

[GJI303] MODELLING AND DIMENSIONING MECHANICAL TRANSMISSIONS

GENERAL INFORMATION

Studies	DEGREE IN MECHATRONICS ENGINEERING	Subject	?
Semester	1	Course	3
Character	COMPULSORY	Mention / Field of specialisation	
Plan	2025	Modality	Face-to-face
Credits	3	Language	EUSKARA/CASTELLANO/ENGLISH
		Total hours	45 class hours + 30 non-class hours = 75 total hours

PROFESSORS

ARANA OSTOLAZA, AITOR
ELGUEZABAL LAZCANO, JON

REQUIRED PREVIOUS KNOWLEDGE

Subjects	Knowledge
GRAPHIC EXPRESSION	(No previous knowledge required)
MECHANICAL SYSTEMS	
PHYSICS	

LEARNING RESULTS

LEARNING RESULTS	KC	SK	AB	ECTS
GJR313 - Know and apply the principles of machine theory and transmission mechanisms and their applications.			x	2,52
G-TR1 - To develop interdisciplinary projects specific to their specialty and of gradual complexity, - 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		x		0,24
G-TR2 - To express information, ideas and the arguments that support them in an orderly, clear and coherent manner, orally and in writing, based on quality information, self-made or obtained from different sources, using inclusive and non-discriminatory language		x		0,24
Total:				3

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

SECONDARY LEARNING RESULTS

1RGJ394 (1 sem) Give an oral presentation of the project, justifying the proposed solutions with detailed and precise arguments, and using language that is correct, inclusive, and non-discriminatory.

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.	1 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 mechanisms)
Comments: With the oral presentation of the project of the second semester		

CH - Class hours: 2 h.
NCH - Non-class hours: 1 h.
TH - Total hours: 3 h.

RGJ3306 They know, selects and sizes transmission elements based on given specifications

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	2,75 h.	2 h.	4,75 h.
Carrying out/resolving projects/challenges/cases, etc. to provide solutions to problems in	2 h.	4 h.	6 h.

interdisciplinary contexts, real and/or simulated, individually and/or in teams

Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects

7,5 h.

1,25 h.

8,75 h.

Carrying out exercises and solving problems individually and/or in teams

6,75 h.

3,75 h.

10,5 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

30%

Individual written and/or oral tests or individual coding/programming tests

Individual written and/or oral tests or individual coding/programming tests

70%

CH - Class hours: 19 h.

NCH - Non-class hours: 11 h.

TH - Total hours: 30 h.

1RGJ391 (1 sem) Coordinate the work team, encouraging cohesion and a positive atmosphere to achieve the integration of all individuals and their contribution to achieving appropriate performance, both individually and as a group, for the development of the p

LEARNING ACTIVITIES

CH

NCH

TH

Carrying out/resolving projects/challenges/cases, etc. to provide solutions to problems in interdisciplinary contexts, real and/or simulated, individually and/or in teams

1 h.

1 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)

Comments: With the project of the second semester

CH - Class hours: 1 h.

NCH - Non-class hours: 1 h.

TH - Total hours: 2 h.

RGJ3305 Understand, model, and calculate kinematic chains for the dimensioning of transmission elements in kinematic chains.

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.

4 h.

Carrying out/resolving projects/challenges/cases, etc. to provide solutions to problems in interdisciplinary contexts, real and/or simulated, individually and/or in teams

2 h.

4 h.

6 h.

Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects

7,5 h.

1,75 h.

9,25 h.

Carrying out exercises and solving problems individually and/or in teams

7,5 h.

6,25 h.

13,75 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

30%

Individual written and/or oral tests or individual coding/programming tests

Individual written and/or oral tests or individual coding/programming tests

70%

CH - Class hours: 19 h.

NCH - Non-class hours: 14 h.

TH - Total hours: 33 h.

1RGJ393 (1 sem) Prepare the project report, providing detailed arguments and using language that is correct, inclusive, and non-discriminatory.

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

(No mechanisms)

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.

1RGJ392 (1 sem) Identify and accurately discuss the SDGs that the project addresses, suggesting possible actions for improvement.

LEARNING ACTIVITIES

Carrying out/resolving projects/challenges/cases, etc. to provide solutions to problems in interdisciplinary contexts, real and/or simulated, individually and/or in teams

CH

1 h.

NCH

1 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

(No mechanisms)

CH - Class hours: 1 h.

NCH - Non-class hours: 1 h.

TH - Total hours: 2 h.

1RGJ390 (1 sem) Define and manage the objectives and planning of a project that allows you to acquire and/or reinforce your knowledge of technologies—sometimes reaching the cutting edge of knowledge—and define an effective self-learning strategy.

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

W

100%

MAKE-UP MECHANISMS

(No mechanisms)

Comments: With the project of the second semester

CH - Class hours: 1 h.

NCH - Non-class hours: 1 h.

TH - Total hours: 2 h.

CONTENTS

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources

Topic related web quires
Moodle Platform
Class presentations
Slides of the subject
Computer practical training
Specific Master Software

Bibliography

Steven R. Schmid, Bernard J. Hamrock, Bo O. Jacobson,
"Fundamentals of Machine Elements"
Peter R.N. Childs, "Mechanical design engineering Handbook"