NANDHA ENGINEERING COLLEGE, ERODE-638052

DEPARTMENT OF MECHANICAL ENGINEERING

The following Pedagogical initiatives are being practiced to improve quality of teaching learning

- Field trip to the students in the manufacturing industries to understand the practical applications
- In-plant training, Internship, Industrial projects, Industry sponsored labs
- Flipped classroom: Students apply the material through activities like group problem-solving, simulations, and case study reviews.
- Learning by doing: Students will understand the concept by doing the model/prototype practically
- Incorporate Technology in Teaching: Modeling and assembly of component by using CAD as part of Autonomy courses evaluation
- Collaborative learning to promote teamwork and peer-to-peer learning in projects and labs
- Activity based Learning
- Promotion of Interdisciplinary Learning
- MoU with industries and making students interaction
- Industrial training to the faculty members to gain more practical knowledge.
- Industry involvement in the program design and Curriculum design
- Project Based Learning : Students will do mini project from the learning of course
- One credit courses and Value added courses by Industry persons.
- Seminar and Workshop by industry and academic experts
- Use of ICT tools, Youtube videos, NPTEL courses, etc.,

Pedagogical initiatives:

S.No.	Course code and Name	Pedagogical initiatives	Faculty
1	Metrology and Measurements	Field visit	Mr. Muruganantham S
2	Fluid power System	Field visit	Dr. Easwaramoorthi M
3	Power Plant Technology	In-Plant Training	Mr. Velliangiri.B
4	Product Life Cycle Management	Flipped classroom	Dr. Muthukumar M
5	Basics of Mechanical Engineering	Flipped classroom	Mr. Arjun Raj R
6	Hydraulics and Pneumatics course	Flipped classroom	Mr. Sengottaiyan M
7	Manufacturing Processes	Flipped classroom	Dr.vSenniangiri N
8	Metrology and Measurements	Flipped classroom	Dr. Magibalan S
9	Theory of Machines	Learning by doing: Model/Prototype making and demonstration	Mr. Ravichandran D
10	Subtractive Manufacturing	Learning by doing (PBL)	Dr. Senniangiri N
11	Machine Design (Full Autonomy course)	Learning by doing	Dr. Manikandan M
12	Fuel cell technology	Experimental learning	Dr. Muthukumar M
13	Dynamics of Machinery	Experimental learning	Dr. Muthukumar M
14	Automobile Engineering	Learning by seeing	Dr. Easwaramoorthi M
15	Basics of Mechanical Engineering	Learning by seeing	Mr. Arjun Raj R

16	Project work	Collaborative learning	Dr. Muthukumar M
17	Machine Design (Full Autonomy course)	Incorporate Technology in Teaching	Dr. Manikandan M

Other Pedagogical initiatives

S.No.	Pedagogical initiatives
1	Industrial seminar
2	Academic seminar
3	Project exhibition
4	Innovation day
5.	Industrial training to faculty
6	Internship to students
7	Hackathon
8	Google Classroom
9	Youtube videos

E-content in Youtube

S. No.	Faculty	Youtube link
1	Dr. Muthukumar M	https://youtu.be/8ofrSzWPGp4?si=actOJlxe4aqPj1UL
2	Dr. Muthukumar M	https://youtu.be/I9VytgJ6wQE?si=Ev4bIeth9YckJ2Ii
3	Dr. Muthukumar M	https://youtu.be/j2FLpdR0gt4?si=vqfMHtdSOOiIq82t
4	Dr. Easwaramoorthi M	https://youtu.be/OY3Veq7Jsa8?si=AaHxQm-4OgfaZbgM
5	Dr. Ashok kumar B	https://youtu.be/LiBQ9mk5eaw
6	Dr. Senniangiri N	https://youtu.be/xGPZi7WbF9E?si=1KIAlNfosf0qcEbs
7	Dr. Magibalan S	https://youtu.be/6OZs8XRSGpE?si=uMN8hhvbvvIAFvMP
8	Dr. Magibalan S	https://youtu.be/KWGL8yRFumI
9	Mr. Sengottaiyan M	https://youtu.be/afJW6Fq-nKI
10	Mr. Ravichandran D	https://youtu.be/Ka5jNQ9T2Is?si=DoBGBWIemOucCwTj
11	Mr. Ravichandran D	https://www.youtubeeducation.com/watch?v=T5sWUw73qOc
12	Mr. Velliyangiri B	https://youtu.be/VOISvvLJFw?si=HMWAg2pjzq_5iWWG
13	Mr. Arjun Raj R	https://youtu.be/Ffc5wmlyAug?si=t7Zg1zVx41tDe43e
14	Mr. Venkateshnan T	https://youtu.be/mXwXirmubx4
15	Dr. Manikandan M	https://youtu.be/QO2FTbzJHDU?feature=shared
16	Dr. Manikandan M	https://youtu.be/b51KKr7ZatA?feature=shared

17	Dr. Manikandan M	https://youtu.be/6ZpvQPAw-MI?feature=shared
18	Dr. Manikandan M	https://youtu.be/EQApANxn0gs?feature=shared
19	Dr. Manikandan M	https://youtu.be/am2wJbSzprw?feature=shared
20	Dr. Manikandan M	https://youtu.be/SHWkqUAboJ8?feature=shared
21	Dr. Manikandan M	https://youtu.be/r02OBUiLePA?feature=shared
22	Dr. Manikandan M	https://youtu.be/yLrUW6X2OL8?feature=shared
23	Dr. Manikandan M	https://youtu.be/Rkg7XAKRaoc?feature=shared
24	Dr. Manikandan M	https://youtube.com/playlist?list=PLYd9n0OrIJrUEfQRzKXS34Yn25O_CLyXj&feature=shared

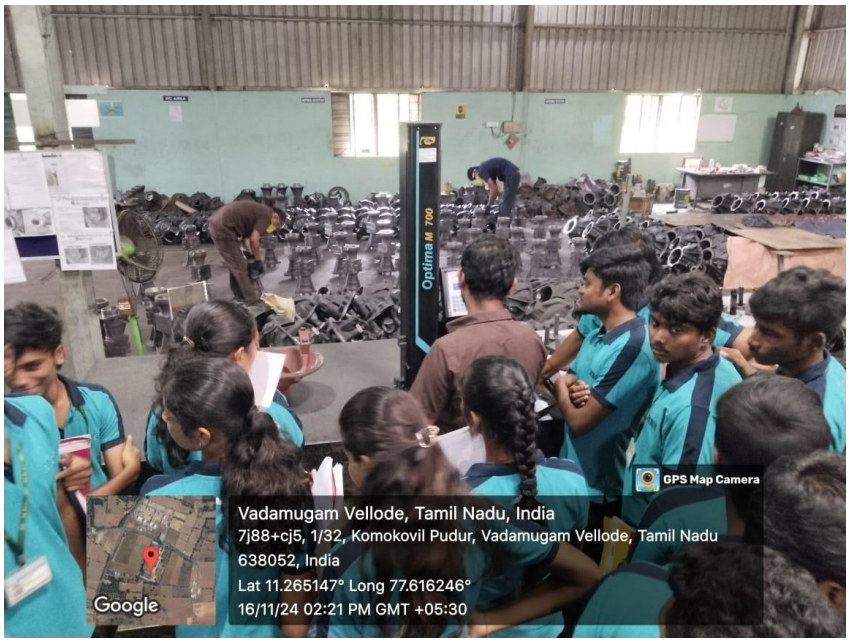

Figure 1. Field trip to Subavalar Industries for Metrology and Measurements course

Figure 2. Field trip to Janatics India Pvt. Ltd. for Fluid Power Systems course

Figure 3. In-Plant Training at Mettur Thermal Power Station for Power Plant Technology course

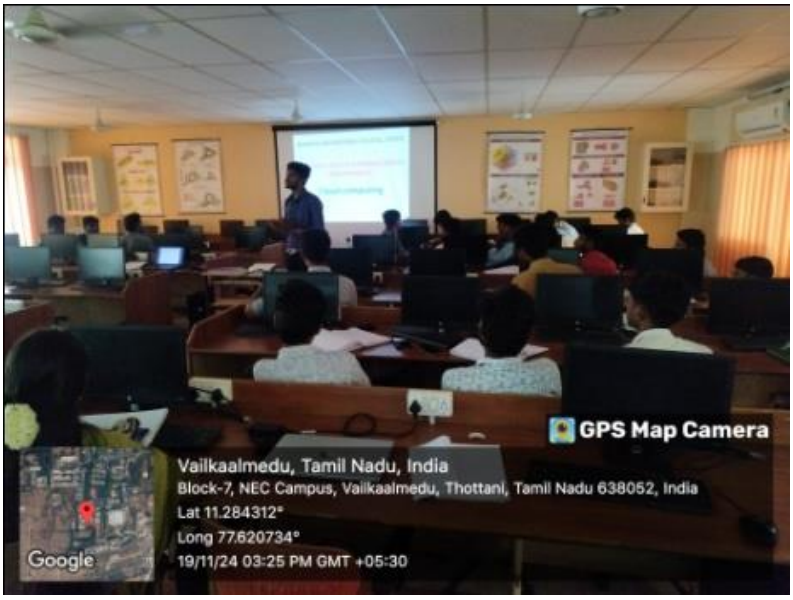

Figure 4. Flipped classroom for Product Life Cycle Management course

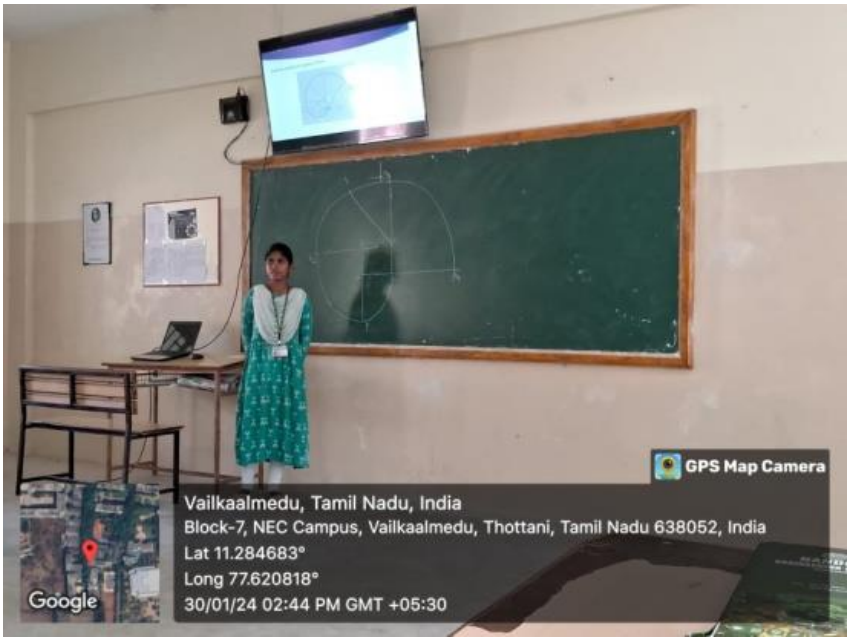

Figure 5. Flipped classroom for Basics of Mechanical Engineering

Figure 6. Flipped classroom for Hydraulics and Pneumatics course

Figure 7. Flipped classroom for Manufacturing Processes course

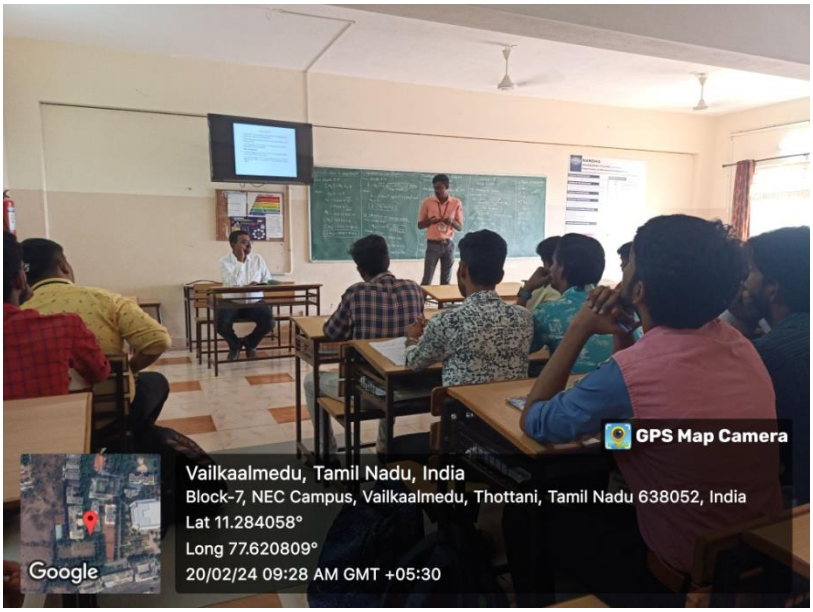

Figure 8. Flipped classroom for Metrology and Measurements course

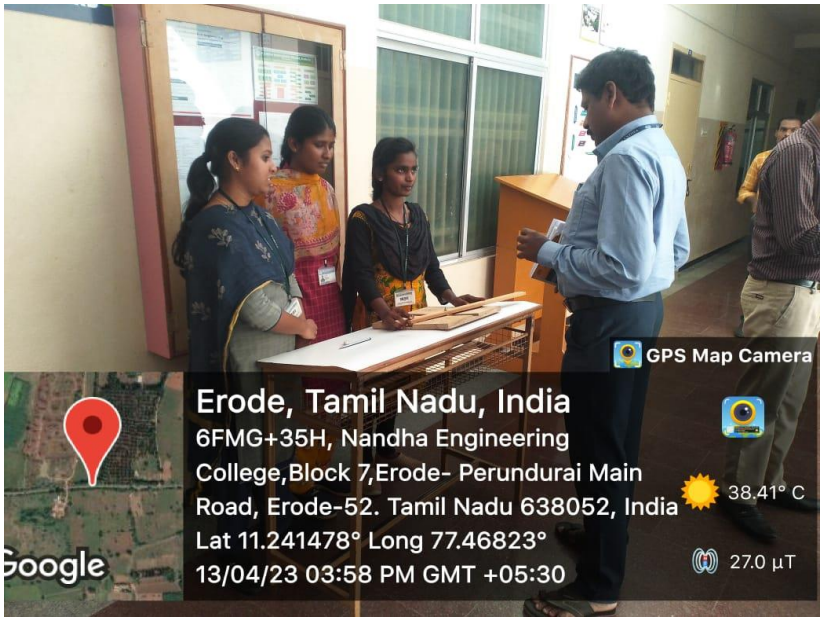

Figure 9. Learning by doing: Model/Prototype making and demonstration by students for Theory of Machines course

Figure 10. Learning by doing for Subtractive Manufacturing Processes (PBL) course

Figure 11a. Learning by doing for Machine Design course (Full Autonomy course)

Figure 11b. Learning by Doing

Figure 12. Experimental learning at Fuel Cell Lab for Fuel cell technology course

Figure 13. Experimental learning for Dynamics of Machiery course

Figure 14. Learning by seeing for Automobile Engineering course

Figure 15. Learning by seeing for Basic Mechanical Engineering course

Figure 16. Collaborative learning for Project work

Figure 17. Incorporate Technology in Teaching: Modeling and Assembly of component by using CAD as part of Autonomy courses evaluation (Machine Design course)

Industrial seminar

Figure 18. Industrial Seminar by SAN Engineering Solutions

Figure 19. Industry Seminar by National Power Training Institute

Project demonstration

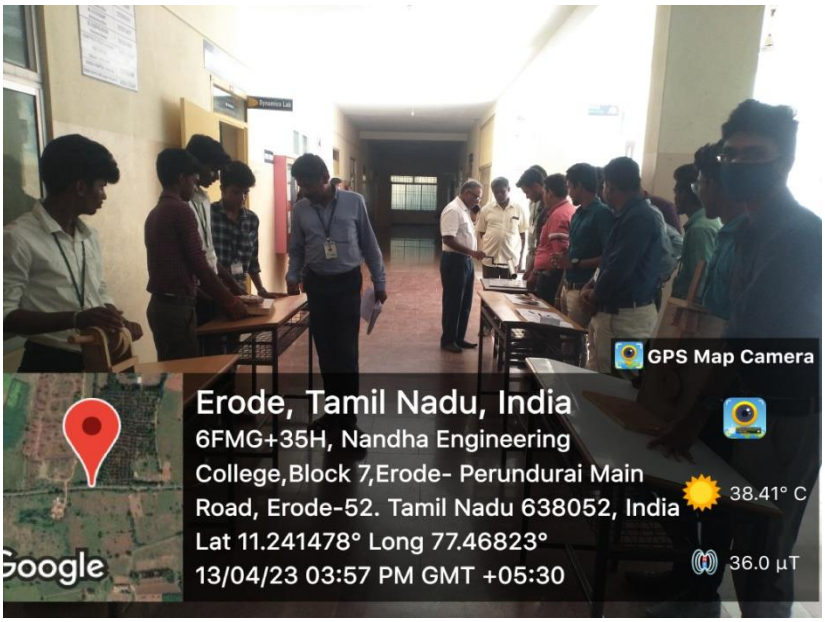

Figure 20. Project demo by students

Innovation Day : Project Exhibition

Figure 21. Innovation Day 2025

Innovation Day 2025 : Project Exhibition

Faculty Industry Training

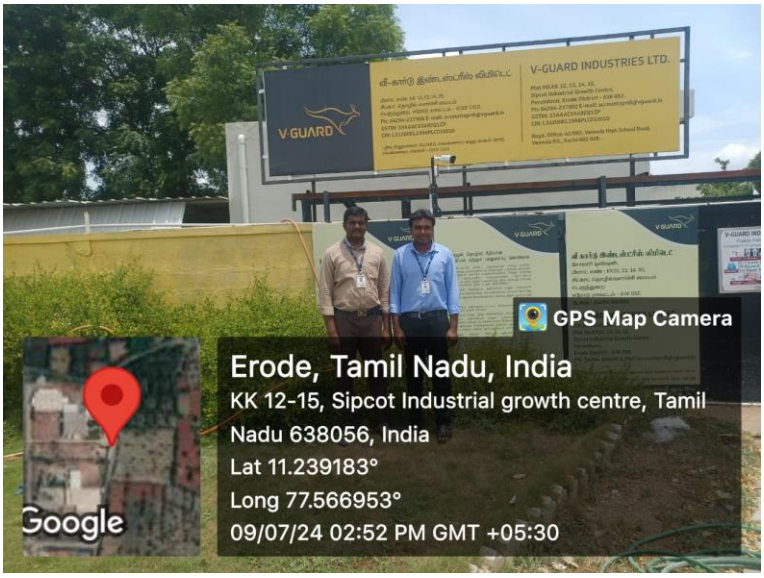

Figure 22. Faculty Industry Training at V-Guard Industries, Perundurai