

[GJJ104] MECHANICAL ELEMENTS

GENERAL INFORMATION

Studies	DEGREE IN MECHATRONICS ENGINEERING	Subject	?
Semester	1	Course	2
Character	OPTIONAL	Mention / Field of specialisation	
Plan	2020	Modality	Face-to-face
Credits	3	Hours/week	2.5
		Language	CASTELLANO/EUSKARA
		Total hours	45 class hours + 30 non-class hours = 75 total hours

PROFESSORS

ULACIA GARMENDIA, IBAI

REQUIRED PREVIOUS KNOWLEDGE

Subjects	Knowledge
GRAPHIC EXPRESION	(No previous knowledge required)

SKILLS

VERIFICA SKILLS

SPECIFIC

GJCE28 - Basic knowledge of machine elements

GENERAL

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

GJCG05 - Developing and designing products, equipment and mechatronic systems while complying with the technical, economic, quality and safety requirements established in the specifications and required by current legislation

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;

BASIC

G_CB5 - To have developed learning abilities required to embark on subsequent studies with a high level of autonomy.

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

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

CH

2 h.

NCH

0 h.

TH

2 h.

EVALUATION SYSTEM

Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems

W

100%

MAKE-UP MECHANISMS

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

Comments: With the project of the second semester

CH - Class hours: 2 h.

NCH - Non-class hours: 0 h.

TH - Total hours: 2 h.

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

LEARNING ACTIVITIES

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

CH

1 h.

NCH

1 h.

TH

2 h.

EVALUATION SYSTEM

Reports on the completion of exercises, case studies,

W

100%

MAKE-UP MECHANISMS

Technical skills, involvement in the project, finished work, obtained

computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems

results, handed documentation, presentation and technical defence

Comments: With the project of the second semester

CH - Class hours: 1 h.

NCH - Non-class hours: 1 h.

TH - Total hours: 2 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

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

CH

2 h.

NCH

1 h.

TH

3 h.

EVALUATION SYSTEM

Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems

W

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

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

CH

1 h.

NCH

2 h.

TH

3 h.

EVALUATION SYSTEM

Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems

W

100%

MAKE-UP MECHANISMS

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

Comments: With the oral presentation of the project of the second semester

CH - Class hours: 1 h.

NCH - Non-class hours: 2 h.

TH - Total hours: 3 h.

RGJ232 They know mechanical machine parts and their functions, identifying their selection parameters.

LEARNING ACTIVITIES

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

CH

5 h.

NCH

3 h.

TH

8 h.

Personal study and flexible development of concepts and subjects using active dynamics, to foster more meaningful learning

6 h.

5 h.

11 h.

Presentation by the teacher in the classroom, in participatory classes, of concepts and

10 h.

6 h.

16 h.

procedures associated with the subjects

Practical work in workshops and/or laboratories, individually and/or in teams 3 h. 2 h. 5 h.

EVALUATION SYSTEM

	<i>W</i>
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	35%
Individual written and/or oral tests or individual coding/programming tests	65%

MAKE-UP MECHANISMS

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

CH - Class hours: 24 h.
NCH - Non-class hours: 16 h.
TH - Total hours: 40 h.

RGJ233 They select mechanical machine parts from commercial catalogues, assessing their operating conditions.

LEARNING ACTIVITIES

	<i>CH</i>	<i>NCH</i>	<i>TH</i>
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	3 h.	2 h.	5 h.
Personal study and flexible development of concepts and subjects using active dynamics, to foster more meaningful learning	4 h.	3 h.	7 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	4 h.	2 h.	6 h.
Carrying out exercises and solving problems individually and/or in teams	4 h.	3 h.	7 h.

EVALUATION SYSTEM

	<i>W</i>
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	35%
Individual written and/or oral tests or individual coding/programming tests	65%

MAKE-UP MECHANISMS

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

CH - Class hours: 15 h.
NCH - Non-class hours: 10 h.
TH - Total hours: 25 h.

CONTENTS

1. CONNECTING ELEMENTS AND FITTINGS
2. ROTARY MOVEMENT GUIDING ELEMENTS
 - Friction guiding elements
 - Rolling guiding elements
3. LINEAR MOVEMENT GUIDING ELEMENTS
 - Friction guiding elements
 - Rolling guiding elements
4. SEALING ELEMENTS
 - Static sealing
 - Dynamic sealing

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources

Topic related web quires
 Labs
 Presentations by external Lecturers
 Slides of the subject

Bibliography

http://katalogoa.mondragon.edu/janium-bin/janium_login_opac_re_in k.pl?grupo=MECATRONICA21&ejecuta=25&_ST

Moodle Platform