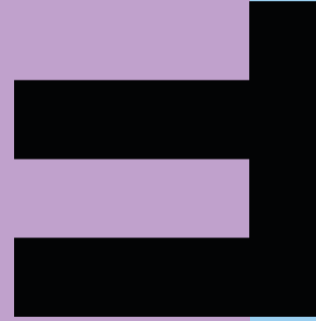


FHV

Vorarlberg University
of Applied Sciences



Application Integration and Security

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Valmir Bekiri

Application Integration and Security

Goals and Methodology

- learning outcomes
 - knowledge about requirements and application areas of **distributed systems**
 - ability to explain the **basics and concepts of enterprise architecture and application integration**
 - understand different solutions in the field of distribution and integration (CS, N-tier, SOA, Middleware)
 - ability to **implement & integrate simple distributed applications** incl. accurate query & response formats
 - understand the **security risks** of a service-oriented architecture
 - define **authentication** and **authorization** measures
 - solve tasks in teams on time, demonstrate and explain the solution
 - understand the solutions of others, make constructive suggestions for improvement and deal with feedback as well as reflect own abilities and limits
 - ability to acquire new knowledge independently and to learn from successes and failures
- methodology
 - lecture listening periods and practical exercises



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Assessment

- **group project:** intermediate check ups (40 %)
presentation on 01 April 2025

Projekt **must** be done in teams of two or three. Presentation will be held – more info in ILIAS!

- REST-based WebAPI
 - Object-Relational-Mapping – Database Integration including DataSeeds
 - JWT Authentication
 - Frontend
 - Bidirectional Communication: e.g. SignalR
- **final exam** (60 %) on 14-April-25
 - theoretical foundations (30min) and
 - their application in simple practical tasks (105min)



Application Integration and Security

Timetable and Contents

- 17-Feb-25: Introduction, software architecture: architectural styles, application integration: introduction and synchronous communication (RPC, SOAP, REST, gRPC, GraphQL);
- 18-Feb-25: Web application development with .NET 8; ASP.NET Core Web-API
- 24-Feb-25: ASP.NET Core Web-API continued; Entity Framework Core, ORM
- 25-Feb-25: Entity Framework Core, ORM continued
- 03-Mar-25: WebApi incl. EF Core full recap; ADO.Net
- 10-Mar-25: Authentication & Authorization
- 17-Mar-25: WebSecurity
- 18-Mar-25: **Workshop with compass security**
- 24/25-Mar-25: async. communication like SignalR, AMQP/MQTT
- 31-Mar-25: Project Preparation
- 01-Apr-25: **Presentation**
- 07-Apr-25: Exam Prep
- 14-Apr-25: **final exam**



Application Integration and Security

Literature

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- Basin, David; Schaller, Patrick; Schläpfer, Michael (2011): Applied Information Security: A Hands-on Approach. 2011. Aufl. Heidelberg ; New York: Springer.
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