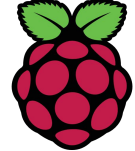# Embedded Systems

## Course introduction

**winter 2025**

# Basic information

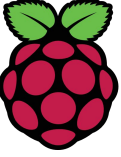- classes - 32h

- meetings - 8 x 4h

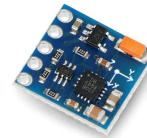- laboratory - B109P (build. B)

- recommended IDE - thonny.org
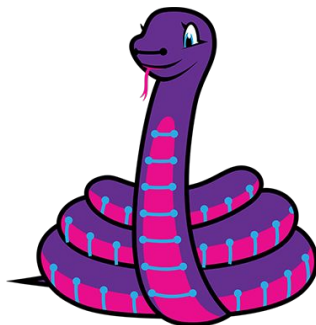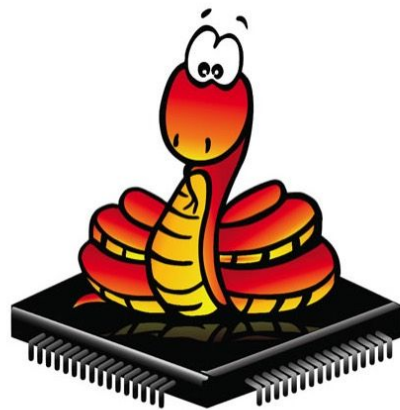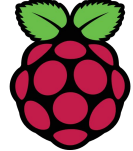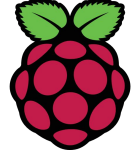
# Hardware

Raspberry Pi
Pico
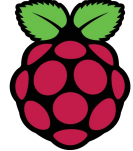
Raspberry Pi
Pico W

Raspberry Pi 4B

# Programming language

# Timetable

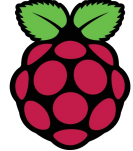- **class #1** - Raspberry Pi Pico - General Purpose Inputs/Outputs, Multi Thread Coding

- **class #2** - Raspberry Pi Pico - Analog inputs, UART, Asynchronous I/O Scheduler, Files

- **class #3** - Raspberry Pi Pico - Interrupts

# Timetable

- **class #4** - Raspberry Pi Pico W - Networking

- **class #5** - Raspberry Pi Pico W - Communication

  Interfaces

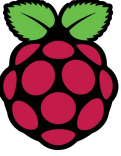- **class #6** - Raspberry Pi Pico W - IOT, MQTT

# Timetable

- ~~**class #7** - Raspberry Pi - Python introduction, GUI~~

- ~~**class #8** - Raspberry Pi - More on Communication Interfaces~~

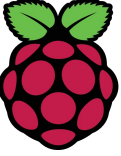# Grades - option 1 - solve tasks

- 3.0 - present a solution for <u>one</u> unsolved task from <u>every</u> manual - class 1 to 4;

- 3.5 - present a solution for <u>one</u> unsolved task from <u>every</u> manual - class 1 to 5;

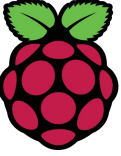- 4.0 - present a solution for <u>one</u> unsolved task from <u>every</u> manual - class 1 to 6.

# Grades - option 2 - mini projects (group of 2)

- 4.0 - project 1 (classes from 1 to 4 combined);

- 5.0 - project 1 and project 2 (classes from 5 to 8 combined);

- ~~5.0 - project 1 and project 2, and project 3 (class 7).~~
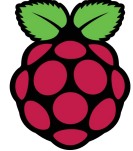
# Grades - option 3 - project path

- individual project;

- deadline #1 - 30.11.2025 - design;

- deadline #2 - 27.01.2026 - project presentation;

- grade depends on quality of a presented solution

  and answers for questions about the solution;
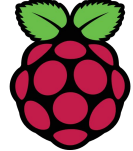
# Grades - summary

- deadline - 27.01.2026

- 2 tasks per meeting

- presentation is mandatory

- sending the solution is mandatory

**<u>Do not send files with the .py extension</u>**

# Classes organization

- **1st hour** - own work - solutions presentation

- **2nd hour** - new topic introduction

- **3rd hour** - own work - time to solve tasks

- **4th hour** - own work - time to solve tasks