

Introduction to the Lecture

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MCI





1. Introduction

Introduction



First Steps

Introduction

Lecture Contents

Requirement and Learning Outcomes

Assignments

Content Preview



- **Warning:** This is the content only covered by me as this lecture is shared by Prof. Can Dede and Benjamin Massow, M.Sc
- The goal of this lecture is to give you a better view of how to control robots using different programming methods.
- This lecture you will use ROS, a versatile software capable of doing pathfinding and localisation, a perfect fit for use in mobile robotics. The Lecture structure for this lecture is as follows.
- This lecture is a total of **1 SWS** with a total of thirty (**15**) UE.
 - With 15 UE is devoted to lectures.



- Lecture materials and all possible supplements will be present in its Github Repo.
 - You can easily access the link to the web-page from [here](#).

Github is chosen for easy access to material management and CI/CD capabilities and allowing hosting websites.

- In the lecture some exercises are solved using programming and can be accessed from the [Repo website](#).



- The student should be comfortable with working with either python and/or C++ and should have an beginner level knowledge of the Linux environment and the command line interface
- For a refreshment on its content the students are encouraged to read the materials presented in the following repos:
- [B.Sc Python for Engineering and Economics](#)
- [B.Sc Mobile Robotics](#)

Requirements	Taught Lecture	Code	Degree	Outcome
C/C++ Programming	Programming II	PRO2	B.Sc	ROS 2 Programming
Python Programming	Software Design	SWD	B.Sc	Linux Experience
Working with IoT	Higher Mathematics I	IOT	B.Sc	Programming
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-	-	-	-	-

Table 1: Distribution of materials across the semester.



Description	Value
Official Name	Robotik
Lecture Code	ROB
Module Code	MECH-M-2-ROB-ROB-ILV
Degree	M.Sc
Lecture Name	Robotics
Semester	2
Season	SS
Assignments	Personal Assignment
Lecturer(s)	Daniel T. McGuiness Ph.D, Prof. Can Dede, Benjamin Massow, M.Sc
Module Responsible	BnM
Software	Linux, Python, C++, ROS 2
SWS Total	1
UE Total	15
ECTS	4

Table 2: Information regarding the lecture.



- The lecture will have one personal assignment which will be based on ROS and programming applications related to it.

Assignment Type	Value
Personal Assignment	100
SUM	100

Table 3: Distribution of materials across the semester.



- The content and unit distribution of the lecture is as follows where a unit is defined as 45 min lecture.

Topic	Units	Self Study
The GNU/Linux Operating System	3	6
ROS 2 Introduction and Concepts	3	6
Programming with Client Libraries	6	12
Simulations and TF Trees	3	6
Sum	15	30

Table 4: Distribution of materials across the semester.