

Faculty of Computer Science, Institute of Systems Architecture, Chair of Systems Engineering

# RoboLab Autumn Course - Introduction

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# Outline

- Benefit from the Course – What is it about?
- Organisation
- Tasks
- Do's and Don'ts

# Benefit from the Course – What is it about?

# Benefit from the Course – What is it about?

- Improve your skills in mathematics and algorithms
- Apply knowledge on simple error detection and correction
- Gain programming experience
  - ➔ Python, Testing, Version Control (with Git)
- Learn about basic Stack machines
  - ➔ Overflows, Exceptions, Text processing
- Build your own robot - Have fun with LEGO®!

# Organisation

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- Topics will be presented during consultation times on Friday
  - ➔ You can also ask questions via e-mail or by appointment
  - ➔ Slides will be provided on Opal
- Make sure to **read assignment introductions** and **PDF files** properly
  - ➔ See our schedule for a more detailed overview of the dates
- Assignments are mandatory (new PO: called *Portfolio*) and part of overall grading process
  - ➔ For the old PO, all mandatory **assignments** must be passed to take the **final presentation**
- **Final presentations** will be **in January** by appointment
  - ➔ Estimated date: Starting on January 13, **2025**

# Organisation

- You will **work on your own** for the first set of assignments
  - **Assembling the Robot:** Group task (two students)
- **Every student** has their **own GitLab repository**
  - You have to **commit** your **solutions** there
  - **Group** work: **Extra repository**
- Working in groups means **collaboration** and **equal contribution**
- If not already done, **enrol for the modules (assignments, exam according to your PO)**
  - <https://selma.tu-dresden.de>
  - Register until December 10, 2024

Opal registration is  
mandatory to  
participate!

# Organisation

- **More information:** See our **documentation**
  - ➔ <https://robofab.inf.tu-dresden.de/autumn>
- Please **check** the main page for **announcement regularly**
- Where to find me: **APB/3074**
  - ➔ **Make an appointment first via email!**: [robofab@mailbox.tu-dresden.de](mailto:robofab@mailbox.tu-dresden.de)

# Tasks

# Tasks

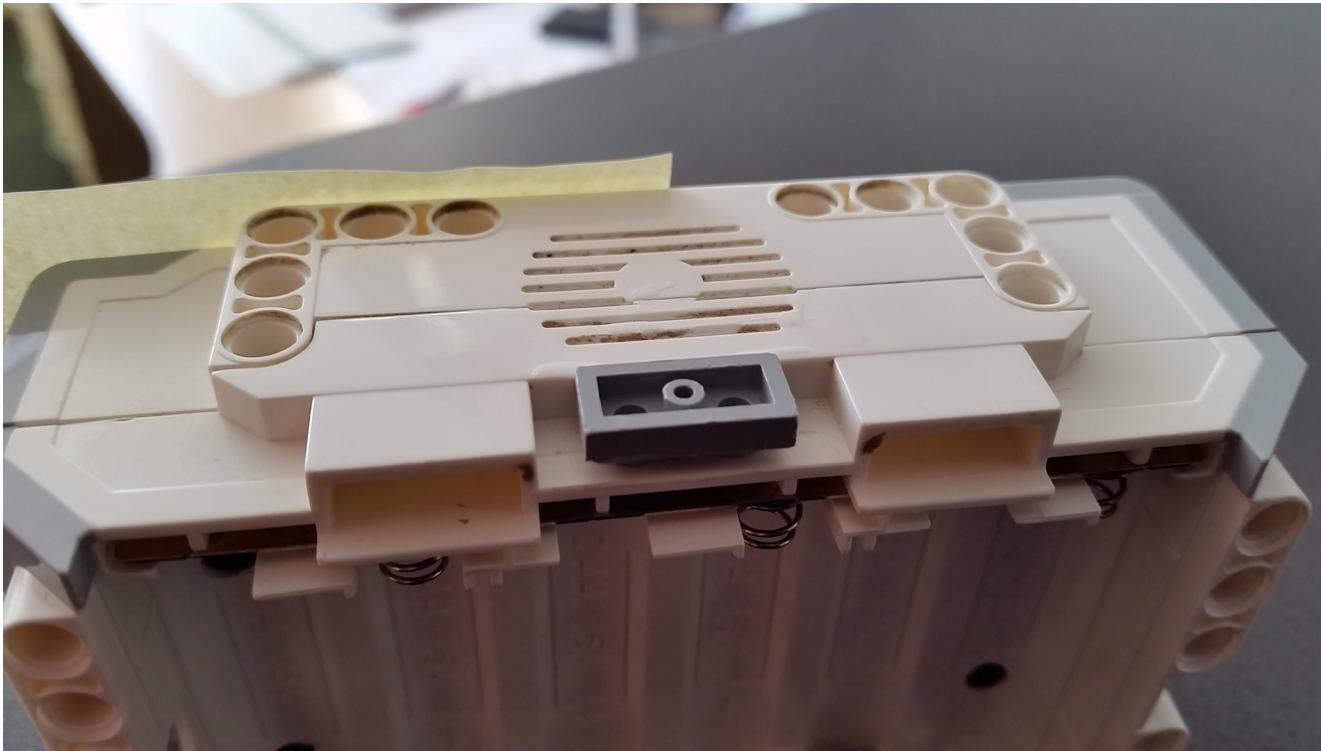
- Some theory about **Hamming Codes** and (simple) **Stack Machines**
- Learn about **unit-tests** with Python3
- **Build** and program **a robot** with LEGO®
  - ➔ Read analogue values from a bar code card
  - ➔ Decode the code word read before and perform error correction
  - ➔ Execute the decoded instructions
- **Simulate** a simple **stack machine**

# Do's and Don'ts

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- LEGO® Sets
  - ➔ EV3 Base Set and some additional parts (you can ask for more if necessary)
  - ➔ Micro SD-Card with Adapter, WiFi-Dongle
- Be careful with the set
- Don't add or remove parts
  - ➔ Also do not exchange parts between sets
- Don't glue, screw etc. anything together
- Transport the box horizontally
- If something is broken (or breaks) or missing: ***Tell us to get it replaced***

# Do's and Don'ts



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- **Avoid Monolithic commits**, they can reflect in a worse grade!
  - That means, do not push 1000 lines at once.
- **Hand in every assignment on time!** A deadline is a deadline!
- **Do not exchange source code!** Keep it private!
- **We encourage you to exchange ideas**, but we **do not tolerate plagiarism!**
- **Plagiarism** of any form **will get you disqualified from the lab!**

# Thank you!

