## Course Description   Title

| Keywords: | Internet, Web, Client, Server, HTTP, HTML, CSS, Javascript, PHP | | |
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| Audience: | SWB3 | Modul Number: | IT SWB 332 |
| Workload: | 5 ECTS | | 150 h |
| divided into | Contact time | | 90 h |
| | Self-study | | 30 h |
| | Exam preparation | | 30 h |
| Course language: | English | | |
| Modul director: | Prof. Dr. -Ing. Harald Melcher | | |
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| Vaild from: | 01.03.2019 | | |

| Recommended requirements: |
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| Knowledge in an object oriented programming language like Java or C#. Routine in a development IDE like IntelliJ or VisualStudioCode. |

| Desired learning outcomes of the module: |
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| **Knowledge - professional competences**<br>• Students acquire knowledge in the area of web based applications and services. They gain an overview over the protocols, the interworking of clients and servers and the major languages of the internet.<br><br>**Skills - methodical competences**<br>• Students are able to appraise the best combination of technologies for a specific web task. The can estimate the risk of a given solution.<br><br>**Comprehensive Competencies**<br>• Students understand, how web based services interact and are able to develop a simple service by themselfes. |

| Contents: |
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| • Basic structure of client – server communication<br>• Basic functions of a web server<br>• The web protocol HTTP<br>• Use of markup languages like HTML or XML<br>• Design and implementation of interactive web applications with HTML, CSS, Javascript and JSON |

| Literature: |
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| • Freeman & Robson, Head First HTML5 Programming, O'Reilly<br>• Freeman & Robson, Head First HTML and CSS, O'Reilly<br>• Crockford, Javascript: The good Parts, O'Reilly |

| Offered: |
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| Each semester |

| Sumodules and Assessment: |
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| Type of instruction: | Lecture with exercises and exam preparation |
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| Type of assessment: | Exam (90 minutes) |
| Hours per week: | 3 SWS |
| Estimated student workload: | 120 Hours |
| Learning outcomes: | |
| | Students are proficient in selecting the right tools for Web based client server applications. They know the security risks and how to mitigate them and they have a basic understanding of the programming languages in use for Web applications. |

| Type of instruction: | Lab in the PC pool |
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| Type of assessment: | Report / Presentation |
| Hours per week: | 1 SWS |
| Estimated student workload: | 30 Hours |
| Learning outcomes: | |
| | Students are proficient in developing simple Web Applications according to best practice examples. They have experienced the pitfalls of Javascript and CSS programming and know how to cope with them. |

| Generation of the module grade: | |
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| | Exam (90 minutes) (graded) Report / Presentation (ungraded) |