



AVIT
AARUPADAI VEEDU INSTITUTE OF TECHNOLOGY



**VINAYAKA MISSION'S
RESEARCH FOUNDATION**
(Deemed to be University under section 3 of the UGC Act 1956)

CENTRE FOR BOSCH AUTOMOTIVE RESEARCH



Centre for Bosch Automotive Research

AVIT - Bosch Training Centre,

Aarupadai Veedu Institute of Technology,

Vinayaka Nagar, Old Mahabalipuram Road, Paiyanoor, Chennai, Tamil Nadu 603104

Phone : +91-98413 23772 E-mail : saravanakumar@avit.ac.in



BOSCH

Centre Overview

Aarupadai Veedu Institute of Technology and Bosch have come together to set up a state of the art Joint Training Certification Centre at AVIT premises to provide Automotive aftermarket Training.

The Centre has been equipped with the latest Diagnostic tools, Air-conditioning handling device and Test Work Benches for Automotive Electrical system.

This Joint Certification Centre aims to provide hands on experience for all the trainees on current technologies that are in use in an Automotive Industry.

Vision

To be a centre of excellence in Automotive Training by imparting relevant skills with State of the art equipment's

Mission

Interact with all the stakeholders to design and deliver curriculum that is relevant to automotive industry.

Produce students with Hands on exposure on technologies that bridge the industry academia gap.

Major Research Areas

Vehicle Air Conditioning Handling System

- Refrigerant top up, Drain and Refilling, and Leakage Test



Auto Electrical Test Bench

- Testing of 12 volt and 24 volt starter motor and alternator testing with AC and DC current source.



Major Facilities with Training

Vehicle Air Conditioning Handling System (Bosch Model_ACS651)

Objective

To know the handling of Bosch Auto Air-Conditioning systems with the vehicle and its safe connections.

Course Content

- ▶ Components of Bosch Auto Air-conditioning system and its working.
- ▶ Handling of auto air-conditioning device – how to connect the compressor oil and refrigerant fluid with the device.
- ▶ Handling of auto air-conditioning device – how to connect safely the device with the vehicle air-conditioning system (both low compression and high compression hoses) without any leakage.
- ▶ How to top up the refrigerant fluid/gas into a vehicle A/C system, Drain the fluid/gas, testing of leakage and refilling of appropriate capacity of refrigerant fluid/gas into a vehicle A/C I system – Both in Manual mode and Automatic mode.



Major Research Areas

Vehicle Diagnostics Tool

- How to handle the tool (identifying the location of diagnostic socket pin in the vehicle, connection with software and vehicle),
- Diagnosis of Engine control (search an engine control system with the use of tool and software, identifying errors, how to erase/remove errors, how to control the variables such as engine acceleration, engine speed, engine knock, etc.).
- Diagnosis of various safety devices implemented in the vehicle such as Air-bag, Seat belt, Anti-lock braking system, Active suspension system, Cruise control, GPS/Vehicle tracking system, etc.



Major Facilities with Training

Vehicle Diagnostics Tool With Esi-Tronic Software



Objective

To know on the control system of engine and various safety devices incorporated in the vehicle.

Course Content

- ▶ Handling of Bosch Diagnostics tool – how to handle ESI-tronic software to diagnose the vehicle electronic control system, identifying the diagnostic socket pin in the vehicle to connect the tool with the device, connections between the tool and software, connections between the tool and vehicle.
- ▶ Diagnosis of each vehicle control system (Engine, Air bag, Anti-lock braking system, Cruise control system, Seat Belt, Power steering, Active suspension system, GPS/vehicle tracking system etc.) – how to find the fault with the input sensors or output actuators in each control system with the vehicle, how to erase/remove those faults/errors, how to optimize the control variables such as engine speed, acceleration, engine knock and other variables with diagnostic tool.

Major Facilities with Training

Auto Electrical Test Bench

Objective

To know how to test Starter motor and Alternator with Bosch Auto Electrical Test Bench with AC and DC supply

Course Content

► Starter Motor:

Handling of Bosch Auto Electrical Test Bench – how to connect starter motor with the test bench, connections between test bench and starter motor, and between test bench and battery, Testing of starter motor with DC and AC supply, discharging of battery through DC supply, Use of both 12 volt and 24 volt batteries.



► Alternator:

Handling of Bosch Auto Electrical Test Bench – how to connect alternator with the test bench, connections between test bench and alternator, and between test bench and battery, Testing of alternator with drive from built in motor, charging of battery. Use of both 12 volt and 24 volt batteries.



Major Facilities with Training Battery Charger And Load Tester



Battery Charger



Battery Load Tester

Objective

To know the charging of battery with proper current limit and testing of battery with load drop.



Battery Tester

Course Content

- ▶ Battery Charger: Handling of battery charger with respective terminals, charging of battery – 12 volt and 24 volt, current limit setting.
- ▶ Battery Load Tester: Handling of battery load tester with respective terminals, voltage drop in battery with supply consumption, Voltage stored in battery.
- ▶ Battery Tester: Handling of battery tester with respective terminals, checking of battery condition.

Targetted Participants

- ▶ School Students:

Under Institutional Social Responsibility (ISR) activity, provided “Skill Development Course on Trouble Shooting in Two Wheelers” to the school students residing in village area.



Targetted Participants

► I.T.I and Polytechnic Students:

Provided “One day workshop on Automobile Mobility Solutions using Bosch Equipment” to Polytechnic students.



► Engineering Students

Provided “One Day Workshop on IC Engines and its Control System” to Engineering students.

Training To International Students

► Organized 3 days training on “International Skill Development Program on Vehicle Electronic Control System” and trained around 70 students from Komolcha Institute of Technology, Wollo University, Ethiopia through online mode.



Department of Mechanical Engineering - AVIT,
Wollo University, Komolcha Institute of
Technology (KIoT) - Ethiopia Jointly Organizes



International Skill Development Program on
Vehicle Electronic Control System
08.04.2021 to 10.04.2021

Trainers : Dr. M Saravankumar., AP / Mech, AVIT | Mr. N Shivakumar., AP / Mech, AVIT



e-Certificate will be provided to all the participants

Mr. Syed Mohammed, Director-International Relations - VMRF
Prof. P. Rajasankaran, Deputy Registrar (Admin.) VMRF
Dr. K. L. Shanmugasubban, Principal, AVIT
Dr. B. Vijendra Babu, Vice Principal (Part Time Studies)- AVIT
Dr. S.P. Sangeetha, Vice Principal (Academics)- AVIT
Prof. L. Prabhu, Vice Principal (Admin.)- AVIT B RBD / Mech

Dr. Malaku Tamene, Scientific Director - KIoT
Dr. Habtamu Mohammed,
Deputy Scientific Director - KIoT
Dr. Anteneh Mohammed, Dean (Mech) - KIoT
Mr. Jemal Mohammed, HOD(Mech) - KIoT
Dr. S.Prabakar, Facilitator (Mech) - KIoT

No. of Credit : 1 Credit | Mode of Course : Microsoft Teams
Society of Automotive Engineers - Student Chapter (SAE) &
Association of Mechanical Engineers of AVIT (AMEA)

For Admission Contact @ +91 87545 52018, +91 97894 81724, +91 87545 41024

Visitors - Bosch Lab





Centre for Bosch Automotive Research

AVIT - Bosch Training Centre

**Aarupadai Veedu Institute of Technology
Vinayaka Nagar, Old Mahabalipuram Road,
Paiyanoor, Chennai, Tamil Nadu 603104**

Phone : +91-98413 23772

E-mail : saravanakumar@avit.ac.in



BOSCH