Hochschule München University of Applied Sciences

Courses in English
Course Description

Department	07 Computer Science and Mathematics
Course title	**Safe Programming in Rust**
Course number	
Hours per week (SWS)	4
Number of ECTS credits	5
Course objective	Students design software with the ownership system in Rust Students understand the limitations of the ownership system Students understand how unsafe works, when it is required, and how to use it Students write efficient concurrent programs in Rust Students apply a modern type system to write maintainable code
Prerequisites	Software Engineering, Software Development, and Business Informatics from the Bachelor's program
Recommended reading	
Teaching methods	
Assessment methods	tbd
Language of instruction	English
Name of lecturer	
Email	
Link	https://zpa.cs.hm.edu/public/module/534/
Course content	Traditionally, programmers have had to choose between memory safety an performance when picking a programming language. The choioce is between languages like C or C++ which require manual memory management that is easy to get wrong, or a garbage collected language like Java or Go which comes with runtime overhead. Rust combines both worlds, the performance of manual memory management, but with an ownership system that runs at compile time and ensures that programs cannot access invalid memory. In addition to learning the basics of Rust, in this course you will learn how this ownership system works, its limitations, and how it can be used to write performant single- and multi-threaded code. In addition, you will learn how to use modern type systems to write correct, and more importantly, maintainable code.
Remarks	