



Advisory Board Meeting

SAE Credentialing: Vehicle Electrification program

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SAE Credentialing Portfolio

Certifications

- Vehicle Electrification
 - CVEP, CVEES
- Design Review Based on Failure Modes Program
 - DRBFM-CP, DRBFM-CE

Certificate of Competency / Mastery

- Vehicle Electrification Certificate of Competency
- DRBFM Certificate of Competency
- HEV Advanced Diagnostics Certificate of Competency
- Engine Controls Certificate of Mastery – Diesel

Curriculum Certificates

- Diesel Technology
- General Management and Leadership
- Product Engineering Tools and Methods
- Professional and Legal Issues
- SI Engine
- Transmission / Drivetrain
- Vehicle Dynamics



SAE Credentialing – Vehicle Electrification Program



SAE Vehicle Electrification Credentialing Program : 3 Levels



**Certified Expert
(CVEES)**

**Certified Professional
(CVEP)**

**Certificates of
Competency
(VE Fundamentals &
Safety and
HEV Diagnostics)**

SAE Vehicle Electrification Credentialing Program : 3 Levels



Vehicle Electrification (VE) Program

- Certified VE Engineer / Scientist (CVEES)
 - Mechanical Propulsion—Transmissions & IC Engines
 - Energy Storage
 - Power Electronics & Controls
- Certified VE Professional (CVEP)
- VE Fundamentals and Safety Certificate of Competency
- Advanced HEV Diagnostics Certificate of Competency

Vehicle Electrification Program: Industry Developed and Vetted



Development Workshop – 36 Hours *(March 2012)*

Participating Organizations

- General Motors
- Ford Motor Company
- Caterpillar
- GKN Driveline
- Yazaki
- Mechatronics
- Prior, A123 Systems
- Dow
- Spartan Chassis
- Magna eCar
- IAV
- BAM EV
- Virginia Tech University

Development Workshop II – 8 hours *(August 2013)*

Participating Organizations

- General Motors
- Ford Motor Company
- GKN Driveline
- Caterpillar
- Magna Electronics
- Macomb College
- Argonne National Laboratory

Subsequent reviews done by more than 90 experts from 16 different countries



VE Program – Product Specific

VE Fundamentals and Safety Certificate of Competency

Designed for anyone associated with an electrified vehicle program and need to understand fundamentals of Vehicle Electrification (VE) architecture and critical safety measures. The overall objective of the Vehicle Electrification Certificate of Competency is to provide training for those individuals who work on or around electrified vehicles to perform their tasks safely.

Requirements:

- Complete the online training course
- Take and pass the industry-vetted examination



VE Program – Product Specific

Certified Vehicle Electrification Professional (CVEP)

The SAE CVEP Credential is awarded to individuals who can demonstrate mastery of knowledge in general vehicle electrification safety, including knowledge and application of major systems (battery packs, motors and power electronics). The overall objective of the CVEP Credential is to recognize those individuals who possess the skills and knowledge to work as part of the multi-disciplinary teams in the field and associated industries. Those individuals are involved in product design, manufacturing process design and manufacturing implementation of electrified vehicles.

Requirements:

- Education: Minimum, associate degree in engineering, engineering technology or technical related field
- Experience: 2-years of experience working in the field of VE, EV or HEV
- Examination: Passing the exam on Knowledge and Application of VE Components, Safety, Power Electronics Basics, and Systems Integration
- Maintain the Certification by fulfilling re-certification requirements every three years



VE Program – Product Specific

Certified Vehicle Electrification Engineer / Scientist (CVEES)

The CVEES certification is designed for individuals to validate mastery of knowledge in the science and design of one or more specific major VE systems. The program provides a method for those Scientist and Engineers currently leading a multi-disciplinary team in the field of Electric Vehicle Design to demonstrate deep knowledge and specific skills in their area(s) of specialty.

Areas of Specialty:

- Mechanical Propulsion: Transmission and IC Engine
- Energy Storage
- Power Electronics and Controls

Requirements:

- Education: Minimum, bachelor degree in engineering, engineering technology or technical related field
- Experience: 4-years of experience working in the field of VE, EV or HEV
- Examination: Successfully pass the CVEP exam first. Then decide on a CVEES track and pass that exam. Each exam focuses on the topic content (more than one CVEES designation may be obtained).
- Maintain the Certification by fulfilling re-certification requirements every three years



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SAE Credentialing - Additional Information: Certifications



Exam Proctoring

The Certification examinations are proctored. Each examinee must select a delivery method. You have the opportunity to take the examination in the comfort of your home, place of business or at a specified public testing site. You will be prompted to select an examination delivery method during the purchase process. Proctoring options include *Test Site, Open-Enrollment, Human Proctor, or Remote Proctor.*

Recertification

All SAE credentials are valid for a period of three years from the time the examination is passed. Certifications may be renewed by completing 30 continuing education hours or retaking an exam. If you meet the requirements you may be prepared for the higher level of certification, which would replace your current credential, once obtained.

Example: CVEES replaces CVEP.

Preparing for the Exam

It is suggested that a participant attend a preparatory training, or utilize learning resources and reference documents to prepare for any SAE certification exam. SAE provides the Basic Body of Knowledge (BOKs) free of charge, which provides a detailed overview of the examination's contents.



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Why Earn SAE Vehicle Electrification Credentials?



Benefits To You of Earning SAE Certificates or Becoming SAE Certified

- *Validates mastery of industry-driven training and learning objectives (certificates)*
- *Confirms mastery of an industry-generated body of knowledge*
- *Provides industry-recognition of your knowledge and capabilities*
- *Provides a portable credential that is recognized across industry*
- *Demonstrates your commitment to continuing professional development*

Credentialing Value to the Company

- *Recognizes the capabilities and talents of your people with a formal industry-recognized credential*
- *Enhances your company's credibility with corporate customers*
- *Contributes to the hiring and promotion process*
- *Encourages employee participation in continuing education*
- *Provides an independent internal and external knowledge assessment*
- *Promotes a culture of excellence and professional competence*



SAE Credentialing Thank you

For additional Information,
please visit

<http://training.sae.org/credentialing/>

To participate, please visit

<https://www.saecredentialingalliance.org/store>