# Learning in Robotics

<table>
<thead>
<tr>
<th>Rota</th>
<th>Duration</th>
<th>Semester</th>
<th>SWS</th>
<th>Credit Points</th>
<th>Workload</th>
</tr>
</thead>
<tbody>
<tr>
<td>annually SS</td>
<td>1 Semester</td>
<td>2nd (Semester)</td>
<td>3 SWS</td>
<td>5</td>
<td>150 h</td>
</tr>
</tbody>
</table>

## Module Structure

<table>
<thead>
<tr>
<th>Course (Abbreviation)</th>
<th>Type/ SWS</th>
<th>Presence</th>
<th>Self Study</th>
<th>Credit Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Learning in Robotics (LIR)</td>
<td>Lecture/ 2 SWS</td>
<td>25 h</td>
<td>65 h</td>
<td>3</td>
</tr>
<tr>
<td>b) Learning in Robotics (LIR)</td>
<td>Tutorial/ 1 SWS</td>
<td>15 h</td>
<td>45 h</td>
<td>2</td>
</tr>
</tbody>
</table>

## Language

English

## Content

1. Nonlinear System Identification
2. Learning Robot Kinematics and Dynamics
3. Learning Visual-Motor Coordination
4. Dynamic Programming
5. Reinforcement Learning
6. Evolutionary Robotics
7. Learning from Demonstration

**Literature:**

Slides

## Competencies

The students acquire a profound knowledge of unsupervised and supervised learning in robotic manipulation as well as mobile robotics.

## Examination Requirements

Practical assignments and oral exam.

## Formality of Examination

- ☒ Module Finals
- ☐ Accumulated Grade

## Module Requirements (Prerequisites)

- Program: Automation & Robotics, Field of study: Robotics, Cognitive Systems

## Responsibility/ Lecturer

*apl. Prof. Dr. F. Hoffmann / apl. Prof. Dr. F. Hoffmann*