

[GJI001] MECHATRONIC SYSTEMS ASSEMBLY LABORATORY I

GENERAL INFORMATION

Studies	DEGREE IN MECHATRONICS ENGINEERING		Subject	ELECTROMECHANICS	
Semester	2	Course	2	Mention / Field of specialisation	
Character	OPTIONAL	Modality	Face-to-face	Language	EUSKARA
Plan	2017	Hours/week	3.75	Total hours	67.5 class hours + 45 non-class hours = 112.5 total hours
Credits	4,5				

PROFESSORS

ERAÑA LARRAÑAGA, IÑIGO

REQUIRED PREVIOUS KNOWLEDGE

Subjects	Knowledge
GRAPHIC REPRESENTATION MECHANICAL SYSTEMS	(No previous knowledge required)

SKILLS

VERIFICA SKILLS

SPECIFIC

GJCE33 - Knowledge and capacity for the assembly and servicing of mechanical systems

GENERAL

GJCG03 - Addressing and optimising activities of assembly, commissioning, assistance and maintenance of facilities, machinery, and industrial mechatronic systems

GJCG04 - Managing technically teams and people in activities of assembly, commissioning, assistance and maintenance of facilities, machinery and industrial systems, through the methodology of administration by projects for the effective execution of planning

CROSS

GJCTR2 - To be able to understand and apply knowledge to problem solving in complex work situations or specialised and professional environments calling for creative and innovative ideas, using self-developed arguments and procedures;

GJCTR3 - To clearly and accurately communicate knowledge, methods, ideas, problems and solutions in their field of study to all kinds of audiences (both expert and lay).

LEARNING RESULTS

RG201 They coordinate their work with the other members of the team, contribute in their team to the development of the tasks to be carried out and the creation of a good working climate.

LEARNING ACTIVITIES

	CH	NCH	TH
Development, writing and presentation of memorandums, reports, audiovisual material, etc.	2 h.	1 h.	3 h.
Relating to projects/POPBLs carried out individually or in teams			

EVALUATION SYSTEM

Technical skills, involvement in the project, finished work, obtained results, handed documentation, presentation and technical defence

W
100%

MAKE-UP MECHANISMS

Technical skills, involvement in the project, finished work, obtained results, handed documentation, presentation and technical defence
Comments: Continuous assessment. Retake is not foreseen.

CH - Class hours: 2 h.

NCH - Non-class hours: 1 h.

TH - Total hours: 3 h.

RG202 They make decisions and assess the possible consequences of the selected alternative.

LEARNING ACTIVITIES

	CH	NCH	TH
Development, writing and presentation of memorandums, reports, audiovisual material, etc.	2 h.	1 h.	3 h.
Relating to projects/POPBLs carried out individually or in teams			

EVALUATION SYSTEM

Technical skills, involvement in the project, finished work, obtained results, handed documentation, presentation and technical defence

W
100%

MAKE-UP MECHANISMS

Technical skills, involvement in the project, finished work, obtained results, handed documentation, presentation and technical defence
Comments: Continuous assessment. Retake is not foreseen.

CH - Class hours: 2 h.

NCH - Non-class hours: 1 h.

TH - Total hours: 3 h.

RG204 They define the problem, the development of the solution, as well as the conclusions in an effective way, making a correct use of the language, in writing.

LEARNING ACTIVITIES

	CH	NCH	TH
Development, writing and presentation of memorandums, reports, audiovisual material, etc.	2 h.	1 h.	3 h.
Relating to projects/POPBLs carried out individually or in teams			

EVALUATION SYSTEM

	W
Technical skills, involvement in the project, finished work, obtained results, handed documentation, presentation and technical defence	100%

MAKE-UP MECHANISMS

Technical skills, involvement in the project, finished work, obtained results, handed documentation, presentation and technical defence
Comments: Revision and correction of the written report of the semester project

CH - Class hours: 2 h.

NCH - Non-class hours: 1 h.

TH - Total hours: 3 h.

RG205 They define the problem, the development of the solution, as well as the conclusions in an effective way, making a correct use of the language, orally.

LEARNING ACTIVITIES

	CH	NCH	TH
Development, writing and presentation of memorandums, reports, audiovisual material, etc.	2 h.	1 h.	3 h.
Relating to projects/POPBLs carried out individually or in teams			

EVALUATION SYSTEM

	W
Technical skills, involvement in the project, finished work, obtained results, handed documentation, presentation and technical defence	100%

MAKE-UP MECHANISMS

Technical skills, involvement in the project, finished work, obtained results, handed documentation, presentation and technical defence
Comments: Continuous assessment. Retake is not foreseen.

CH - Class hours: 2 h.

NCH - Non-class hours: 1 h.

TH - Total hours: 3 h.

RGJ229 They assemble, adjust and set-up mechatronic systems, interpreting plans, diagrams and assembly and disassembly procedures.

LEARNING ACTIVITIES

	CH	NCH	TH
Development, writing and presentation of memorandums, reports, audiovisual material, etc.	12 h.	8 h.	20 h.
Relating to projects/POPBLs carried out individually or in teams			
Individual study and work, tests and evaluations and check points	2 h.	6 h.	8 h.
Presentation of the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	14 h.	10 h.	24 h.
Individual or team workshop and/or lab practice	31,5 h.	17 h.	48,5 h.

EVALUATION SYSTEM

	W
Individual written and oral tests to assess technical skills of the subject	25%
Reports of solving exercises, case studies, computer practices, simulation practices and laboratory practices	55%
Technical skills, involvement in the project, finished work, obtained results, handed documentation, presentation and technical defence	20%

MAKE-UP MECHANISMS

Individual written and oral tests to assess technical skills of the subject
Comments: A retake exam for the individual test would be considered. Final mark: retake exam (75%) + exam (25%). Laboratory practices will be made-up by on-going evaluation.

CH - Class hours: 59,5 h.

NCH - Non-class hours: 41 h.

TH - Total hours: 100,5 h.

CONTENTS

1. Analysis of mechanical assemblies, tools and basic operations

- Analysis of mechanical assemblies: tolerances, materials, manufacturing processes.
- Basic tools for mechanical assembly/disassembly.
- Use of machinery and basic operations.

2. Joints

- Screwed joints.
- Other joints.

3. Sealing elements

- Static sealing.
- Dynamic sealing.

4. Guiding

- Rotary guiding.
- Linear guiding.

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources	Bibliography
Subject notes	ORTEA, L. 2007. Montaje y mantenimiento mecánico. E. Ortea.
Topic related web quires	CHILDS, P. R. 2014. Mechanical design engineering Handbook. Oxford Butterworth Heinemann.
Moodle Platform	NORTON, R. L. 2013. Diseño de maquinaria. Síntesis y análisis de máquinas y mecanismos. 5ª edición. McGraw-Hill.
Labs	SCHMID, Steven R., HAMROCK Bernard J., JACOBSON, Bo O. 2014, Fundamentals of machine elements. CRC Press LLC.
Video projections	



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SISTEMA MEKATRONIKOEN MUNTAI LABORATEGIA I IKASGAIAN EGINDAKO EGOKITZAPENAK-

Adaptaciones realizadas en la
asignatura Laboratorio de
montaje de sistemas
mecatrónicos I

Marzo - 2020 - Martxoa

TESTUINGURUA / CONTEXTO

<p>2019-20 ikasturte honetan COVID19 pandemiak eragindako alarma-egoera dela eta, berez aurrez aurreko ikasketak direnak on line modalitatera egokitu behar izan ditu MONDRAGON UNIBERTSITATEko Goi Eskola Politeknikoak GRADU ZEIN MASTER-etako tituluetan.</p>	<p>El estado de alarma sobrevenido por la pandemia de COVID19 en el presente curso 2019-20, ha llevado a la Escuela Politécnica Superior de MONDRAGON UNIBERTSITATEA a impartir en modo on-line, formación de títulos de GRADO Y MÁSTER que fueron diseñados para impartir en modo presencial</p>
<p>Egokitzapen honek bi jarduera motatan eragin dio nagusiki ikaskuntzari:</p> <ul style="list-style-type: none"> -FORMAZIO JARDUERETAN -EBALUAZIO JARDUERETAN 	<p>Esta adaptación ha afectado principalmente a dos tipos de actividades:</p> <ul style="list-style-type: none"> -ACTIVIDADES DE FORMACIÓN -ACTIVIDADES DE EVALUACIÓN



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FORMAZIO JARDUERAK

Actividades formativas

ACTIVIDADES DE FORMACIÓN

ASPECTOS DEL PROGRAMA (Contenidos y/o resultados de aprendizaje)	ACTIVIDADES PREVISTAS	ACTIVIDADES ADAPTADAS A LA SITUACIÓN
<p>Monta, ajusta y pone a punto sistemas mecatrónicos, interpretando planos, esquemas y procedimientos de montaje y desmontaje.</p>	<p>Desarrollo, redacción y presentación de memorias, informes, material audiovisual, etc. relativas a proyectos/POPBLs, realizados individualmente o en equipos</p> <p>Estudio y trabajo individual, pruebas, exámenes y/o puntos de control</p> <p>Presentación del profesor/a en el aula, en clases participativas, de conceptos y procedimientos asociados a las materias</p> <p>Realización de prácticas en talleres y/o laboratorios, individualmente o en equipos</p>	<p>Desarrollo, redacción y presentación de memorias, informes, material audiovisual, etc. relativas a proyectos/POPBLs, realizados individualmente o en equipos</p> <p>Estudio y trabajo individual, pruebas, exámenes y/o puntos de control</p> <p>Presentación del profesor/a en el aula, en clases participativas, de conceptos y procedimientos asociados a las materias</p> <p>Realización de prácticas en talleres y/o laboratorios, individualmente o en equipos</p> <p>Realización de ejercicios individualmente o en grupo</p>

NOTA: en los casos en los que no ha habido adaptaciones, la tabla estará vacía.



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EBALUAZIO JARDUERAK

Actividades de evaluación

ACTIVIDADES DE EVALUACIÓN

ASPECTOS DEL PROGRAMA (Resultados de aprendizaje)	ACTIVIDADES PREVISTAS	PESO PREVISTO (En relación a la nota final)	ACTIVIDADES ADAPTADAS A LA SITUACIÓN	NUEVO PESO ESTABLECIDO (En relación a la nota final)
Monta, ajusta y pone a punto sistemas mecatrónicos, interpretando planos, esquemas y procedimientos de montaje y desmontaje.	Pruebas escritas y orales individuales para la evaluación de competencias técnicas de la materia	25%	Pruebas escritas y orales individuales para la evaluación de competencias técnicas de la materia	45%
	Informes de realización de ejercicios, estudio de casos, prácticas de ordenador, prácticas de simulación y prácticas de laboratorio	55%	Informes de realización de ejercicios, estudio de casos, prácticas de ordenador, prácticas de simulación y prácticas de laboratorio	35%
	Capacidad técnica, implicación en el proyecto/PBL, trabajo realizado, resultados obtenidos, documentación entregada, presentación y defensa técnica	20%	Capacidad técnica, implicación en el proyecto/PBL, trabajo realizado, resultados obtenidos, documentación entregada, presentación y defensa técnica	20%

NOTA: en los casos en los que no ha habido adaptaciones, la tabla estará vacía.



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**Eskerrik asko
Muchas gracias
Thank you**

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