt to provide our students with a cheerful, productive and satisfying experience at all levels of their program of studies to explore the amazing world of mechanical engineering.

Our department has a team of highly qualified and experienced faculty, good infra structure and lab facilities. We are striving hard continuously to improve upon the quality of education and to maintain its position of leadership in engineering and

Department of Mechanical Engineering

The Department of Mechanical Engineering is a pioneer department since the establishment of college in 2011. The department has extensive facilities in terms of faculty, infrastructure & equipment. The department is recognised as a research centre by JNTUK, Kakinada for pursuing Ph.D. programme in Mechanical Engineering. The department has spacious laboratories and well equipped with experimental set-ups as per the requirement of the curriculum. The faculty are very active and encourage the students in fabricating real models viz., Go-kart, Robots, Solar based vehicles and other working models, which are very useful in day-to-day life and teach students with live examples.

The department has an entrepreneurship cell through which it organises lectures by successful entrepreneurs, bank officers, MSME officials to nurture them as successful entrepreneurs in future. To nurture the students to gain all-round development, the department has many clubs like, 'cultural club', "We can talk" to improve soft skills and improve their intra and inter-personal skills, interactive skills to make them leaders of tomorrow. The faculty encourages students to participate in competitions like Go-kart at National level and present technical papers in conferences and publish papers in journals



IGNITO

Department Vision

To be a center of excellence in Mechanical Engineering education and research

Department Mission

- *To promote trainings with institutional association*
- *To achieve learning centric infra-structure.*
- *To provide skill-based education with focus on Automotive*
- *To promote innovative ideas through creativity and leadership quality*

PSO'S

PSO1 Mechanical Engineers must be able to analyze, design and evaluate mechanical components and systems using cutting edge software tools as required by the industries from time to time.

PSO2 The ability to work in manufacturing and other sectors operations and maintenance plants.

PSO3 As part of a team or individually, plan and manage activities in micro, small, medium and large enterprise.

Article**Industry 4.0**

Industry 4.0 is used interchangeably with the fourth industrial revolution and represents a new stage in the organization and control of the industrial value chain.

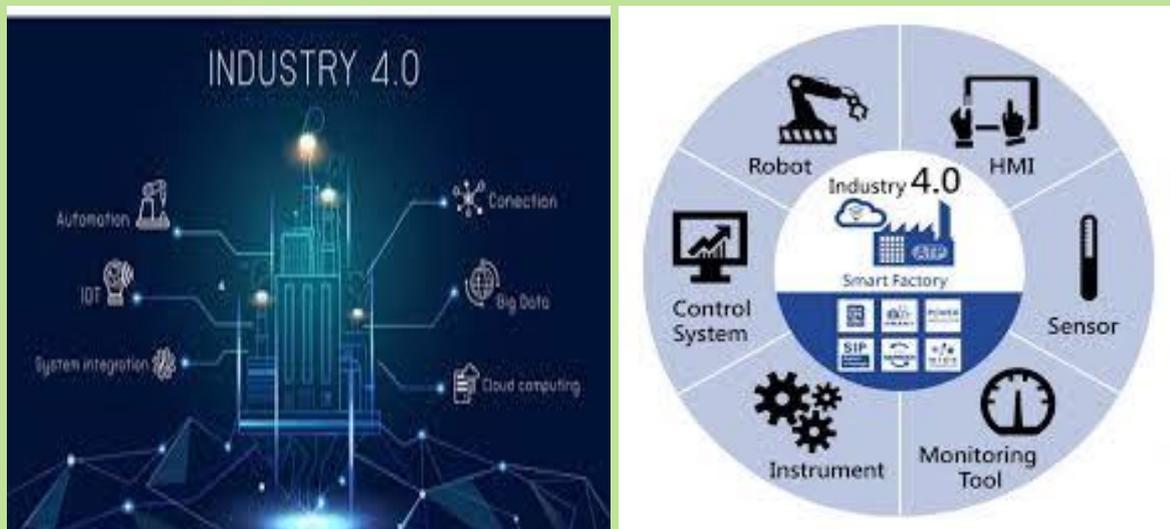
Cyber-physical systems form the basis of Industry 4.0 (e.g., 'smart machines'). They use modern control systems, have embedded software systems and dispose of an Internet address to connect and be addressed via IoT (the Internet of Things).

This way, products and means of production get networked and can 'communicate', enabling new ways of production, value creation, and real-time optimization.

Cyber-physical systems create the capabilities needed for smart factories. These are the same capabilities we know from the Industrial Internet of Things like remote monitoring or track and trace, to mention two.

Industry 4.0 is often used interchangeably with the notion of the fourth industrial revolution. It is characterized by, among others,

- even more automation than in the third industrial revolution,
- the bridging of the physical and digital world through cyber-physical systems, enabled by Industrial IoT,
- a shift from a central industrial control system to one where smart products define the production steps,
- closed-loop data models and control systems and
- personalization/customization of products.



K Subash
IV Mechanical, Student

Student Technical Events

GO KART

Students of Mechanical engineering have participated in the event GOKART - STEP CONE at GMRIT



Computational Fluid Dynamics

Department of Mechanical Engineering has organized a course on Introduction to ANSYS using Computational fluid dynamics



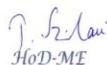
ADITYA COLLEGE OF ENGINEERING & TECHNOLOGY

Permanently Affiliated to JNTUK, Kakinda, Approved by AICTE, New Delhi, Accredited by NAAC
Recognized by UGC under sec (2F) and 12(B) of UGC Act 1956
Aditya Nagar, ADB Road, Surampalem-533437

CERTIFICATE

This is to Certify that Mr./Ms. ALLURI JAYAVENKATA RAJESH REDDY
with roll number 17P31A0303 of Department of Mechanical Engineering has
participated in certification course on "INTRODUCTION TO ANSYS USING CFD"
organized by Department of Mechanical Engineering, Aditya College of Engineering
& Technology, Surampalem from 17TH to 24TH February 2020.


Co-ordinator


HoD-ME


Principal



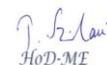
ADITYA COLLEGE OF ENGINEERING & TECHNOLOGY

Permanently Affiliated to JNTUK, Kakinda, Approved by AICTE, New Delhi, Accredited by NAAC
Recognized by UGC under sec (2F) and 12(B) of UGC Act 1956
Aditya Nagar, ADB Road, Surampalem-533437

CERTIFICATE

This is to Certify that Mr./Ms. AMARADI VEERA VENKATA GANESH
with roll number 17P31A0304 of Department of Mechanical Engineering has
participated in certification course on "INTRODUCTION TO ANSYS USING CFD"
organized by Department of Mechanical Engineering, Aditya College of Engineering
& Technology, Surampalem from 17TH to 24TH February 2020.

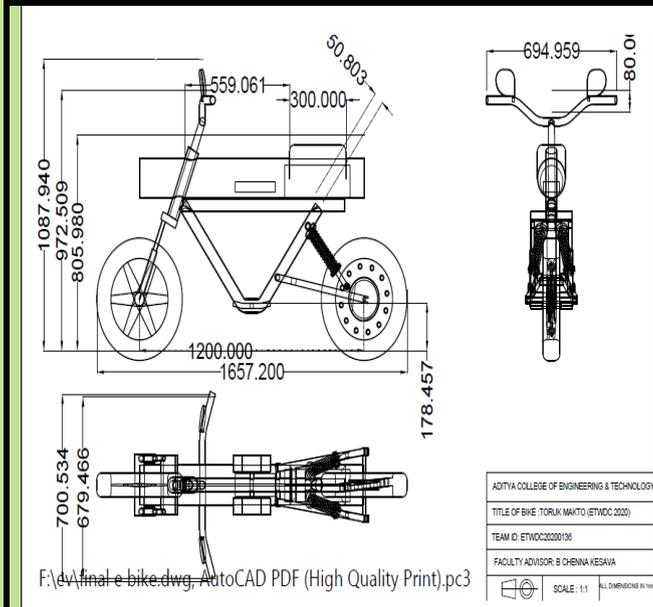

Co-ordinator


HoD-ME


Principal

Electric Two-wheeler Design Competition

ETWDC is an event organised by SAEINDIA Southern Section. A total of 10 students from Mechanical and Electrical and Electronics Engineering with two faculty advisors are participated in this event from Aditya College of Engineering & Technology. Due to pandemic situation, the event is restricted to online only. In this event, three phases of Design report-1, Design report-2 and static event-business plan.



Skill Development Programs

The students of Mechanical Engineering have attended certified courses to improve the technical skills that are required for working in core sector. This program has been organized by APSSDC (state government of Andhra Pradesh)

Manufacturing CNC Turning Foundation Course



This is to certify that **Alluri Jaya Venkata Rajesh Reddy**.....
bearing number **APSSDC/Siemens/M/108147**.. has successfully
completed.....**Manufacturing-CNC TURNING-Foundation**..... Course
Conducted at
.....**Aditya Engineering College, Surampalem**.....
from **27-Jan-20 to 01-Feb-20**

Siemens Industry Software Pvt. Ltd APSSDC DesignTech Systems Limited



This is to certify that **Gorrela Subhakar Ganesh**.....
bearing number **APSSDC/Siemens/M/108149**.. has successfully
completed.....**Manufacturing-CNC TURNING-Foundation**..... Course
Conducted at
.....**Aditya Engineering College, Surampalem**.....
from **27-Jan-20 to 01-Feb-20**

Manufacturing-Welding Foundation Course



This is to certify that **Alluri Jaya Venkata Rajesh Reddy**.....
bearing number **APSSDC/Siemens/M/108147**.. has successfully
completed.....**Manufacturing-CNC TURNING-Foundation**..... Course
Conducted at
.....**Aditya Engineering College, Surampalem**.....
from **27-Jan-20 to 01-Feb-20**

Siemens Industry Software Pvt. Ltd APSSDC DesignTech Systems Limited



This is to certify that **Gorrela Subhakar Ganesh**.....
bearing number **APSSDC/Siemens/M/108149**.. has successfully
completed.....**Manufacturing-CNC TURNING-Foundation**..... Course
Conducted at
.....**Aditya Engineering College, Surampalem**.....
from **27-Jan-20 to 01-Feb-20**

from **27-Jan-20 to 01-Feb-20**

Article**Swarm Robotics**

Swarm robotics is an approach to the coordination of multiple robots as a system which consist of large numbers of mostly simple physical robots. It is supposed that a desired collective behaviour emerges from the interactions between the robots and interactions of robots with the environment. This approach emerged on the field of artificial swarm intelligence, as well as the biological studies of insects, ants and other fields in nature, where swarm behaviour occurs.

Miniaturization and cost are key factors in swarm robotics. These are the constraints in building large groups of robots therefore, the simplicity of the individual team member should be emphasized. This should motivate a swarm-intelligent approach to achieve meaningful behaviour at swarm-level, instead of the individual level. Much research has been directed at this goal of simplicity at the individual robot level. Being able to use actual hardware in research of Swarm Robotics rather than simulations allows researchers to encounter and resolve many more issues and broaden the scope of Swarm Research. Thus, development of simple robots for Swarm intelligence research is a very important aspect of the field. The goals include keeping the cost of individual robots low to allow scalability, making each member of the swarm less demanding of resources and more power/energy efficient

Potential applications for swarm robotics are many. They include tasks that demand miniaturization (nanorobotics, microbotics), like distributed sensing tasks in micromachinery or the human body. One of the most promising uses of swarm robotics is in search and rescue missions. Swarms of robots of different sizes could be sent to places that rescue-workers can't reach safely, to explore the unknown environment and solve complex mazes via onboard sensors. On the other hand, swarm robotics can be suited to tasks that demand cheap designs, for instance mining or agricultural shepherding tasks.

More controversially, swarms of military robots can form an autonomous army. U.S. Naval forces have tested a swarm of autonomous boats that can steer and take offensive actions by themselves. The boats are unmanned and can be fitted with any kind of kit to deter and destroy enemy vessels.



Mr. P Jai Kishan
Assistant Professor

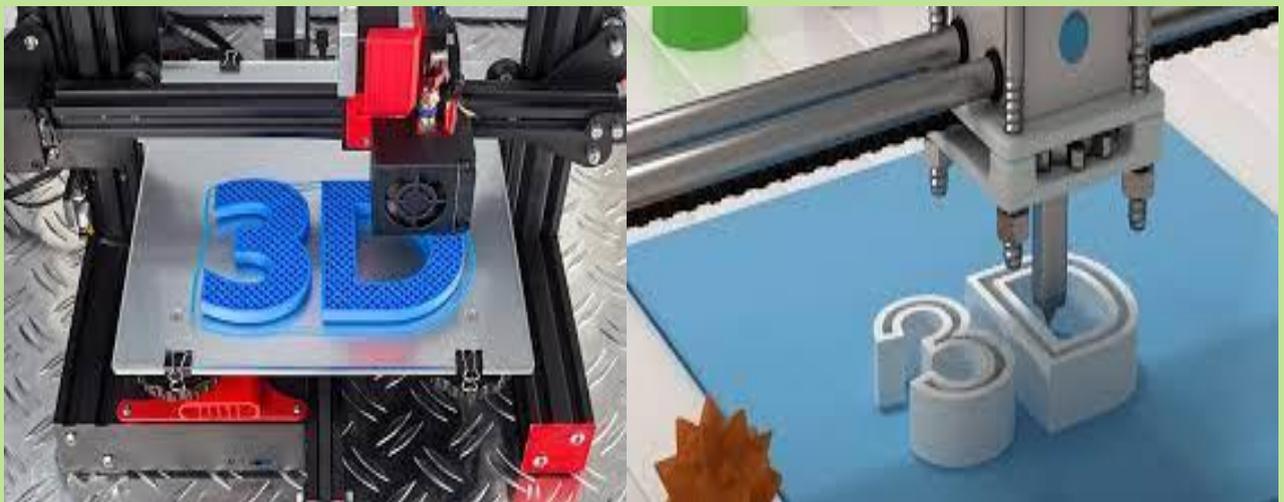
3D Printing Technology

3D printing or additive manufacturing is the construction of a three-dimensional object from a CAD model or a digital 3D model. It can be done in a variety of processes in which material is deposited, joined or solidified under computer control, with material being added together (such as plastics, liquids or powder grains being fused), typically layer by layer.

In the 1980s, 3D printing techniques were considered suitable only for the production of functional or aesthetic prototypes, and a more appropriate term for it at the time was rapid prototyping. As of 2019, the precision, repeatability, and material range of 3D printing have increased to the point that some 3D printing processes are considered viable as an industrial-production technology, whereby the term additive manufacturing can be used synonymously with 3D printing. One of the key advantages of 3D printing is the ability to produce very complex shapes or geometries that would be otherwise impossible to construct by hand, including hollow parts or parts with internal truss structures to reduce weight. Fused deposition modeling (FDM), which uses a continuous filament of a thermoplastic material, is the most common 3D printing process in use as of 2020.

3D printable models may be created with a computer-aided design (CAD) package, via a 3D scanner, or by a plain digital camera and photogrammetry software. 3D printed models created with CAD result in relatively fewer errors than other methods. Errors in 3D printable models can be identified and corrected before printing. The manual modeling process of preparing geometric data for 3D computer graphics is similar to plastic arts such as sculpting. 3D scanning is a process of collecting digital data on the shape and appearance of a real object, creating a digital model based on it.

CAD models can be saved in the stereolithography file format (STL), a de facto CAD file format for additive manufacturing that stores data based on triangulations of the surface of CAD models. STL is not tailored for additive manufacturing because it generates large file sizes of topology optimized parts and lattice structures due to the large number of surfaces involved. A newer CAD file format, the Additive Manufacturing File format (AMF) was introduced in 2011 to solve this problem. It stores information using curved triangulations.



Dr. N. Stanley Ebenezer
Assistant Professor

Student Placements



B Gangaram
Woosu Automotive



N Sreenu
Woosu Automotive



G Raja
Woosu Automotive



D Nagendra
Kwangsung



P Rakesh
Kwangsung



V S Raju
Kwangsung



V Sudarshan
YSI Automotives



K M Srinivasa Rao
Global Auto Components



A Sandeep
SINTEX BAPL



G V V Naga Siva
DXC Technologies



Reddy Sriram
DXC Technologies



G Uday Sai
DXC Technologies

NPTEL Certifications



NPTEL Online Certification

(Funded by the Ministry of HRD, Govt. of India)




This certificate is awarded to
DR. N. STANLEY EBENEZER

for passing the course
**Non Traditional Abrasive Machining Processes Ultrasonic,
Abrasive Jet and Abrasive Water Jet Machining**

with Score* **57** %



Prof. Adrijit Goswami
Dean, Continuing Education & NPTEL Coordinator
IIT Kharagpur

Jan-Feb 2020
(4 week course)



Indian Institute of Technology Kharagpur



*Continuous online assessment score
To validate and check scores: <https://nptel.ac.in/noc>



NPTEL Online Certification

(Funded by the Ministry of HRD, Govt. of India)




This certificate is awarded to
ABDUL ARIF

for passing the course
Theory and Practice of Non Destructive Testing

with Score* **65** %



Prof. Devendra Jalihal
Chairman
Centre for Continuing Education, IITM

Jan-Mar 2020
(8 week course)



Prof. Andrew Thangaraj
NPTEL Coordinator
IIT Madras



Indian Institute of Technology Madras



*Continuous online assessment score
To validate and check scores: <https://nptel.ac.in/noc>



NPTEL Online Certification

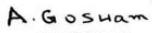
(Funded by the Ministry of HRD, Govt. of India)




This certificate is awarded to
RAGHAVENDRA YADAV

for passing the course
Metal Cutting and Machine Tools

with Score* **60** %



Prof. Adrijit Goswami
Dean, Continuing Education & NPTEL Coordinator
IIT Kharagpur

Feb-Mar 2020
(4 week course)



Indian Institute of Technology Kharagpur



*Continuous online assessment score
To validate and check scores: <https://nptel.ac.in/noc>



NPTEL Online Certification

(Funded by the Ministry of HRD, Govt. of India)




This certificate is awarded to
A CHIRANJEEVI V S PRASAD

for passing the course
Rocket Propulsion

with Score* **92** %



Prof. Devendra Jalihal
Chairman
Centre for Continuing Education, IITM

Jan-Apr 2020
(12 week course)



Prof. Andrew Thangaraj
NPTEL Coordinator
IIT Madras



Indian Institute of Technology Madras



*Continuous online assessment score
To validate and check scores: <https://nptel.ac.in/noc>



NPTEL Online Certification

(Funded by the Ministry of HRD, Govt. of India)




This certificate is awarded to
GANGADHARA RAO PONUGOTI

for passing the course
**NBA Accreditation and Teaching - Learning
in Engineering (NATE)**

with Score* **84** %



Prof. G. L. Sivakumar Babu
Chairman, Centre for Continuing Education
IISc Bangalore

Jan-Apr 2020
(12 week course)



Prof. L. Umanand
NPTEL Coordinator
IISc Bangalore



Indian Institute of Science Bangalore



*Continuous online assessment score
To validate and check scores: <https://nptel.ac.in/noc>



NPTEL Online Certification

(Funded by the Ministry of HRD, Govt. of India)




This certificate is awarded to
CH RAM PRASAD

for passing the course
**Non Traditional Abrasive Machining Processes Ultrasonic,
Abrasive Jet and Abrasive Water Jet Machining**

with Score* **67** %



Prof. Adrijit Goswami
Dean, Continuing Education & NPTEL Coordinator
IIT Kharagpur

Jan-Feb 2020
(4 week course)



Indian Institute of Technology Kharagpur



*Continuous online assessment score
To validate and check scores: <https://nptel.ac.in/noc>

NSS Activities

Distribution of food and energy drinks to front line warriors in COVID 19 pandemic



Blood Donation Camp

Blood donation camp has been organized by NSS Unit Aditya College of Engineering & Technology



Sports and Games

Students of Mechanical engineering have participated in volley ball and kabaddi on the occasion of republic day



Industrial Visits

Students of Mechanical Engineering have visited Hinduja National power corporation



Robo Expo

Robotics club Mechanical engineering Department has actively engaged in developing different robots for attending in several technical events and projects, they have organized Robo Expo event in the campus by involving Electronics communication and Computer science students

