

Course guide

330115 - AP - Production Automation

Last modified: 25/04/2024

Unit in charge: Manresa School of Engineering

Teaching unit: 750 - EMIT - Department of Mining, Industrial and ICT Engineering.

Degree: BACHELOR'S DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR'S DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2016). (Optional subject).

Academic year: 2024

ECTS Credits: 6.0

Languages: Catalan

LECTURER

Coordinating lecturer: MARC BACARDIT SUBIRANA

Others:

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:

1. Knowledge of discrete event-oriented systems.
2. (ENG) Modelatge en xarxes de Petri.
3. (ENG) Programació en softwares de simulació.

Transversal:

4. 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.
5. TEAMWORK - Level 3. Managing and making work groups effective. Resolving possible conflicts, valuing working with others, assessing the effectiveness of a team and presenting the final results.
6. 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.
7. THIRD LANGUAGE. Learning a third language, preferably English, to a degree of oral and written fluency that fits in with the future needs of the graduates of each course.

TEACHING METHODOLOGY

LEARNING OBJECTIVES OF THE SUBJECT

STUDY LOAD

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

Total learning time: 150 h



CONTENTS

(ENG) Títol contingut 1: INTRODUCCIÓ A LES TÈCNIQUES DE SIMULACIÓ

Full-or-part-time: 12h

Theory classes: 6h

Laboratory classes: 6h

(ENG) Títol contingut 2: MODELAT DE SISTEMES ORIENTATS A ESDEVENIMENTS DISCRETS

Full-or-part-time: 54h

Theory classes: 12h

Laboratory classes: 12h

Self study : 30h

(ENG) Títol contingut 3: PROGRAMACIÓ, DISSENY D'EXPERIMENTS I ANÀLISIS DE RESULTATS

Full-or-part-time: 84h

Theory classes: 12h

Laboratory classes: 12h

Self study : 60h

ACTIVITIES

(ENG) TÍTOL DE L'ACTIVITAT 1: EXERCICIS DE SEGUIMENT

Full-or-part-time: 30h

Self study: 30h

(ENG) TÍTOL DE L'ACTIVITAT 2: MINIPROJECTE

Full-or-part-time: 90h

Self study: 60h

Laboratory classes: 30h

GRADING SYSTEM



BIBLIOGRAPHY

Basic:

- Law, Averill M.. Simulation modeling and analysis [on line]. 5th ed. New York: McGraw-Hill, 2015 [Consultation: 14/06/2024]. Available on : <https://ebookcentral-proquest-com.recursos.biblioteca.upc.edu/lib/upcatalunya-ebooks/detail.action?pq-origsite=primo&docID=6327699>. ISBN 9780073401324.
- Banks J. ; Carson J. S. ; Nelson B. L. Discrete-event system simulation [on line]. 3rd ed. Upper Saddle River: Prentice-Hall, 2001 [Consultation: 01/06/2022]. Available on : <https://ebookcentral-proquest-com.recursos.biblioteca.upc.edu/lib/upcatalunya-ebooks/detail.action?docID=5174427>. ISBN 0130887021.

Complementary:

- Scheaffer R. L. ; McClave J. T. Probability and statistics for engineers. 4th ed. Belmont: Duxbury Press, 1995. ISBN 0534209645.
- Barcelo, J. Simulación de sistemas discretos. Madrid: ISDEFE, 1996. ISBN 8489338124.
- Kelton D. W. ; Sadowski R. P. ; Sturrock D. A. Simulation with arena. 3rd edition. Boston: McGraw-Hill, 2004. ISBN 0072856947.