

**Module title: Building Web and Mobile Apps**

Module ID	Workload	Credits	Semester	Frequency of Offering	Duration
MI22	150 h	5	2	yearly	1 semester

Workload	Attendance	Preparation and Follow-Up	Private Study	Preparation for Exam and Exam	Total
SU	30 h / 2 SWS	15 h	35 h	10 h	
P	30 h / 2 SWS	30 h			
Total	60 h / 4 SWS	45 h	35 h	10 h	150 h

**1** **Scheduled Group Size:** SU: 35 students, P: 15 students

**2** **Subject Knowledge / Skills**

*Students learn modern mobile and web application development, while using cross-platform tools and frameworks for app development. They learn how to invoke asynchronous APIs, leverage device sensors, etc. Students also learn writing web and native apps for Android, iOS, and/or Windows Phone. Topics include using HTML5 technologies in mobile-optimized web applications, as well as in Android, iOS, and/or Windows Phone frameworks. This course also discusses appropriate server-side technologies along with RESTful web APIs.*

**3** **Content / Syllabus**

*Due to the advancements of web technologies, websites have evolved to full web applications, and we currently have a convergence of application platforms, while the still increasing use of mobile devices, such as smartphones and tablets, leads to a divergence of system platforms. Therefore, this course teaches students application development in a mobile operating system of their choice and covers the following topics:*

- *Desktop vs. web applications*
- *Concepts of web frameworks*
- *Web APIs*
- *Responsive web design*
- *Frameworks for creating mobile apps*
- *Testing/debugging with emulators*

**4** **Teaching Format**

*Lecture with integrated exercises and accompanying practical work in a laboratory*

**5** **Prerequisites**

*None*

**6** **Recommended Qualifications for the Participation**

*Good knowledge of HTML, CSS, JavaScript, and PHP; working knowledge of Java or C/C++*

**7** **Assessment**

*Written exam*

<b>8</b>	<b>Prerequisites for Granting ECTS Credits</b> <i>Exam passed</i>
<b>9</b>	<b>Usage of this Module in Other Degree Courses</b> <i>None</i>
<b>10</b>	<b>Contribution to Final Score</b> 5,56 %
<b>11</b>	<b>Convenor</b> Professor of Digital Media Computing
<b>12</b>	<b>Language of Instruction</b> <i>English</i>
<b>13</b>	<b>Reading List</b>  <i>The course relies on the latest version of related specifications of the W3C (e.g., <a href="http://www.w3.org/Mobile/mobile-web-app-state/">http://www.w3.org/Mobile/mobile-web-app-state/</a>) and on the current state of mobile app development kits.</i>  <i>Further up-to-date book references will be provided in class.</i>