



AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, Permanently Affiliated to JNT University Kakinada, ACCREDITED BY NAAC and Recognized under 2(f) & 12 (b) by UGC, New Delhi)
Tamaram, Makavarapalem, Narsipatnam (RD), Visakhapatnam-531113

*Certificate Course
on*

ELECTRICAL VEHICLE TECHNOLOGY

From 14TH OCT 2019 TO 19TH OCT 2019



ORGANIZED BY

**DEPT. OF ELECTRICAL & ELECTRONICS ENGINEERING
AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY,
TAMARAM (V), MAKAVARAPALEM (M),
VISAKHAPATNAM-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 19 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 and to 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 1999 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

Environmental concerns due to emissions and the depleting fossil resources are turning the attention of the automobile manufactures and the public towards renewable sources like solar and wind which are carbon emission free. Conventional engines in the automobiles are replaced by battery and electrical motors which can be designed to seamlessly suit the powering requirements with suitably designed power converters. The important components of the system are the battery charging stations

which have AC or DC inputs from the grid network or directly from the RES, batteries in the vehicles, converters and electric motors. The government is encouraging research in EV due to the advantages with monetary benefits to the manufacturers and users.

TOPICS TO BE COVERED

- **Day-1:** Overview of Electric Vehicle Technology and Power Quality Issues of EV Integration with Grid
- **Day-2:** About Energy Storage for Electric Vehicles
- **Day-3:** Explain how Power Electronic Converters works for Electric Vehicles and EV Simulation and BMS testing using OPAL-RT System
- **Day-4:** Best Practices for Modelling Popular Traction Motors (PMSM/BLDC) and Multiphysics Simulation of Traction Motors
- **Day-5:** Traction Motor Modelling Using ANSYS Motor CAD
- **Day-6:** Battery Modelling and Simulation using ANSYS Solution

For any further information Contact Mr P VARAHALA DORA, Assistant Professor, EEE, and Mr.S RISHIKESH Assistant Professor, EEE

CHIEF PATRON

Smt.M.Gnaneswari
President, Avanthi Educational Society

PATRON

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

CHAIRMAN

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

COORDINATORS

Mr P Varahala Dora
Asst. Professor

Mr S Rishikesh,
Asst. Professor



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Dt. 11th Oct, 2019


DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

CIRCULAR

A short term Course on *Electrical Vehicle Technology* for all the I & II Year students of Electrical & Electronics Engineering Department & I Year students of Electronics & Communication Engineering Department is scheduled from 14th Oct 2019 to 19th Oct 2019. All the students should attend the course without fail. For any further information contact course coordinators Mr S Rishikesh, Assistant Professor and Mr P Varahala Dora, Assistant Professor, EEE Department.

Resource person:

1. Dr. R. K. Behara
Professor
IIT Patna
2. Dr. P. Mallikarjuna Rao
Professor
Andhra University
Visakhapatnam


Dr. T. Srinivasa Rao
Head of the Department
EEE

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

Copy to: Principal, AIET



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ELECTRICAL VEHICLE TECHNOLOGY

Duration:14-10-2019 to 19-10-2019

SYLLABUS

Day 1: Overview of Electric Vehicle Technology

Day 2:Energy Storage for Electric Vehicles

Day 3:Power Electronic Converters for Electric Vehicles

Day 4:Best Practices for Modelling Popular Traction Motors (PMSM/BLDC)

Day 5:Traction Motor Modelling Using ANSYS Motor CAD

Day6: Battery modelling and Simulation using ANSYS solution

P. D. D. S.
COORDINATOR

[Signature]
HOD

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



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**ELECTRICAL VEHICLE TECHNOLOGY
SCHEDULE**

Duration:14-10-2019 to 19-10-2019

DAY/DATE	Live Session - 1 09.00AM to 12.00PM	Live Session - 2 1 PM to 4 PM
Monday 14/10/2019	Overview of Electric Vehicle Technology	Power Quality Issues of EV Integration with Grid
Tuesday 15/10/2019	Energy Storage for Electric Vehicles	Power Electronic Converters for Electric Vehicles
Wednesday 16/10/2019	Power Electronic Converters for Electric Vehicles	EV Simulation and BMS testing using OPAL-RT System
Thursday 17/10/2019	Best Practices for Modelling Popular Traction Motors (PMSM/BLDC)	Multiphysics Simulation of Traction Motors
Friday 18/10/2019	Traction Motor Modelling Using ANSYS Motor CAD	Battery types, Battery performance/materials/cell modelling, BMS Design Considerations
Saturday 19/10/2019	MATLAB models of cell pack MATLAB Models of algorithm	Battery Modelling and Simulation using ANSYS Solution and STC Validation

Pooja
COORDINATOR

[Signature]
HOD
Head of the Department
Department of Electrical & Electronics Engg.
Avanthi Institute of Engg & Tech.
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Electrical Vehicle Technology
From 14th Oct 2019 to 19th Oct 2019

1st & 2nd EEE & 1st ECE Year Students Attendance

S.NO	ROLL NUMBER	STUDENT NAME	14 Oct	15 Oct	16 Oct	17 Oct	18 Oct	19 Oct
1	19811A0201	CHENNA YOGINDRAPRASAD	✓	✓	✓	✓	✓	✓
2	19811A0202	KURAMDASU SRINU	✓	✓	✓	✓	✓	✗
3	19811A0203	MADAGALA VIJAY	✓	✓	✓	✓	✓	✓
4	19811A0204	MOLLI BHOLAKSHMI	✓	✓	✓	✓	✓	✓
5	19811A0205	MOLLI SAI GANESH	✓	✓	✓	✓	✓	✓
6	19811A0206	NEELAPATI NAGA PRAVEEN	✓	✓	✓	✓	✓	✓
7	19811A0207	SARAKAPU SURESH	✓	✓	✓	✓	✓	✓
8	19811A0208	MAJJI SUMANTH	✓	✓	✓	✓	✓	✓
9	19811A0401	ADATRAVU BHARGAVI	✗	✓	✓	✓	✓	✓
10	19811A0402	ALLU ROOPA	✓	✓	✓	✓	✓	✓
11	19811A0404	BALIJI YAMINI	✓	✓	✓	✓	✓	✓
12	19811A0405	BEVARA DIVYASREE	✓	✓	✓	✓	✓	✓
13	19811A0406	BHAVANA BUDDA	✓	✓	✓	✓	✓	✓
14	19811A0407	BODAPATI SAMU SRI	✓	✓	✓	✓	✓	✓
15	19811A0408	BYLAPUDI VINITH	✓	✓	✓	✓	✓	✓
16	19811A0409	KANTIPAMU SASIKALA	✓	✓	✓	✓	✓	✓
17	19811A0410	CHITIKALA PRADEEPCHANDRA	✓	✓	✓	✓	✓	✓
18	19811A0411	CHITRADA RAMESH	✓	✓	✓	✓	✓	✓
19	19811A0412	CHOCHUPATLA KUSUMALATHA	✓	✓	✓	✓	✓	✓
20	19811A0413	CHUA BALAJI	✓	✓	✓	✓	✓	✓
21	19811A0414	DANDA SNEHA	✓	✓	✗	✓	✓	✓
22	19811A0415	DEENAMKONDA GOPAL RAJU	✓	✓	✓	✓	✓	✓
23	19811A0416	DEEPTHI PEDAPATI	✓	✓	✓	✓	✓	✓
24	19811A0417	GANISETTY DIVAYA JYOTHI	✓	✓	✓	✓	✓	✓
25	19811A0418	GANUGULA BHARAT KUMAR	✓	✓	✓	✓	✓	✓
26	19811A0419	GAVIREDDI DEVI	✓	✓	✓	✓	✓	✓
27	19811A0420	GEDDAM TEJASWI	✓	✓	✓	✓	✓	✓
28	19811A0421	KARAKA PYDIRAJU	✓	✓	✓	✓	✓	✓
29	19811A0422	KEERTHI ROHINI	✓	✓	✓	✓	✓	✓
30	19811A0423	KEMBURU SAISREE	✓	✓	✓	✓	✓	✓
31	19811A0424	KILAPARTHI SAI KANNAYYA NAIDU	✓	✓	✓	✓	✓	✓
32	19811A0425	KODA MANIKANTA	✓	✓	✓	✓	✓	✓
33	19811A0426	KOTLA KRISHNA KUMAR	✗	✓	✓	✓	✓	✓
34	19811A0427	KAMBALA LIKHITHA	✓	✓	✓	✓	✓	✓
35	19811A0428	MEDE NAGA SRAVANI	✓	✓	✓	✓	✓	✓

36	19811A0429	MENDI DENIL	✓	✓	✓	✓	✓	✓
37	19811A0430	MUNASALA HEMA LATHA	✓	✓	✓	✓	✓	✓
38	19811A0431	MUPPANADAM VENKATA MANIKANTA SAI	✓	✓	✓	✓	✓	✓
39	19811A0432	NADIGATLA MAHALAKSHMI	✓	✓	✓	✓	✓	✓
40	19811A0433	NAKKA GANESH	X	✓	✓	✓	✓	✓
41	19811A0434	NAKKA MANASA	✓	✓	✓	✓	✓	✓
42	19811A0435	PADI DEVI	✓	✓	✓	✓	✓	✓
43	18811A0201	BENIYA GNANESWARA RAO	✓	✓	✓	✓	✓	✓
44	18811A0202	CHACHUPATLA ROSHINI	✓	✓	✓	✓	✓	✓
45	18811A0203	KILLI YOGESH	✓	✓	✓	✓	✓	✓
46	18811A0204	KOROPOLU BHAGYARAJU	✓	✓	✓	✓	✓	✓
47	18811A0205	LALAM HEMANTH KUMAR	✓	✓	✓	✓	✓	✓
48	18811A0206	MURUKUTTI PREMAKUMAR	✓	✓	✓	✓	✓	✓
49	18811A0207	PAILA SAIRAM	✓	✓	✓	✓	✓	✓
50	18811A0208	THOTA VASU	✓	✓	✓	✓	✓	✓
51	18811A0209	VEMULAPUDI MAHESH	✓	✓	✓	✓	✓	✓
52	19815A0201	ADDURU SAI KUMAR	✓	✓	✓	✓	✓	✓
53	19815A0202	BANDARU HEMANTH KUMAR	✓	✓	✓	✓	✓	✓
54	19815A0203	BANDARU NAIDU	✓	✓	✓	✓	✓	✓
55	19815A0204	BANTU LAKSHMANA RAO	✓	✓	✓	✓	✓	✓
56	19815A0205	BHEEMARASETTI ADITYA VENKATESWARA RAO	✓	✓	X	✓	✓	✓
57	19815A0206	BONGU RAVIKUMAR	✓	✓	✓	✓	✓	✓
58	19815A0207	CHALAPAREDDY JAGAN KUMAR	✓	✓	✓	✓	✓	✓
59	19815A0208	CHUKKA SAIRAJ	✓	✓	✓	✓	✓	✓
60	19815A0209	DADI CHINNA	✓	✓	✓	✓	✓	✓
61	19815A0210	DEVAREDDY SRINU	✓	✓	✓	✓	✓	✓
62	19815A0211	GANAGALLA SATISH	✓	✓	✓	✓	✓	✓
63	19815A0212	GATREDDI TEJA	✓	✓	✓	✓	✓	✓
64	19815A0213	GOLLU VENKATA RAMANA	✓	✓	✓	✓	✓	✓
65	19815A0214	GUMMIDI JAGADEESH	X	✓	✓	✓	✓	✓
66	19815A0215	KONA SIVA GANESH	✓	✓	✓	✓	✓	✓
67	19815A0216	KONATHALA GOPINADH	✓	✓	✓	✓	✓	✓
68	19815A0217	KOTHAPALLI VEERA SAI	✓	✓	✓	✓	✓	✓
69	19815A0218	KUNDURU RAGA SUDHA	✓	✓	✓	✓	✓	✓
70	19815A0219	LAGUDU MOHAN SIVA DURGA PRASAD	✓	✓	✓	✓	✓	✓
71	19815A0220	LANKA NAVEEN	✓	✓	✓	✓	✓	✓
72	19815A0221	LEKKALA SWARNALATHA	✓	✓	✓	✓	✓	✓
73	19815A0222	LALAM DURGA PRASAD	✓	✓	✓	✓	✓	✓
74	19815A0223	MAMIDI LOKESH	✓	✓	✓	✓	✓	✓
75	19815A0224	MATTURTHI BHARGAVA	✓	✓	✓	✓	✓	✓
76	19815A0225	NADIPALLI PUSHPANJILI	✓	✓	✓	✓	✓	✓
77	19815A0226	NAKKA THARUNKUMAR	✓	✓	✓	✓	✓	✓
78	19815A0227	PATCHARA SIVA KUMAR	✓	✓	✓	✓	X	✓
79	19815A0228	PATNALA DURGA PRASADU	✓	✓	✓	✓	✓	✓
80	19815A0229	POLAVARAPU RAM KARUN KUMAR	✓	✓	✓	✓	✓	✓

81	19815A0230	SETTI SWAMY	✓	✓	✓	✓	✓	✓
82	19815A0231	SHEIK SHARIFUDDIN	✓	✓	✓	✓	✓	✓
83	19815A0232	THAMMANA YASWANTH	✓	X	✓	✓	✓	✓
84	19815A0233	TUMPALA MOHAN MANU	✓	✓	✓	✓	✓	✓
85	19815A0234	VANTEDDU LINGA CHAKRADHAR	✓	✓	✓	✓	✓	✓
86	19815A0235	VARADI LEELA SAI	✓	✓	✓	✓	✓	✓
87	19815A0236	YETTULA KIRAN KUMAR	✓	✓	✓	✓	X	✓
88	19815A0237	ARUGULA APARNA	✓	✓	✓	✓	✓	✓
89	19815A0238	PARAVADA PAVANKUMAR	✓	✓	✓	✓	✓	✓

DDose
Coordinator

[Signature]
HOD

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



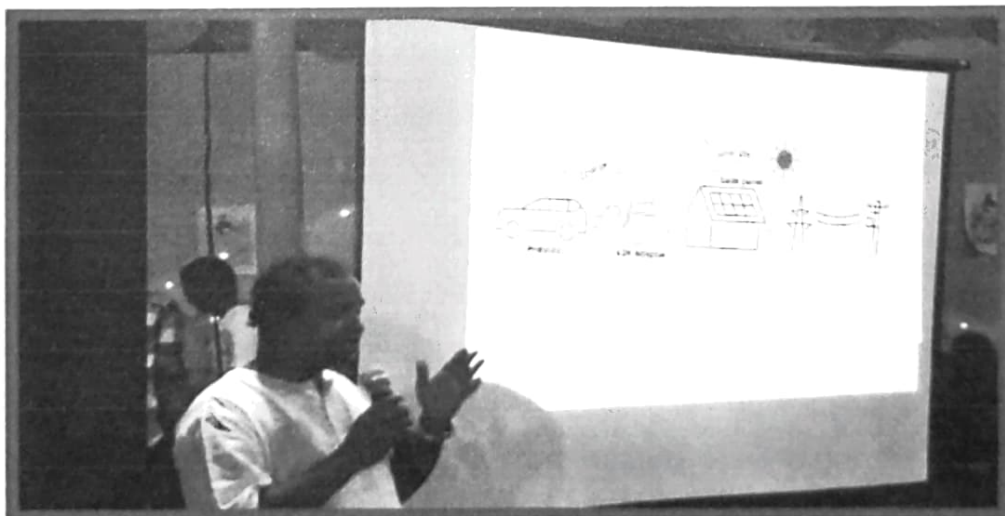
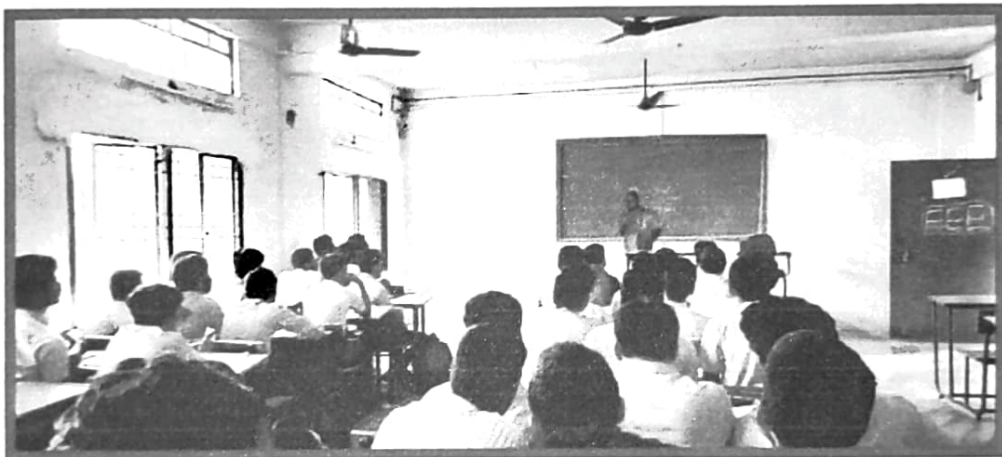
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Visakhapatnam-531113

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

a course on **Electrical Vehicle Technology**

14-10-2019 to 19-10-2019



pdv/c
Coordinator

[Signature]
HOD
EEE Department

Head of the Department
Department of Electrical & Electronics Engg.
Avanthi Institute of Engg & Tech.
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Certificate of Participation

This is to certify that Mr./Ms. _____ of
_____ has participated in the Certificate Course entitled
on **ELECTRICAL VEHICLE TECHNOLOGY** during from 14TH OCT 2019 to 19TH OCT 2019
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: 23-10-2019


BRIEF REPORT

Department of Electrical and Electronics Engineering, Avanthi Institute of Engineering and Technology had organized a certificate course on "Electrical Vehicle Technology" during 14-10-2019 to 19-10-2019

We had Resource Person Dr. R. K. Behara, Professor IIT Patna, took over the session with introduction of renewable energy resources and its importance. The session started with the basic essential topics and key concepts of drive train technology was explained in brief.. Sir explained drive train topologies and fuel efficiency analysis with DC and AC machines for propulsion, energy management strategies and important role of energy efficiency in designing and modelling of drive trains.

Dr. P. Mallikarjuna Rao Professor Andhra University Visakhapatnam explained battery modelling and simulation using ANSYS solution and also he took a practice session on battery modelling and simulation using ANSYS solution and also Various applications such as climate control and hybrid train was discussed. Students responded quickly to the speaker and one of the students Ch Bhanu Tejaswini was appreciated for his quick and accurate response. The session ended with a vote of thanks to the speakers.


Coordinator


Head of the Department
Head of the Department
Department of Electrical & Electronics Engg.
Avanthi Institute of Engg & Techn.
Makavarapalem, Visakhapatnam - 531113.