

Course guide

340691 - TROS - Social Robotics Workshop

Last modified: 17/05/2023

Unit in charge: Vilanova i la Geltrú School of Engineering
Teaching unit: 707 - ESAII - Department of Automatic Control.
732 - OE - Department of Management.

Degree: BACHELOR'S DEGREE IN ELECTRICAL ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR'S DEGREE IN INDUSTRIAL DESIGN AND PRODUCT DEVELOPMENT ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR'S DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR'S DEGREE IN MECHANICAL ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR'S DEGREE IN INFORMATICS ENGINEERING (Syllabus 2018). (Optional subject).

Academic year: 2023 **ECTS Credits:** 6.0 **Languages:** Catalan

LECTURER

Coordinating lecturer: Diaz Boladeras, Marta

Others: Diaz Boladeras, Marta
De Sousa Perez, Oscar

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:

CE27. CE27. Basic knowledge and applications of robotic systems.

D16. D16. Knowledge of electronic and basic components and its application to resolve engineering problems.

I_CECO3. CECO3. Ability to assess the computational complexity of a problem, to know algorithmic strategies that may lead to its resolution and to recommend, develop and implement the one which guarantees the best performance according to established requirements.

Transversal:

07 AAT. SELF-DIRECTED LEARNING. Detecting gaps in one's knowledge and overcoming them through critical self-appraisal. Choosing the best path for broadening one's knowledge.

02 SCS N3. SUSTAINABILITY AND SOCIAL COMMITMENT - Level 3. Taking social, economic and environmental factors into account in the application of solutions. Undertaking projects that tie in with human development and sustainability.

04 COE N3. EFFICIENT ORAL AND WRITTEN COMMUNICATION - Level 3. Communicating clearly and efficiently in oral and written presentations. Adapting to audiences and communication aims by using suitable strategies and means.

06 URI N3. EFFECTIVE USE OF INFORMATION RESOURCES - Level 3. Planning and using the information necessary for an academic assignment (a final thesis, for example) based on a critical appraisal of the information resources used.

07 AAT N3. SELF-DIRECTED LEARNING - Level 3. Applying the knowledge gained in completing a task according to its relevance and importance. Deciding how to carry out a task, the amount of time to be devoted to it and the most suitable information sources.

TEACHING METHODOLOGY

LEARNING OBJECTIVES OF THE SUBJECT

1. Design and implement interactive behaviors on a robotic platform, according to the purpose
2. Understand from experience the basic mechanisms of the operation of socially interactive robots and their complexity.
3. Incorporate the purpose of the project in all phases of ideation and implementation. Always consider user requirements and usage context.
4. Acquire realistic knowledge of the state of the art of the various elements that make up social robots such as sensors, actuators, and artificial intelligence associated with these skills.
5. To know the fields of application of social robotics and to assess in a more realistic and critical way the role that social robotics will play in our immediate future, and the ethical concerns that it entails.
6. Apply the basic elements of user-centered design such as inquiring into user needs and preferences, ideation, brainstorming, low fidelity prototyping and testing with users with functional prototypes.

STUDY LOAD

Type	Hours	Percentage
Self study	90,0	60.00
Hours large group	30,0	20.00
Hours small group	30,0	20.00

Total learning time: 150 h

CONTENTS

title english

Description:

content english

Full-or-part-time: 2h

Theory classes: 1h

Practical classes: 1h

title english

Description:

content english

Full-or-part-time: 2h

Theory classes: 1h

Laboratory classes: 1h

title english

Description:

content english

Full-or-part-time: 2h

Theory classes: 1h

Laboratory classes: 1h

ACTIVITIES

name english

Full-or-part-time: 36h

Theory classes: 8h

Laboratory classes: 4h

Guided activities: 4h

Self study: 20h

name english

Full-or-part-time: 32h

Theory classes: 6h

Laboratory classes: 3h

Guided activities: 3h

Self study: 20h

name english

Full-or-part-time: 32h

Theory classes: 6h

Laboratory classes: 3h

Guided activities: 3h

Self study: 20h

name english

Full-or-part-time: 50h

Theory classes: 5h

Laboratory classes: 10h

Guided activities: 5h

Self study: 30h

GRADING SYSTEM

BIBLIOGRAPHY

Basic:

- Bartneck, Christoph; Belpaeme, Tony; Eyssel, Friederike; Kanda, Takayuki; Keijsers, Merel; Ščabanović, Selma. Human-robot interaction : an introduction [on line]. Cambridge, United Kingdom: Cambridge University Press, 2020 [Consultation: 15/02/2024]. Available on :

<https://www-cambridge-org.recursos.biblioteca.upc.edu/core/books/humanrobot-interaction/2C042DEB4D0ECFFA5485857314E885BC#>. ISBN 9781108676649.

- Movellan, J. R., Eckhardt, M., Virnes, M., & Rodriguez, A. . "Sociable robot improves toddler vocabulary skills". Proceedings of the 4th ACM/IEEE International Conference on Human-Robot Interaction, HRI'09 [on line]. [Consultation: 01/07/2020]. Available on: https://tdlc.ucsd.edu/SV2012/Pubs/Pubs2/Movellan_hri2009-b.pdf.