

# AUTOSAR Classic Platform Course

## Agenda VectorAcademy

<b>Delivery Format:</b>	This Course is offered in Classroom, Remote <b>or</b> Blended Learning Format. In the case of Blended Learning the content will be learned via E-Learning in a period of 5 weeks and there will be 5 accompanying remote sessions.
<b>Duration:</b>	Classroom: 4 days Remote: 28 hours Blended Learning: approx. 44 hours of selfstudy + 11 hours of remote sessions (see schedule below)
<b>Target Group:</b>	Project Leader, AUTOSAR ECU Developer and User
<b>Prerequisites:</b>	Knowledge about software development for automotive systems
<b>Goal:</b>	General view of AUTOSAR Classic Platform

### 1. AUTOSAR Introduction

- > Overview and Objectives
- > Partnership and Timeline
- > AUTOSAR Classic Architecture

### 2. AUTOSAR Application

- > Basic principles and technical concepts
- > SWC (software components)
- > Ports
- > Runnables

### 3. AUTOSAR RTE (Runtime Environment)

- > RTE as a Communication Interface
- > RTE as a Runtime Environment for Runnables

### 4. AUTOSAR BSW

- > Explanation of the most important BSW (basic software) concepts (Communication, Mode Management, Watchdog, Memory Services, Diagnostics, Hardware I/O, Operating System (OS))

### 5. Methodology of AUTOSAR

- > Overview and data exchange formats (ECU Extract, ECUC, ...)
- > Methodology between OEM and supplier

### 6. MICROSAR Tool Chain

- > Introduction of Vector Tools throughout the whole development process

### 7. MICROSAR SIP

- > Basic knowledge about the Vector MICROSAR SIP

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### 8. Tooling

- > Fundamental use of the DaVinci Tools

### 9. 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

### 10. Operating System

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

### 11. 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)

### 12. 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)

### 13. Communication (with Exercises)

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

### 14. 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)

### 15. Bussystems (Material for reference)

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

### 16. Non-volatile Memory Access (with Exercises)

- > Access to non-volatile memory

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

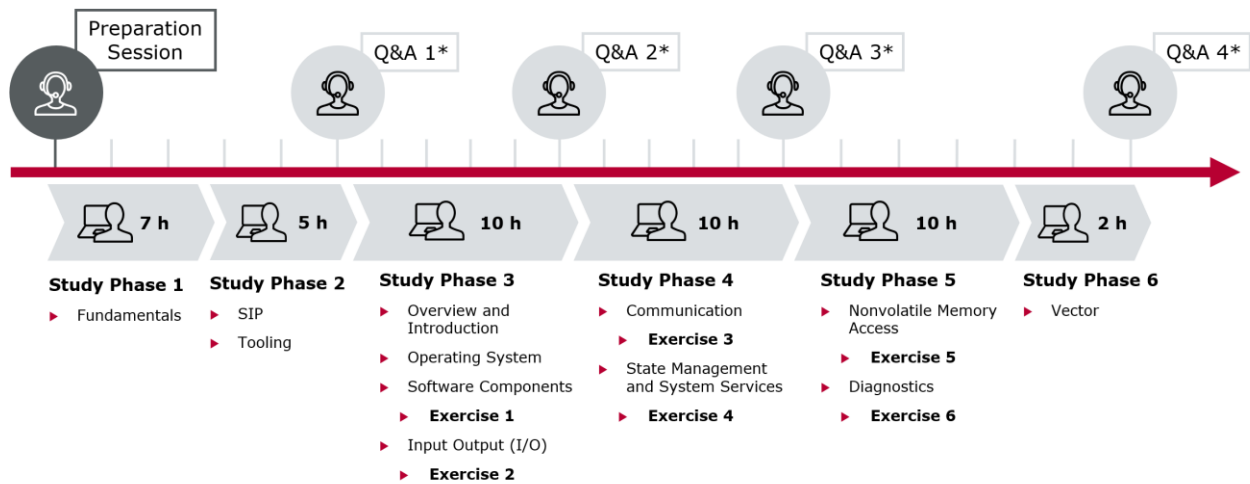
## 17. Diagnostics (with Exercises)

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

## 18. VECTOR

- > Communication Channels to Vector

### Schedule Blended Learning:



\* For organizational reasons, the distribution of Q&A sessions may deviate slightly from this schedule. In this case, please refer to the session invitations for orientation. Of course, you can assume that the sessions are planned in such a way that an optimal learning progress is nevertheless made possible.