MICRO-553

Haptic human robot interfaces

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Cursus	Sem.	Type
Microtechnics	MA2, MA4	Opt.
Robotics	MA2	Opt.

Language of teaching	English
Credits	3
Withdrawal	Unauthorized
Session	Summer
Semester	Spring
Exam	Oral
Workload	90h
Weeks	14
Hours	**3 weekly**
Courses	2 weekly
Project	1 weekly
Number of positions	**20**

It is not allowed to withdraw from this subject after the registration deadline.

Summary

This course teaches basic knowledge on haptic devices, force feedback and mechanical man-machine interfaces. Lectures are about 30 %, the rest is hands-on practical work with the "haptic paddle", a complete mechanical device with full laptop control interface. Realization of project in groups of 2.

Learning Outcomes

By the end of the course, the student must be able to:

- Design a haptic interface for robot, rehabilitation, prothesis, exoskeleton
- Realize a haptic interface for robot, rehabilitation, prothesis, exoskeleton
- Analyze a haptic interface for robot, rehabilitation, prothesis, exoskeleton
- Assess / Evaluate a haptic interface for robot, rehabilitation, prothesis, exoskeleton
- Propose a haptic interface for robot, rehabilitation, prothesis, exoskeleton
- Defend the proposed solution
- Explain the purpose and function of a haptic interface

Transversal skills

- Set objectives and design an action plan to reach those objectives.
- Communicate effectively, being understood, including across different languages and cultures.
- Communicate effectively with professionals from other disciplines.
- Access and evaluate appropriate sources of information.
- Write a scientific or technical report.
- Write a literature review which assesses the state of the art.
- Make an oral presentation.
- Summarize an article or a technical report.

Assessment methods

Oral examination