

AUTOSAR Classic Platform Basic Course

Agenda VectorAcademy

Delivery Format:	This Course is offered in Classroom, Remote or Blended Learning Format. In the case of Blended Learning the content will be learned via E-Learning in a period of 3 weeks and there will be 5 accompanying remote sessions.
Duration:	Classroom: 4 days Remote: 28 hours Blended Learning: approx. 35 hours of selfstudy + 11 hours of remote sessions (see schedule below)
Target Group:	Project Leader, AUTOSAR ECU Developer and User
Prerequisites:	Knowledge about software development for automotive systems
Goal:	General view of AUTOSAR Classic Platform

1. AUTOSAR Fundamentals: Overview and Objectives

- > Motivation and aims
- > Organization, schedule

2. Introduction to AUTOSAR

- > Basic principles and technical concepts
- > SWC (software components) and RTE (runtime environment)

3. AUTOSAR RTE

- > Interfaces with application and basic software
- > Mode of operation of the RTE

4. AUTOSAR BSW

- > Explanation of the most important BSW (basic software) concepts

5. Methodology of AUTOSAR

- > Overview and data exchange formats (ECU Extract, ECUC, ...)
- > Methodology from the view of an OEM and supplier

6. AUTOSAR in Practice

- > Development of AUTOSAR systems demonstrated with Vector's DaVinci Tool Suite

7. Implications and Migration

- > Presentation of different migration scenarios from the point of view of the application and the BSW

8. AUTOSAR in Practice: Overview and Introduction

- > Relation between AUTOSAR, the Vector Implementation MICROSAR and the DaVinci Tools
- > Mapping between AUTOSAR methodology and the Vector tool chain

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9. Operating System

- > Basic understanding of the mediums and mechanisms of the AUTOSAR operating system
- > Tasks, alarms, events, etc.
- > AUTOSAR OS Scalability classes

10. Software Components (with Exercises)

- > Handling of DaVinci Developer and RTE
- > Design of software components, ports, connections, task mapping and generation of the RTE with the DaVinci Tools (Developer, Configurator)

11. Input and Output (with Exercises)

- > Data exchange with I/O modules
- > Configuration of the basic software for the I/O with the DaVinci Tools (Developer, Configurator)

12. Communication (with Exercises)

- > Data exchange over CAN
- > Configuration of the basic software for the communication with the DaVinci Tools (Developer, Configurator)

13. State Management and System Services (with Exercises)

- > Sleep and wake up of ECUs and bus
- > Roles of the modules ComM, EcuM and BswM
- > Configuration of the Mode Management with the DaVinci Tools (Developer, Configurator)

14. Bussystems (Material for reference)

- > Understanding the conceptual differences of the bus systems
- > Importance of the configuration of the basic software
- > CAN, LIN, FlexRay, Ethernet

15. Non-volatile Memory Access (with Exercises)

- > Access to non-volatile memory
- > Configuration of the basic software for the memory with the DaVinci Tools (Developer, Configurator)

16. Diagnostics (with Exercises)

- > Diagnostics with AUTOSAR
- > Configuration of the diagnostics basic software with the DaVinci Tools (Developer, Configurator)

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Schedule Blended Learning:

