

Embedded Systems Engineering					
Course Code CIF61033	Student Workload 90 hours	Credits (according to ECTS) 4.5	Semester Sem. 6 & 8	Frequency each even-semester	Duration 16 meetings
1	Types of courses <i>elective</i>	contact hours 63 hours	independent study 27 hours	class size 40 students	
2	Prerequisites for participation Have completed Interactive System Programming course				
3	Learning outcomes IF-ILO-3 Graduates are able to develop professional careers in the field of computer science based on quality aspects, data-based decision making, be responsible, and make continuous improvements. IF-ILO-7 Mastering the theoretical concept and principles of computer science, especially in the aspect of algorithms, programming, intelligent systems, information management, parallel and distributed computing, information security, human-computer interaction, software engineering, and fundamentals of computer systems and networks. IF-ILO-13 Graduates are able to perform abstraction, modeling, representation, and data acquisition in order to perform the data analysis.				
4	Subject aims Student are able to explain the basic concept of immersion system Student are able to explain the concept of Immersion System Engineering Student are able to explain the hardware used in the immersion system Student are able to apply software engineering to immersion systems Student are able to implement programming on immersion systems Student are able to apply intelligent device engineering Student are able to apply internet of things				
5	Teaching methods lectures, case study, class discussion, presentation				
6	Assessment methods assignment, mid-term examination, end-term examination, project evaluation, practical-skill assessment				
7	This module is used in the following degree programs as well				

8	Responsibility for module
9	<p>Other information</p> <ol style="list-style-type: none"> 1. Robert Oshana and Mark Kraeling, 2013, Software Engineering for Embedded Systems Methods, Practical Techniques, and Applications 2. Klaus Elk, 2016, Embedded Software Development for the Internet Of Things: The Basics, the Technologies and Best Practices 3. Ahmet Bindal, 2017, Electronics for Embedded Systems 4. Jim Cooling, 2018, Software Engineering for Real-time Systems Designing and Developing Real-time Software 5. Steve McCarthy, 2018, Raspberry Pi 3 Mastery 2 Books in 1: The Raspberry Pi 3 Introductory Book and The Raspberry Pi 3 Project Book - With Source Code and Sep by Step Guides 6. James K. Peckol, 2019, Embedded Systems A Contemporary Design Tool 7. Simon Monk, 2019, Raspberry Pi Cookbook Software and Hardware Problems and Solutions Internet of Things 8. Vlasios Tsiatsis, Stamatis Karnouskos, Jan Höller, David Boyle dan Catherine Mulligan, 2019, Technologies and Applications for a New Age of Intelligence 9. Amita Kapoor, 2019, Hands-On Artificial Intelligence for IoT: Expert Machine Learning and Deep Learning Techniques for Developing Smarter IoT Systems 10. Neil Wilkins, 2019, Artificial Intelligence: A Comprehensive Guide to Ai, Machine Learning, Internet of Things, Robotics, Deep Learning, Predictive Analytics, Neural Networks, Reinforcement Learning, and Our Future 11. Pressman RS (2009) Software Engineering A Practitioner's Approach 7th Ed - Roger S. Pressman. 12. Sommerville I (2016) Software engineering (10th edition)