

# Syllabus

## *Kursbeschreibung*

<b>Titel der Lehrveranstaltung</b>	Engineering of Mobile Systems
<b>Code der Lehrveranstaltung</b>	76416
<b>Zusätzlicher Titel der Lehrveranstaltung</b>	
<b>Wissenschaftlich-disziplinärer Bereich</b>	INFO-01/A
<b>Sprache</b>	Englisch
<b>Studiengang</b>	Bachelor in Wirtschaftsinformatik
<b>Andere Studiengänge (gem. Lehrveranstaltung)</b>	
<b>Dozenten/Dozentinnen</b>	Dr. Muhammad Azfar Yaqub, MuhammadAzfar.Yaqub@unibz.it <a href="https://www.unibz.it/en/faculties/engineering/academic-staff/person/47326">https://www.unibz.it/en/faculties/engineering/academic-staff/person/47326</a>
<b>Wissensch. Mitarbeiter/Mitarbeiterin</b>	
<b>Semester</b>	Zweites Semester
<b>Studienjahr/e</b>	2
<b>KP</b>	6
<b>Vorlesungsstunden</b>	40
<b>Laboratoriumsstunden</b>	20
<b>Stunden für individuelles Studium</b>	90
<b>Vorgesehene Sprechzeiten</b>	16
<b>Inhaltsangabe</b>	<ul style="list-style-type: none"> <li>• Functional and declarative programming</li> <li>• Design of mobile applications</li> <li>• Frameworks and platforms for mobile development</li> <li>• Data and resource management in a mobile context</li> <li>• Mobile device sensors</li> <li>• Internet of Things</li> </ul>

<b>Themen der Lehrveranstaltung</b>	
<b>Stichwörter</b>	
<b>Empfohlene Voraussetzungen</b>	<ul style="list-style-type: none"> <li>• Basic web and programming background</li> <li>• Basic principles of Software engineering</li> </ul>
<b>Propädeutische Lehrveranstaltungen</b>	
<b>Unterrichtsform</b>	Frontal lectures, in-class exercises, projects in the lab.
<b>Anwesenheitspflicht</b>	Attendance is not compulsory, but is highly recommended, as practical exercises will be done during labs and lectures.
<b>Spezifische Bildungsziele und erwartete Lernergebnisse</b>	<p>The course belongs to the type "caratterizzante - informatica". Students will learn the key concepts of mobile application development and the internet of things. Practical experience will be gained by using state of the art technologies for the development of mobile applications. Upon completion of the course, students shall have acquired expertise in writing mobile applications that leverage advanced mobile APIs and connect to outside web services, and shall be aware of the various tradeoffs in the development of mobile applications.</p> <ul style="list-style-type: none"> <li>• D1.11 - Know software design and development methodologies with particular regard to the mobile environment.</li> </ul> <p>Applying knowledge and understanding:</p> <ul style="list-style-type: none"> <li>• D2.6 - Ability to design, describe and present IT solutions to policy makers.</li> <li>• D2.8 - Ability to develop applications in the web area.</li> </ul> <p>Making judgments</p> <ul style="list-style-type: none"> <li>• D3.4 - Ability to assess fundamental economic and business facts on the basis of numerical data.</li> </ul> <p>Communication skills</p> <ul style="list-style-type: none"> <li>• D4.4 - Ability to structure and prepare technical documentation.</li> </ul> <p>Learning skills</p> <ul style="list-style-type: none"> <li>• D5.3 - Ability to follow rapid technological developments and to learn about innovative aspects of the latest generation of information technology and systems.</li> </ul>
<b>Spezifisches Bildungsziel und erwartete</b>	

<b>Lernergebnisse (zusätzliche Informationen)</b>	
<b>Art der Prüfung</b>	<ul style="list-style-type: none"> <li>• Oral exam (50%)</li> <li>• Project and assignments (50%)</li> </ul>
<b>Bewertungskriterien</b>	<p>The students will implement a mobile application as a project. The application should include the topics covered during the lectures and labs.</p> <p>The outputs of the project are:</p> <ul style="list-style-type: none"> <li>• a written report describing the application (problem statement, proposed solution, application design and architecture, functionality, development problems/solutions)</li> <li>• a working demo of the application</li> <li>• a project presentation</li> </ul> <p>The goal of the project is to assess to which degree students have achieved the following learning outcomes: applying knowledge and understanding, making judgments, communication skills and ability to learn.</p> <p>The aim of the written exam is to assess to which degree students have achieved the learning outcomes concerning applying knowledge and understanding, making judgments, communication skills and ability to learn.</p>
<b>Pfichtliteratur</b>	Reading material will be provided on the MS teams of the course.
<b>Weiterführende Literatur</b>	
<b>Weitere Informationen</b>	<p>Software used:</p> <ul style="list-style-type: none"> <li>• React: <a href="https://reactjs.org">https://reactjs.org</a></li> <li>• Native: <a href="https://reactnative.dev">https://reactnative.dev</a></li> <li>• Expo: <a href="https://expo.io">https://expo.io</a></li> <li>• Visual Studio Code</li> </ul>
<b>Ziele für nachhaltige Entwicklung (SDGs)</b>	Hochwertige Bildung