

Goi Eskola Politeknikoa | Mondragon Unibertsitatea

Course: 2024 / 2025 - Course planning

Politekniko: Escuela Politécnica Superior [GJK207] INSTRUMENTATION LABORATORY **GENERAL INFORMATION** Studies DEGREE IN MECHATRONICS ENGINEERING Subject INDUSTRIAL ELECTRONICS Semester 1 Course 4 Mention / Field of ??? specialisation Character OPTIONAL Plan 2022 Modality Face-to-face Language CASTELLANO Credits 4,5 Hours/week 2.81 Total hours 50.5 class hours + 62 non-class hours = 112.5 total hours 2030 AGENDA GOALS PROFESSORS LOPEZ RAMIREZ, IZAR REQUIRED PREVIOUS KNOWLEDGE Subjects Knowledge (No specific previous subjects required) (No previous knowledge required) LEARNING RESULTS LEARNING RESULTS KC SK AB ECTS GJR406 - To know and apply principles of electronic instrumentation 4.02 G-RTR1 - To develop interdisciplinary projects specific to their specialty and of gradual complexity, -0,24 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 0.24 coherent manner, orally and in writing, based on quality information, self-made or obtained from different sources, using inclusive and non-discriminatory language 4.5 Total: KC: Knowledge or Content / SK: Skills / AB: Abilities SECONDARY LEARNING RESULTS RGJ418 [!] Diseña circuitos electrónicos para realizar mediciones de corriente con diferentes sensores LEARNING ACTIVITIES СН NCH ΤН 8 h 22 h Computer simulation exercises, individually and/or in teams 14 h Presentation by the teacher in the classroom, in participatory classes, of concepts and 45h 4 h 85h procedures associated with the subjects 4 h. 8 h. 12 h. Carrying out exercises and solving problems individually and/or in teams Practical work in workshops and/or laboratories, individually and/or in teams 6 h. 2 h. 8 h. **EVALUATION SYSTEM** w MAKE-UP MECHANISMS Reports on the completion of exercises, case studies, 50% Individual written and/or oral tests or individual computer exercises, simulation exercises, laboratory coding/programming tests exercises, term projects, challenges and problems 50% Individual written and/or oral tests or individual coding/programming tests CH - Class hours: 22,5 h. NCH - Non-class hours: 28 h. TH - Total hours: 50,5 h. RGJ419 [!] Diseña circuitos electrónicos para controlar máquinas eléctricas

LEARNING ACTIVITIES

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|--|-------------|----------------|----------|---------|-------|--|
| Computer simulation exercises, individually and/or in teams | | | 5 h. | 12 h. | 17 h. | |
| Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects | | | 5 h. | | 5 h. | |
| Carrying out exercises and solving problems individually and/or in teams | | | 6 h. | 10 h. | 16 h. | |
| Practical work in workshops and/or laboratories, individua | ally and/or | in teams | 12 h. | | 12 h. | |
| EVALUATION SYSTEM | W | MAKE-UP MECHAN | IISMS | | | |
| Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems | 50% | | (No mech | anisms) | | |
| Individual written and/or oral tests or individual coding/programming tests | 50% | | | | | |
| CH - Class hours: 28 h. NCH - Non-class hours: 22 h. | | | | | | |
| TH - Total hours: 50 h. | | | | | | |

RGJ491 [!] Coordinar el equipo de trabajo, estimulando la cohesión y buen clima para lograr la integración de todas las personas y su contribución para alcanzar un rendimiento apropiado, tanto a nivel individual como grupal, para el desarrollo del proyecto en

| nterdisciplinary contexts, real and/or simulated, individually an | nd/or ir | n teams | 011. | 511. |
|--|----------|---|------------------------------------|--------------|
| EVALUATION SYSTEM | v | MAKE-UP MECHANISMS | | |
| Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems | 00% | (No mec Comments: Continuous assessn | <i>hanisms)</i> nent. Retake is | not foreseen |

NCH - Non-class hours: 3 h. TH - Total hours: 3 h.

| RGJ493 [!] Elabora la memoria del proyecto, aportando argumentos elaborados y haciendo un uso correcto, inclusivo y no discriminatorio del lenguaje. | | | | | |
|--|-----------------------------|--------------------------------------|---------------------------------------|---------------|--|
| LEARNING ACTIVITIES | | СН | NCH | ТН | |
| Carrying out/resolving projects/challenges/cases, etc. to p interdisciplinary contexts, real and/or simulated, individua | provide sol Ily and/or i | utions to problems in n teams | 3 h. | 3 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 me Comments: Continuous asses | <i>echanisms)</i> sment. Retake is | not foreseen. | |
| CH - Class hours: 0 h. NCH - Non-class hours: 3 h. TH - Total hours: 3 h. | | | | | |
| | | | | | |
| RGJ490 [!] Definir y gestionar los objetivos y la plani | ficación d | e un proyecto que permita adqu | iirir y/o reforzar | los | |

conocimientos de tecnologías específicas de su especialidad,- que en ocasiones llegan a la vanguardia del conocimiento- y definir una estrategia

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| LEARNING ACTIVITIES | | | СН | NCH | ТН |
|--|---|--|--|--|--|
| Carrying out/resolving projects/challenges/cases, etc. to p interdisciplinary contexts, real and/or simulated, individual | orovide sol lly and/or i | utions to problems in n teams | | 3 h. | 3 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 | 100% | Comments: Continuo | (No mech us assessme | <i>anisms)</i> ent. Retake is | not foreseen. |
| CH - Class hours: 0 h. NCH - Non-class hours: 3 h. TH - Total hours: 3 h. | | | | | |
| | | | | | |
| RGJ494 [!] Realiza una presentación oral del proyecto | 0, justifica | ando las soluciones pro | puestas co | n argumento: | s elaborados y |
| RGJ494 [!] Realiza una presentación oral del proyecto orecisos, y haciendo un uso correcto, inclusivo y no di | o, justifica iscriminat | ando las soluciones pro torio del lenguaje. | opuestas co | n argumento: | s elaborados y |
| RGJ494 [!] Realiza una presentación oral del proyecto precisos, y haciendo un uso correcto, inclusivo y no di LEARNING ACTIVITIES Carrying out/resolving projects/challenges/cases, etc. to p interdisciplinary contexts, real and/or simulated, individual | o, justifica iscriminat provide sol | ando las soluciones pro torio del lenguaje. utions to problems in n teams | ppuestas co CH | n argumentos NCH 3 h. | s elaborados y <u>TH</u> 3 h. |
| RGJ494 [!] Realiza una presentación oral del proyecto precisos, y haciendo un uso correcto, inclusivo y no di LEARNING ACTIVITIES Carrying out/resolving projects/challenges/cases, etc. to p interdisciplinary contexts, real and/or simulated, individual EVALUATION SYSTEM | o, justifica iscriminat provide sol lly and/or i W | ando las soluciones pro torio del lenguaje. utions to problems in n teams MAKE-UP MECHANI | ориestas co CH SMS | n argumentos NCH 3 h. | s elaborados y TH 3 h. |
| RGJ494 [!] Realiza una presentación oral del proyecto precisos, y haciendo un uso correcto, inclusivo y no di precisos, y haciendo un uso correcto, inclusivo y no di LEARNING ACTIVITIES Carrying out/resolving projects/challenges/cases, etc. to p interdisciplinary contexts, real and/or simulated, individual EVALUATION SYSTEM Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems | o, justifica iscriminat provide sol lly and/or i <u>W</u> 100% | ando las soluciones pro torio del lenguaje. utions to problems in n teams <u>MAKE-UP MECHANI</u> Comments: Continuo | CH CH SMS (No mech us assessme | n argumentos NCH 3 h. anisms) ent. Retake is | s elaborados y <u>TH</u> 3 h. not foreseen. |

CONTENTS

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La asignatura se compone de dos prácticas de laboratorio: Práctica 1: Diseño de una alarma de temperatura Práctica 2: Diseño de un regulador de velocidad para un motor DC

LEARNING RESOURCES AND BIBLIOGRAPHY

| Learning resources | Bibliography |
|--|--|
| [!] Consultas en páginas web relacionadas con el tema [!] Plataforma Moodle [!] Presentaciones en clase [!] Realización de prácticas en laboratorio | [1] P. Arruti, J. Errasti and J. C. Lizarbe. (2001, Logika Digitala Eta Mikroprogramagarria Available: www.elhuyar.org/edizioak/produktuak/LOGIKA-DIGITALA.pdf [2] C. Cole. (2011, 2011). Real Digital - A Hands-on Approach to Digital Design Available: http://www.digilentinc.com/classroom/realdigital/. [3] B. Holdsworth and R. C. Woods, Digital Logic Design. Oxford: Newnes, 2003. http://ezproxy.mondragon.edu:81/login?url=http://www .engineeringvillage.com/controller/servlet/OpenURL?genre=book&is b n=9780750645829 [4] R. F. Tinder, R. F. Tinder and Referex, Engineering Digital Design. San Diego: Academic Press, 2000. ezproxy.mondragon.edu:81/login? url=http://www.engineeringvillage. com/controller/servlet/OpenURL?ge |
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