| Scientific Programming with Matlab in Engineering | | | | | AR-105 |
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| **Rota**<br>annually WS | **Duration**<br>1 Semester | **Semester**<br>1st (Semester) | **SWS**<br>3 SWS | **Credit Points**<br>3 | **Workload**<br>90 h |

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| 1 | **Modul Structure** | | | | |
| | **Course (Abbreviation)** | **Type/ SWS** | **Presence** | **Self Study** | **Credit Points** |
| | a) Scientific Programming with Matlab in Engineering (SPM) | Lab/ 3 SWS | 35 h | 55 h | 3 |
| 2 | **Language**<br>English | | | | |
| 3 | **Content**<br>1. Matlab Basics, Programming, Visualization<br>2. Symbolic Computing<br>3. Statistics<br>4. Numerical Optimisation<br>5. Control System Design<br>6. Simulink<br>7. Robotics<br>**Literature:**<br>Matlab documentation | | | | |
| 4 | **Competencies**<br>The course qualifies the students to solve scientific programming and engineering problems with Matlab. The students acquire deeper knowledge in the design and application of control systems and robotics. | | | | |
| 5 | **Examination Requirements**<br>Successful completion of 75% of programming assignments and<br>Successful completion of 50% of quizzes<br>The course grading is pass or fail. | | | | |
| 6 | **Formality of Examination**<br>☐ Module Finals ☐ Accumulated Grade | | | | |
| 7 | **Module Requirements (Prerequisites)** | | | | |
| 8 | **Allocation to Curriculum:**<br>Mandatory Course<br>Program: Automation & Robotics | | | | |
| 9 | **Responsibility/ Lecturer**<br>*apl. Prof. Dr. F. Hoffmann* / apl. Prof. Dr. F. Hoffmann | | | | |