Robotics: Course organization

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Outline of the course

- Manipulation robotics
  - Literature: Kevin M. Lynch and Frank C. Park: **Modern Robotics: Mechanics, Planning, and Control**
- **Kinematics** (7 lectures)
  - how to describe the robot pose in space
  - how to find robot pose for a given task, *e.g.* grasping
- Dynamics and Control (2 lectures)
  - how to describe dynamics properties of robot
  - how to control the robot dynamically
- AI in robotics (4 lectures)
  - Motion planning
  - Modern AI applications (RL, GraspNet, . . .)

Laboratories

- Program robotics toolbox in Python
  - combination of work in lab and homework
  - automatic evaluation with unit-tests
  - labs are in KN:E-132
  - labs follow-up the lectures, **study the lecture before lab**
- Solving practical project assignment on real industrial robot
  - robots are located in CIIRC:JP:B-415
  - brute reservation system
  - optional (recommended) consultations
  - safety in the 7th week is mandatory to attend

Evaluation

- Homework:
  - four mandatory assignments: 10 points
  - four optional assignments: max 10 points
- Final project: max 20 points
- Tests during semester (7. and 14. week): max 20 points
- Exam: max 40 points

Teachers

- Lectures: Vladimír Petrík, vladimir.petrik@cvut.cz
- Laboratories
  - Robotics toolbox and homework
    - Martin Cífka
    - David Kovář
  - Final project on real robots
    - Vladimír Smutný
    - Pavel Krsek