



# **ESWAR COLLEGE OF ENGINEERING**

(Approved by AICTE, & Affiliated to JNTUK, A.P.)

**KESANUPALLI (V), NARASARAOPETA-522549, AP**

[www.eswarcollegeofengg.org](http://www.eswarcollegeofengg.org), email:[eswarcollegeofengg@gmail.com](mailto:eswarcollegeofengg@gmail.com)

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## **3. Problem-solving methods**



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Problem-solving methods are fundamental to engineering education, as they equip students with the skills needed to analyze, evaluate, and devise solutions to complex engineering challenges. Here are some problem-solving methods commonly utilized in engineering colleges:

1. **Analytical Problem-Solving:** This method involves breaking down a problem into its constituent parts, identifying relevant variables and constraints, and applying analytical techniques to develop a solution. It often involves mathematical modeling, simulation, and data analysis to understand the problem's underlying principles and relationships.
2. **Design Thinking:** Design thinking is a human-centered approach to problem-solving that emphasizes empathy, creativity, and iteration. It involves understanding user needs, defining problem statements, generating ideas, prototyping solutions, and testing them in real-world contexts. Design thinking encourages interdisciplinary collaboration and the exploration of multiple solutions.
3. **Algorithmic Problem-Solving:** In fields such as computer science and software engineering, algorithmic problem-solving involves developing step-by-step procedures (algorithms) to solve computational problems efficiently. It requires understanding algorithmic complexity, data structures, and algorithm design techniques.
4. **Decision Analysis:** Decision analysis methods help engineers make informed decisions in the face of uncertainty by systematically evaluating alternatives, assessing risks, and considering trade-offs. Techniques such as decision trees, cost-benefit analysis, and multi-criteria decision-making frameworks aid in selecting the best course of action.

By teaching and practicing these problem-solving methods, engineering colleges prepare students to tackle a wide range of engineering challenges effectively and innovatively, contributing to advancements in science, technology, and society.



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**Problem-solving methods:** Students Participate in various inter-college and intra-college technical fests and other competitions such as:

In-house summer training with project development, Regular Assignments based on problems, Mini Project development, Regular Quizzes, Case studies Discussion, Class presentations, Debates , Participation in Inter college events



Case study discussion with students in 003 lab



Class presentations



# ESWAR COLLEGE OF ENGINEERING

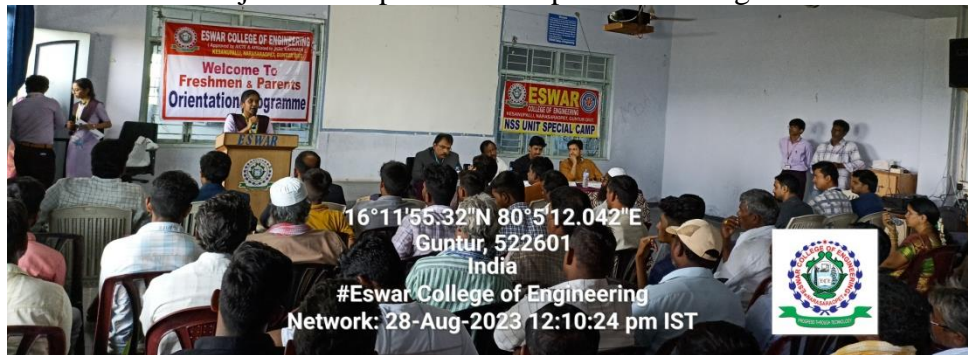
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Mini Project development Participation in college events



16°11'55.32"N 80°5'12.042"E  
Guntur, 522601  
India

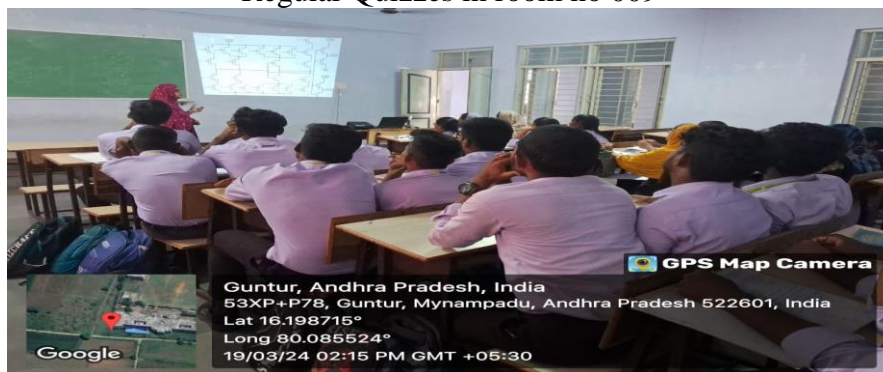
#Eswar College of Engineering  
Network: 28-Aug-2023 12:10:24 pm IST

Anchoring in orientation program



#Eswar College of Engineering  
Network time is not synchronized

Regular Quizzes in room no 009



GPS Map Camera

Guntur, Andhra Pradesh, India  
53XP+P78, Guntur, Mynampadu, Andhra Pradesh 522601, India  
Lat 16.198715°  
Long 80.085524°  
19/03/24 02:15 PM GMT +05:30

Case studies Discussion in digital room 120



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# **ICT Tools**



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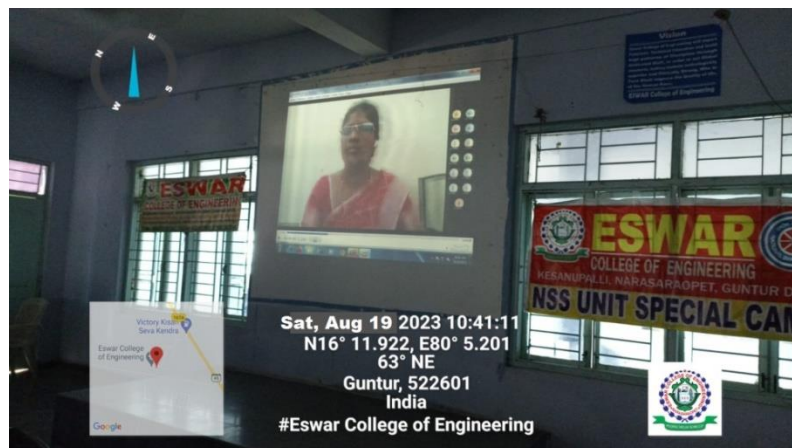
- Use of Projectors , Internet facility , Seminar hall , Online Classes through Zoom, Google Meet, Microsoft Team, Google Classroom, Digital Library resources.



Students using projectors for learning



Students utilizing ms teams for improving skills



Using ICT tools for learning in Room no 202

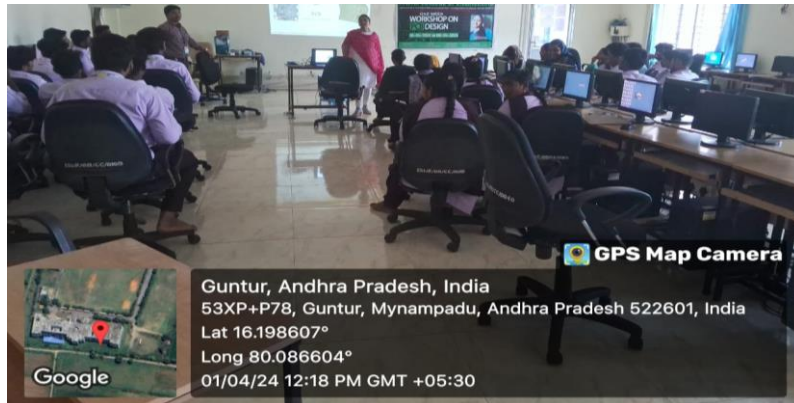


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Students participating in workshop using projector at computer lab 003



Digital Library in Eswar central library

National Digital Library of India (NDLI)

National Digital Library of India (NDLI)










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