

Politeknikoa Escuela Politécnica Course: 2024 / 2025 - Course planning

Superior [GJI202] MECHATRONIC SYSTEMS ASSEMBLY LABORATORY II **GENERAL INFORMATION** Studies DEGREE IN MECHATRONICS ENGINEERING Subject ? Semester 2 Course 2 Mention / Field of ??? specialisation Character OPTIONAL Plan 2022 Modality Face-to-face Language EUSKARA/CASTELLANO Credits 4,5 Hours/week 3.69 Total hours 66.5 class hours + 46 non-class hours = 112.5 total hours **2030 AGENDA GOALS** M R PROFESSORS ANZOLA GARCIA, JON ARCE SAN VICENTE, JOSU AZPI-VIGURI, MIGUEL ANGEL (SOMORROSTRO) CABEZAS OLIVENZA, MIREYA **REQUIRED PREVIOUS KNOWLEDGE** Subjects Knowledge **BASIC INDUSTRIAL AUTOMATION** (No previous knowledge required) ELECTRICAL POWER SYSTEMS LEARNING RESULTS кс sк ΑВ LEARNING RESULTS ECTS GJR210 - To know and apply principles of installation of automated electrical systems and measurement 4.02 x of electrical variables 0,32 G-RTR1 - To develop interdisciplinary projects specific to their specialty and of gradual complexity, x becoming aware of respect for human rights and fundamental rights, and analyzing and assessing the impact of the proposed solutions on the SDGs - to acquire and/or apply basic, advanced and/or avant-garde, demonstrating the ability to work in multidisciplinary teams and/or undertake further studies with a high degree of autonomy G-RTR2 - To express information, ideas and the arguments that support them in an orderly, clear and 0 16 x coherent manner, orally and in writing, based on quality information, self-made or obtained from different sources, using inclusive and non-discriminatory language Total: 4.5 KC: Knowledge or Content / SK: Skills / AB: Abilities SECONDARY LEARNING RESULTS 2RGJ291 (2 sem) СН NCH ΤН LEARNING ACTIVITIES Conducting tests, giving presentations, presenting defences, taking examinations and/or doing 2 h. 1 h. 3 h. checkpoints **EVALUATION SYSTEM** w MAKE-UP MECHANISMS Reports on the completion of exercises, case studies, 100% (No mechanisms) computer exercises, simulation exercises, laboratory Comments: Continuous assessment. Retake is not foreseen. exercises, term projects, challenges and problems CH - Class hours: 2 h. NCH - Non-class hours: 1 h. TH - Total hours: 3 h. 2RGJ292 (2 sem) LEARNING ACTIVITIES СН NCH ΤН

Goi Eskola Politeknikoa | Mondragon Unibertsitatea Course: 2024 / 2025 - Course planning

Mondragon Unibertsitatea Goi Eskola Politeknikoa Escuela Politécnica Superior

ന

| Carrying out/resolving projects/challenges/cases, etc. to provide solutions to problems in 1 h. 1 h. 2 h. interdisciplinary contexts, real and/or simulated, individually and/or in teams | | | | | |
|--|------|----------------|----------|---------|--|
| EVALUATION SYSTEM | W | MAKE-UP MECHAN | SMS | | |
| Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems CH - Class hours: 1 h. | 100% | | (No mech | anisms) | |
| NCH - Non-class hours: 1 h. | | | | | |
| TH - Total hours: 2 h. | | | | | |
| | | | | | |
| | | | | | |

RGJ229 [!] Utiliza diferentes instrumentos para la verificación y medida de variables eléctricas

| LEARNING ACTIVITIES | | | | NCH | тн |
|---|-----|---|---------|-------|---------|
| 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 | | | 8 h. | 6 h. | 14 h. |
| Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects | | | | 2 h. | 6 h. |
| Practical work in workshops and/or laboratories, individually and/or in teams | | | 19,5 h. | 11 h. | 30,5 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 | 80% | Individual written and/or oral tests or individual coding/programming tests Comments: In case of need of recovery, final result: 25% grade | | | |

| exercises, term projects, challenges and problems | | Comments: In case of need of recovery, final result: 25% |
|---|-----|--|
| Presentation and defence of exercises, case studies, | 20% | obtained in practical exercises + 75% recovery grade. |
| computer practical work, simulation practical work, | | |
| laboratory practical work, term projects, end of degree | | |
| project, master's thesis, challenges and problems | | |

CH - Class hours: 31,5 h. NCH - Non-class hours: 19 h. TH - Total hours: 50,5 h.

| 2RGJ293 (2 sem) LEARNING ACTIVITIES | | | сн | ИСН | тн |
|---|------|--|-----------|-----------------------------|-----------------|
| 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 | | | | 1 h. | 2 h. |
| EVALUATION SYSTEM | W | MAKE-UP MECHANI | SMS | | |
| Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems CH - Class hours: 1 h. NCH - Non-class hours: 1 h. TH - Total hours: 2 h. | 100% | Comments: Revision semester project | (No mecha | anisms) on of the writte | n report of the |
| 2RGJ290 (2 sem) | | | | | |
| LEARNING ACTIVITIES | | | СН | NCH | ТН |

Course: 2024 / 2025 - Course planning

| Superior | | | | | |
|---|-----------------------------|---|-------------------------|-----------------------------|------------------------------|
| Carrying out/resolving projects/challenges/cases, etc. to provide solutions to problems in 2 h. 1 h. 3 h. interdisciplinary contexts, real and/or simulated, individually and/or in teams | | | | | 3 h. |
| EVALUATION SYSTEM | W | MAKE-UP MECHANISI | MS | | |
| Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems | 100% | (No mechanisms) Comments: Continuous assessment. Retake is not fore | | not foreseen. | |
| CH - Class hours: 2 h. NCH - Non-class hours: 1 h. TH - Total hours: 3 h. | | | | | |
| 2RGJ294 (2 sem) | | | | | |
| LEARNING ACTIVITIES | | | СН | NCH | тн |
| Development and writing of records, reports, presentation projects/work experience/challenges/case studies/experin individually and/or in teams | is, audiovis nental inve | sual material, etc. on stigations carried out | 1 h. | 1 h. | 2 h. |
| EVALUATION SYSTEM | W | MAKE-UP MECHANISI | MS | | |
| Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems CH - Class hours: 1 h. NCH - Non-class hours: 1 h. | 100% | Comments: Continuous | (No mecha s assessme | anisms) ent. Retake is i | not foreseen. |
| RGJ228 [!] Realiza instalaciones de sistemas eléctric | os automa | atizados, interpretando p | lanos, esq | uemas y prod | cedimientos. |
| LEARNING ACTIVITIES | | | СН | NCH | ТН |
| Development and writing of records, reports, presentation projects/work experience/challenges/case studies/experin individually and/or in teams | is, audiovis nental inve | sual material, etc. on stigations carried out | 8 h. | 6 h. | 14 h. |
| Personal study and flexible development of concepts and subjects using active dynamics, to 2 h. 6 h. 8 h. foster more meaningful learning | | | | | 8 h. |
| Carrying out/resolving projects/challenges/cases, etc. to provide solutions to problems in 8 h. 4 h. 12 h. interdisciplinary contexts, real and/or simulated, individually and/or in teams | | | 12 h. | | |
| Seminars, debates and/or workshops to deepen and/or sl | nare exper | ences. | 10 h. | 6 h. | 16 h. |
| EVALUATION SYSTEM | W | MAKE-UP MECHANISI | MS | | |
| Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems | 80% | Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems | | | dies, computer ises, term |
| 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 | 20% | Comments: The mark is calculated by the grade obtained from the results of the practical exercises. In case of need of recovery, final result: 25% grade obtained in practical exercises + 75% recovery grade. | | | |

CH - Class hours: 28 h. NCH - Non-class hours: 22 h. TH - Total hours: 50 h.

CONTENTS

INSTALLATION OF AUTOMATED ELECTRICAL SYSTEMS- Interpretation of electrical drawings (EPLAN Software)- Wir ing of automated electrical installations for different applicationsVERIFICATION AND MEASUREMENT TECHNIQU



ES OF MAGNITUDES IN ELECTRICAL/ELECTRONIC SYSTEMS- Measurement instrumentation

LEARNING RESOURCES AND BIBLIOGRAPHY

| Learning resources | Bibliography |
|--|--|
| [!] Plataforma Moodle [!] Transparencias de la asignatura [!] Laboratorios [!] Presentaciones en clase [!] Realización de prácticas en laboratorio | PALLAS, R. 2003. Sensores y acondicionadores de señal. Barcelona. Marcombo LÁZARO, A.M. 1994. Problemas resueltos de instrumentación y medidas electrónicas. Madrid. Paraninfo. CERDÁ, L.M. 2014. Instalaciones eléctricas y automatismos. Madrid. Paraninfo. |
| | GISCHEL, B. 2016. EPLAN Electric P8 Reference Handbook. Hanser Gardner Publications |
| | http://katalogoa.mondragon.edu/janium-bin/janium_login_opac_re_ln k.pl?grupo=MECATRONICA22&ejecuta=30&_ST |