

Lehrveranstaltung		LV-Kurzbezeichnung
Advanced Full Stack Development		****
Verantwortliche/r	Fakultät	
	Informatik und Mathematik	
Lehrende/r / Dozierende/r	Angebotsfrequenz	
Eamonn de Leastar	keine Angabe erforderlich	
Lehrform		
Seminaristischer Unterricht		

Studiensemester gemäß Studienplan	Lehrumfang [SWS oder UE]	Lehrsprache	Arbeitsaufwand [ECTS-Credits]
6. / 7. Semester	4 SWS	Englisch	5

Zeitaufwand:

Präsenzstudium	Eigenstudium
60 h	90 h

Examination
Software Project
Zugelassene Hilfsmittel für Leistungsnachweis
Keine

Inhalte und Qualifikationsziele
<p>The module assumes an intermediate computer programming competence and a familiarity with the essentials of HTML, CSS and JavaScript. Furthermore, it is assumed that the student is familiar with the fundamentals of web application development, including common web application development patterns (E.g., Node/Express or equivalent).</p> <p>Modern Web application development is converging on a powerful set of principles, architectural approaches, tools and techniques. These can be usefully integrated into the concept of <i>Full Stack</i> development. This course will immerse the student to the latest techniques in this vibrant and rapidly evolving domain. The following topics will be explored:</p> <ul style="list-style-type: none"> - Web Application Architecture - NOSQL Databases - API development - Test Driven Development - Front End Development - Serverless Paradigm <p>Students will be equipped with the skill to design, implement, test and deploy a web application and secure web service coupled with a modern front-end application.</p>

Lernziele: Fachkompetenz
<p>After successful completion of the module, students will be able to:</p> <ul style="list-style-type: none"> – Understand the structure and patterns required to implement a robust web service. – Apply these principles to the design of a modern web application – Be able to critique this application, identify potential inefficiencies, bottlenecks, and optimizations – Evaluate the selected tool set and relate this to other frameworks, libraries & approaches within the Full stack ecosystem.
Lernziele: Persönliche Kompetenz
<p>After successful completion of the module, students will be able to:</p> <ul style="list-style-type: none"> – Implement a node.js service using modern JavaScript features, including appropriate persistence layer – Expose this service as a secure API + devise a suite of tests for same – Develop a responsive and compelling front end for this API <p>The following technologies will be explored:</p> <ul style="list-style-type: none"> – Hapi.js Node.js Framework + templating & validation components – NOSQL Databases, including database seeding – Mocha/Chai TDD test runners – JWT API Security – Svelte Frontend Framework + routing & utility components – Fundamentals of serverless development
Angebotene Lehrunterlagen
<ul style="list-style-type: none"> ▪ PowerPoint-/PDF-Präsentationen der Vorlesung ▪ Durchgängiges Fallbeispiel
Lehrmedien
<ul style="list-style-type: none"> ▪ Vorlesung (PowerPoint-/PDF-Präsentationen und Tafel/Whiteboard) mit interaktiven Elementen (Slido/Mentimeter o.Ä.) ▪ Ausarbeitung von Lösungen durch Gruppen (PowerPoint/Whiteboard) direkt in der Veranstaltung oder vorher, Diskussion innerhalb der Veranstaltung ▪ Verwendung eines durchgängigen Fallbeispiels ▪ Kann (pandemiebedingt) auch virtuell durchgeführt werden
Literature
<ul style="list-style-type: none"> ▪ Pro MERN Stack, Full Stack Web App Development, Vasan Subramanian, APress 2019 ▪ Modern Full-Stack Development, Frank Zammetti, Apress, 2020 ▪ The Full Stack Developer, Chris Northwood , Apress 2018

Please indicate the levels to be achieved as a numerical value in parentheses in the learning objectives.

Levels: 1 - know, 2 - can, 3 - understand and apply