

AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY
(Approved by AICTE, Permanently Affiliated to JNTU GV, Vizianagaram,
Accredited By NAAC and Recognized under 2(f) & 12 (b) by UGC, New
Delhi)

Tamaram, Makavarapalem, Narsipatnam (RD), Anakapalli-531113



Certificate Course
on

Hybrid Electric Vehicles (HEVs): Trends and Technology

From 21st AUG 2023 to 26th AUG 2023



ORGANIZED BY

DEPT. OF ELECTRICAL & ELECTRONICS ENGINEERING
AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY,
TAMARAM (V), MAKAVARAPALEM (M), ANAKAPALLI-531113

AVANTHI EDUCATIONAL SOCIETY

Avanthi Educational Society under the Leadership of Sri M.Srinivasa Rao garu as chairman was started in the Year 1991. Within a short span of its establishment, the group has made a remarkable stride in the field of education offering various courses at Under Graduate, Post Graduate, Pharmacy & Engineering levels. This milestone is achieved as the institution carved itself to impart quality and career oriented education, countering the challenges of the modern world through planning, dedication, determination, prompt execution and with the innovative ideas of our advisory board. Today, Avanthi Educational Society is proud to have a strength of over 16000 students with 15 institutions under its ambit. It is the path of glory towards the success during the last 25 years. The institution has been adjudged many times as the second best educational institutions in the twin cities and 16th best in all over India through the impartial survey made by the renowned magazine "India Today".

AVANTHI INSTITUTE OF ENGINEERING & TECHNOLOGY

AIET started in the year 1999 and offers various courses at Engineering and PG level. The college is providing with rooms, computer centre, laboratories and seminar hall with audio-visual equipments. Industry Institute interaction is conducted regularly to emphasize on the latest trends in the present market.



It is very near to Narsipatnam. Frequent bus facilities are available both from Visakhapatnam and Narsipatnam. Very safe and secure hostel facility is available for

Girl students. These are the additional facilities besides excellent academic atmosphere in the college campus.

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

The Department of ELECTRICAL & ELECTRONICS ENGINEERING was established in the year 2001 along with the MECHANICAL, ECE and CSE departments. The department has an intake of 60 students. Commencing the academic year 2011, a post-graduate course in Power Electronics and 2014 in Power Systems was started. The department has full fledged laboratories, workshops and P.G. labs. The department is staffed with qualified, experienced and dedicated members who engage in research activities.. The department with active support from the management is aiming to expand its research activities and industrial consultancies.

ABOUT COURSE

Hybrid Electric Vehicles (HEVs) represent a transformative step toward sustainable mobility, combining the efficiency of electric vehicles with the reliability of conventional internal combustion engines. This six-day workshop, “**Hybrid Electric Vehicles: Trends and Technologies,**” is designed to provide participants with a comprehensive understanding of the fundamentals, components, and future advancements in HEVs.

CHIEF PATRON

Smt.M.Ganeswari
President, Avanathi Educational Society

PATRON

Dr. C P V N J Mohan Rao
Principal,
Avanathi Institute Of Engineering And Technology

CHAIRMAN

Dr. T Srinivasa Rao
Head of the Department
Electrical & Electronics Engineering

COORDINATORS

Mr G Rajasekhara Yadav
Asst. Professor

Mr K Durga Rao
Asst. Professor

TOPICS TO BE COVERED

Day 1: Introduction to Hybrid Electric Vehicles (HEVs)

Day 2: Components of HEVs .Electric Motors in HEVs: Types and Applications

Day 3: Energy Management and Efficiency. Energy Flow in HEVs: Understanding the Basics

Day 4: Advanced Technologies in HEVs. Vehicle-to-Grid (V2G) Technology

Day 5: Policy, Standards, and Industry Practices. Emission Standards and Regulations

Day 6: Practical and Future Perspectives. Workshop on HEV Testing and Diagnostics

For any further information Contact Mr G RAJASEKHAR YADAV, Assistant Professor, EEE, and Mr K DURGA RAO. Assistant Professor, EEE



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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Dt. 14-08-2023.

CIRCULAR

A Course on Hybrid Electric Vehicles : Trends and Technology for all the III Year & IV Year students of Electrical & Electronics Engineering Department is scheduled from 21st Aug 2023 to 26th Aug 2023. All the students should attend the course without fail. For any further information Contact Mr.G. Rajasekhar yadav, Assistant Professor, EEE Department may be consulted.

Resource Person :

- 1. Dr. Y.V.Pavan Kumar,
Professor,
School Of Electronics Engineering,
VITAP.**
- 2. M.Malayiappan M.E
Director
Pantech Solutions Pvt Ltd
Chennai.**

**Dr T Srinivasa Rao
HOD
EEE DEPARTMENT**

Copy to: Principal, AIET

Head of the Department
Department of Electrical & Electronics Engg.
Avanathi Institute of Engg & Tech.
Makavarapalem, Visakhapatnam - 531113.



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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING
Hybrid Electric Vehicles (HEVs): Trends and Technology

SYLLABUS

Duration: 21st AUG 2023 to 26th AUG 2023

- Day 1:** Introduction to Hybrid Electric Vehicles (HEVs)
- Day 2:** Components of HEVs .Electric Motors in HEVs: Types and Applications
- Day 3:** Energy Management and Efficiency. Energy Flow in HEVs: Understanding the Basics
- Day 4:** Advanced Technologies in HEVs. Vehicle-to-Grid (V2G) Technology
- Day 5:** Policy, Standards, and Industry Practices. Emission Standards and Regulations
- Day 6:** Practical and Future Perspectives. Workshop on HEV Testing and Diagnostics


COORDINATOR


HOD

Head of the Department
Department of Electrical & Electronics Engg.
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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING
Hybrid Electric Vehicles (HEVs): Trends and Technology

SCHEDULE

Duration: 21st AUG 2023 to 26th AUG 2023

DAY/DATE	Live Session - 1 09.00AM to 12.30 PM	Live Session - 2 1 PM to 4 PM
Monday 21/08 /2023	Overview of Global Trends in Hybrid Electric Vehicles Basics of Electric and Hybrid Vehicles Types: Mild Hybrid, Full Hybrid, Plug-in Hybrid Advantages and Challenges	Vehicle Powertrain Configurations Series, Parallel, and Series-Parallel Systems Case Studies: Popular HEV Models
Tuesday 22/08 /2023	Electric Motors in HEVs: Types and Applications DC Motors, Induction Motors, Permanent Magnet Motors Power Electronics and Controllers	Battery Technology for HEVs Types: Lithium-Ion, Nickel-Metal Hydride, Solid-State Batteries Battery Management Systems (BMS) Hands-on Session: Disassembling an HEV Model for Component Study
Wednesday 23/08 /2023	Energy Flow in HEVs: Understanding the Basics Regenerative Braking Systems Energy Storage and Conversion	Modeling and Simulation of Energy Management Systems Practical Exercise: Energy Flow Analysis Using Simulation Tools
Thursday 24/08 /2023	Vehicle-to-Grid (V2G) Technology Autonomous Features in HEVs Integration of AI and IoT in Hybrid Vehicles	Future Trends: Solar Hybrid Vehicles and Hydrogen Fuel Cells Group Activity: Designing an Ideal HEV for 2030
Friday 25/08 /2023	Emission Standards and Regulations Global and Regional Policies on HEVs Certification and Safety Standards for HEVs	Market Trends and Consumer Behavior Analysis Industry Expert Talk: Challenges and Opportunities in the HEV Industry
Saturday 26/08 /2023	Practical and Future Perspectives	Workshop on HEV Testing and Diagnostics


COORDINATOR


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Department of Electrical & Electronics Engg
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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Hybrid Electric Vehicles (HEVs): Trends and Technology

From 21st AUG 2023 to 26th AUG 2023

III & IV Year Students Attendance

S.N	ROLL NO.	NAME OF THE STUDENT	21/08/23	22/08/23	23/08/23	24/08/23	25/08/23	26/08/23
1	21811A0201	CHALLA PAVAN KUMAR	✓	✓	✓	✓	✓	✓
2	21811A0202	KANNAMREDDI GANESH	✓	✓	✓	✓	✓	✓
3	21811A0203	KUNDRAPU DILIP	✓	✓	✓	✓	✓	✓
4	21811A0204	MAKIREDDY SOMESH	✓	✓	✓	✓	✓	✓
5	21811A0205	MAMIDI PRADEEP	✓	✓	✓	✓	✓	✓
6	21811A0206	PAILA RAVI TEJA	✓	✓	✓	✓	✓	✓
7	21811A0207	PILLA LAHARI	✓	✓	✓	✓	✓	✓
8	21811A0209	REKHA NANI	✓	✓	✓	✓	✓	✓
9	21811A0210	RONGALI VANAJA	✓	✓	✓	✓	✓	✓
10	21811A0211	SOMIREDDI SAI MURALI	✓	✓	✓	✓	✓	✓
11	21811A0213	VURUKUTI JAYA SREE	✓	✓	✓	✓	✓	✓
12	22815A0201	AJARLA SRI HARI RAJU	✓	✓	✓	✓	✓	✓
13	22815A0202	AMALAKATTA SYAM SAI VEERA SATISH NAIDU	✓	X	✓	✓	✓	✓
14	22815A0203	BALIVADA ESWARA SAI	✓	✓	✓	✓	✓	✓
15	22815A0204	BODAVULA SIDDARDHA	✓	✓	✓	✓	✓	✓

16	22815A0205	BODEPU MANIKANTA						
17	22815A0206	GAMPALA SAI SIDDU	✓	✓	✓	✓	✓	✓
18	22815A0207	GANDI YAMANI	✓	✓	✓	✓	✓	✓
19	22815A0208	GOKIVADA ABHIRAM SAI	✓	✓	✓	✓	✓	✓
20	22815A0209	GOLLA NIKHIL	✓	✓	✓	✓	✓	✓
21	22815A0210	GUMMAREGULA RAJESH	✓	✓	X	✓	✓	✓
22	22815A0211	JAKKA RAMAGANESH	✓	✓	✓	✓	✓	✓
23	22815A0212	KALLA PAVAN KUMAR	✓	✓	✓	✓	✓	✓
24	22815A0213	KAMIREDDI RAMA SAI	✓	✓	✓	✓	✓	✓
25	22815A0214	KANCHIPATI JOGI SURESH	✓	✓	✓	✓	✓	✓
26	22815A0215	KARRI BHANU PRASAD	✓	✓	✓	✓	✓	✓
27	22815A0216	KEDARISETTY BHAGAVAN GUPTA	✓	✓	✓	✓	✓	✓
28	22815A0217	KOVVADA KIRAN	✓	✓	✓	✓	✓	✓
29	22815A0218	MAJJI RAJU	✓	✓	✓	✓	✓	✓
30	22815A0219	MAKIREDDI VINAY KUMAR	✓	✓	✓	✓	✓	✓
31	22815A0220	MALLA YASHOVARDHAN SAI SANTOSH	✓	✓	✓	✓	✓	✓
32	22815A0221	MARELLA SAMATHA	✓	✓	✓	✓	✓	✓
33	22815A0222	MATURI JOHN SOLOMON	✓	✓	✓	X	✓	✓
34	22815A0223	MONDEPU AJAY	✓	✓	✓	✓	✓	✓
35	22815A0224	MUKKA BHASKAR RAO	✓	✓	✓	✓	✓	✓
36	22815A0225	NITTA LOVA SATYA NARAYANA	✓	✓	✓	✓	✓	✓
37	22815A0226	PANDURI AKHILESWAR	✓	✓	✓	✓	✓	✓
38	22815A0227	PATNALA ANUSHA	✓	✓	✓	✓	✓	✓
39	22815A0228	ROHITH PANDA	✓	✓	✓	✓	✓	✓

40	22815A0229	RONGALA UPENDRA KUMAR	✓	✓	✓	✓	✓	✓
41	22815A0230	TAKASI RAKESH	✓	✓	✓	✓	✓	✗
42	22815A0231	TAMADAPU HARI PRASAD	✓	✓	✓	✓	✓	✓
43	22815A0232	VALLURU VARAHALA BABU	✓	✓	✓	✓	✓	✓
44	22815A0233	VANJARI SANDHYA RANI	✓	✓	✓	✓	✓	✓
45	22815A0234	VARADA SAI KIRAN	✓	✓	✓	✓	✓	✓
46	22815A0235	VEESAM NAVEEN	✓	✓	✓	✓	✓	✓
47	22815A0236	VEGI SHANMUKH SIVA SOMUNaidu	✓	✓	✓	✓	✓	✓
48	22815A0237	KADAVALA KARTHIK KUMAR	✓	✓	✓	✓	✓	✓
49	22815A0238	KOYLADA SATHISH	✓	✓	✓	✓	✓	✓
50	20811A0201	ADLABOINA BHANUPRAKASH	✓	✓	✓	✓	✓	✓
51	20811A0202	BALASADI JOGINDHAR SAI	✓	✓	✓	✓	✓	✓
52	20811A0204	BOMMURU DINESH	✓	✓	✓	✓	✗	✓
53	20811A0205	CH SUPREETH	✓	✓	✓	✓	✓	✓
54	20811A0206	CHANDAKA VENKATESH	✓	✓	✓	✓	✓	✓
55	20811A0207	CHOLLANGI MADHU NIKHILESH	✓	✓	✓	✓	✓	✓
56	20811A0208	DASARI ANITHA	✓	✓	✓	✓	✓	✓
57	20811A0209	GOLAGANI VARSHINI	✓	✓	✓	✓	✓	✓

58	20811A0210	GUDIVADA VENKATA GANGA VASAVI	✓	✓	✓	✓	✓	✓
59	20811A0211	KALIGIRI LEELA PRASAD	✓	✓	✓	✓	✓	✓
60	20811A0212	KONA SRINUSAI	✓	✓	✓	✓	✓	✓
61	20811A0213	MUSULURI UDAY SATYA NARAYANA	✓	✓	✓	✓	✓	✓
62	20811A0214	NELLIPARTHI AJITH KUMAR	✓	✓	✓	✓	✓	✓
63	20811A0215	PALLA DIVYA	✓	✓	✓	✓	✓	✓
64	20811A0216	PEELA NAGAPARVATHI	✗	✓	✓	✓	✓	✓
65	20811A0217	PETLA LOHITHA	✓	✓	✓	✓	✓	✓
66	20811A0218	PITTA VINAY KUMAR	✓	✓	✓	✓	✓	✓
67	20811A0219	SADASIVUNI K V MONISH	✓	✓	✓	✓	✓	✓
68	21815A0201	CHIKKALA TARUN KUMAR	✓	✓	✓	✓	✓	✓
69	21815A0202	GODABA KISHORE	✓	✓	✓	✓	✓	✓
70	21815A0203	KONDURI SRINIVAS	✓	✓	✓	✓	✓	✓
71	21815A0204	KOTTHALA VEERA VENKATA GANESH	✓	✓	✓	✓	✓	✓
72	21815A0206	NAGARAPATI NARAYANARAO	✓	✓	✓	✓	✓	✓
73	21815A0207	NAKKA UPENDRA KUMAR	✓	✓	✓	✓	✗	✓
74	21815A0208	PAILA KANAKA MAHALAKSHIMI	✓	✓	✓	✓	✓	✓

75	21815A0209	PALASI SIVA LEELA PRASAD	✓	✓	✓	✓	✓	✓
76	21815A0210	PUREDDY KEDARESWARE	✓	✓	✓	✓	✓	✓
77	21815A0211	RAMATHOTA SANTOSH DILEEP	✓	✓	✓	✓	✓	✓
78	21815A0212	SILAPARASETTI SOWJANYA	✓	✓	✓	✓	✓	✓
79	21815A0213	YADALA TARUN KUMAR	✓	✓	✓	✓	✓	✓
80	21815A0214	YEDLA NAVYA GANGA MANI DEVI	✓	✓	✓	✓	✓	✓
81	21815A0215	PANDIRI BHASKARA PRASAD	✓	✓	✓	✓	✓	✓
82	21815A0216	TAMANARA DIVAKAR	✓	✓	×	✓	✓	✓
83	21815A0217	KANKIPATI BALA SIVA NAGENDRA BABU	✓	✓	✓	✓	✓	✓


COORDINATOR


HOD

Head of the Department
 Department of Electrical & Electronics Engg.
 Avanathi Institute of Engg & Tech.
 Makavarapalem, Visakhapatnam - 531113.



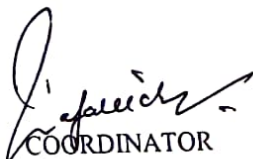
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DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

Hybrid Electric Vehicles (Hevs): Trends And Technology

21st AUG 2023 to 26th AUG 2023




COORDINATOR


Head of the Department
Department of Electrical & Electronics Engg
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Certificate of Participation

This is to certify that Mr./Ms. _____ of _____ has participated in the Certificate Course entitled on **HYBRID ELECTRIC VEHICLES (HVES) : TRENDS AND TECHNOLOGY** during from **21st AUG 2023 to 26th AUG 2023** was organised by the Department of **ELECTRICAL AND ELECTRONICS ENGINEERING** at Avanthi Institute of Engineering and Technology

Coordinator

HOD

Principal



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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Dt.28/08/2023

BRIEF REPORT

Department of Electrical & Electronics Engineering, Avanthi Institute of Engineering and Technology had organized a certificate course on " Hybrid Electric Vehicles (HEVs): Trends and Technology" during 21st AUG 2023 to 26th AUG 2023.


The first speaker, **Dr.Y.V.Pavan kumar, Professor, School Of Electronics Engineering, VITAP**, explained the **core principles of hybrid electric vehicles**, discussing different powertrain architectures such as series, parallel, and plug-in hybrids. He emphasized the importance of hybrid technology in achieving better fuel efficiency and reducing environmental impact. "Hybrid vehicles are the bridge between traditional fuel-driven cars and fully electric vehicles. Understanding their working principles is crucial for aspiring engineers and automotive professionals," he remarked.

The second expert, **M.Malaiyappa ME, Pantech Solutions Pvt Ltd, Chennai**. shed light on **battery management systems, energy storage solutions, and the challenges of hybrid vehicle adoption**. He highlighted the advancements in lithium-ion battery technology and the importance of efficient energy management. "Battery technology is the heart of electric mobility. The future will see more innovations in fast charging and improved battery lifespan," he stated during his session.

The workshop was designed to be highly interactive, with Q&A sessions, technical discussions, and real-world case studies. Participants had the opportunity to explore hybrid vehicle components, power management strategies, and the integration of regenerative braking systems.

The event concluded with a panel discussion and certificate distribution. Participants expressed appreciation for the depth of knowledge shared by the resource persons. Many students found the sessions insightful, particularly the discussions on the future of hybrid and electric mobility. thanked the resource persons for their valuable contribution and encouraged students to explore career opportunities in the evolving field of electric and hybrid vehicle technology.


COORDINATOR


Dr. T Srinivasa Rao
Head of the Department
Electrical & Electronics Engineering

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Department of Electrical & Electronics Engg
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