

[MSD002] Design of electronic systems

GENERAL INFORMATION

| | | | |
|------------------|---------------------------------------|--|--|
| Studies | MASTER DEGREE IN SMART ENERGY SYSTEMS | Subject | Hardware and rapid prototyping |
| Semester | 2 | Course | 1 |
| Character | COMPULSORY | Mention / Field of specialisation | |
| Plan | 2022 | Modality | Face-to-face |
| Credits | 4,5 | Hours/week | 0 |
| | | Language | CASTELLANO |
| | | Total hours | 63 class hours + 49.5 non-class hours = 112.5 total hours |

PROFESSORS

OYARZUN GOYALDE, JAVIER

GARAYALDE PEREZ, ERIK

REQUIRED PREVIOUS KNOWLEDGE

| Subjects | Knowledge |
|--|----------------------------------|
| (No specific previous subjects required) | (No previous knowledge required) |

LEARNING RESULTS

| LEARNING RESULTS | KC | SK | AB | ECTS |
|--|----|----|---------------|------------|
| MSR111 - Design and manufacture affordable, non-polluting and electromagnetically compatible electronic circuits for the efficient integration of the different equipment making up a power system. | | x | | 4,16 |
| MSR171 - Ability to work in multidisciplinary teams and in a multilingual environment | x | | x | 0,08 |
| MSR222 - Exhibits, argues and defends the results obtained in the work carried out before a panel of judges | | | x | 0,1 |
| MSR251 - Develops a project in the field of energy systems in a practical application context | | x | | 0,16 |
| | | | Total: | 4,5 |

KC: Knowledge or Content / SK: Skills / AB: Abilities

SECONDARY LEARNING RESULTS

RMS118 [!] *Diseñar y fabricar circuitos electrónicos asequibles, no contaminantes y electromagnéticamente compatibles para la integración eficiente de los diferentes equipos que componen un sistema de energía*

| LEARNING ACTIVITIES | CH | NCH | TH |
|---|-------|-------|-------|
| Personal study and flexible development of concepts and subjects using active dynamics, to foster more meaningful learning | | 15 h. | 15 h. |
| Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints | 2 h. | | 2 h. |
| Computer simulation exercises, individually and/or in teams | 21 h. | 26 h. | 47 h. |
| Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects | 40 h. | | 40 h. |

| EVALUATION SYSTEM | W | MAKE-UP MECHANISMS |
|--|-----|---|
| Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems | 34% | Individual written and/or oral tests or individual coding/programming tests |
| Presentation and defence of exercises, case studies, computer practical work, simulation practical work, laboratory practical work, term projects, end of degree project, master's thesis, challenges and problems | 33% | |
| Individual written and/or oral tests or individual coding/programming tests | 33% | |

CH - Class hours: 63 h.

NCH - Non-class hours: 41 h.

TH - Total hours: 104 h.

RMS171 [!] *Es capaz de trabajar en equipos multidisciplinares y en un entorno multilingüe*

| LEARNING ACTIVITIES | CH | NCH | TH |
|---|----------|---------------------------|------|
| Development and writing of records, reports, presentations, audiovisual material, etc. on projects/work experience/challenges/case studies/experimental investigations carried out individually and/or in teams | | 2 h. | 2 h. |
| EVALUATION SYSTEM | W | MAKE-UP MECHANISMS | |
| Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems | 100% | (No mechanisms) | |
| CH - Class hours: 0 h. NCH - Non-class hours: 2 h. TH - Total hours: 2 h. | | | |

RMS222 [!] *Expone, argumenta y defiende ante un tribunal los resultados obtenidos en el trabajo desarrollado*

| LEARNING ACTIVITIES | CH | NCH | TH |
|---|----------|---------------------------|--------|
| Development and writing of records, reports, presentations, audiovisual material, etc. on projects/work experience/challenges/case studies/experimental investigations carried out individually and/or in teams | | 2,5 h. | 2,5 h. |
| EVALUATION SYSTEM | W | MAKE-UP MECHANISMS | |
| Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems | 100% | (No mechanisms) | |
| CH - Class hours: 0 h. NCH - Non-class hours: 2,5 h. TH - Total hours: 2,5 h. | | | |

RMS251 [!] *Desarrolla un proyecto del ámbito de los sistemas energéticos en un contexto de aplicación práctica*

| LEARNING ACTIVITIES | CH | NCH | TH |
|---|----------|---------------------------|------|
| Development and writing of records, reports, presentations, audiovisual material, etc. on projects/work experience/challenges/case studies/experimental investigations carried out individually and/or in teams | | 4 h. | 4 h. |
| EVALUATION SYSTEM | W | MAKE-UP MECHANISMS | |
| Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems | 100% | (No mechanisms) | |
| CH - Class hours: 0 h. NCH - Non-class hours: 4 h. TH - Total hours: 4 h. | | | |

CONTENTS

LEARNING RESOURCES AND BIBLIOGRAPHY

| Learning resources | Bibliography |
|--|---|
| Moodle Platform Labs Slides of the subject | Acceso online a bibliografía: https://labur.eus/O8zEA |

Computer practical training