Course guide
295401 - DIN - Dynamics

Last modified: 02/03/2026

Unit in charge: Barcelona East School of Engineering
Teaching unit: 737 - RMEE - Department of Strength of Materials and Structural Engineering.

Degree: BACHELOR'S DEGREE IN MECHANICAL ENGINEERING (Syllabus 2009). (Compulsory subject).

Academic year: 2025 **ECTS Credits:** 6.0 **Languages:** Spanish

LECTURER

Coordinating lecturer: DAVID SÁNCHEZ MOLINA

Others:

Primer quadrimestre:
JAVIER ALONSO CARRASCO - Grup: T11, Grup: T12
INOCENCIO CASTAÑAR PEREZ - Grup: M11, Grup: M12
DAVID SÁNCHEZ MOLINA - Grup: M13, Grup: M14, Grup: T11, Grup: T12, Grup: T13
GIL SERRANCOLÍ MASFERRER - Grup: M11, Grup: M12, Grup: M13, Grup: M14

Segon quadrimestre:
JAVIER ALONSO CARRASCO - Grup: T11, Grup: T12
KEVIN IVAN BARRERA LLANGA - Grup: M15, Grup: M16
INOCENCIO CASTAÑAR PEREZ - Grup: M13, Grup: M14
DAVID SÁNCHEZ MOLINA - Grup: M11, Grup: M12, Grup: T11, Grup: T12, Grup: T13, Grup: T14
MATEO SÁNCHEZ RODRÍGUEZ - Grup: T11, Grup: T12
GIL SERRANCOLÍ MASFERRER - Grup: M11, Grup: M12, Grup: M13, Grup: M14, Grup: M15, Grup: M16

PRIOR SKILLS

Prerequisite Knowledge: Applied vector mechanics in statics, advanced vector algebra, trigonometry, definite integrals, centers of gravity, and moments of inertia.
Prerequisite Skills: Basic proficiency in teamwork (Level I cross-disciplinary competence).

REQUIREMENTS

SISTEMES MECÀNICS - Prerequisit

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
CEMEC-20. Calculate the characteristics of, design and test machines.

Transversal:
05 TEQ N1. TEAMWORK - Level 1. Working in a team and making positive contributions once the aims and group and individual responsibilities have been defined. Reaching joint decisions on the strategy to be followed.
07 AAT N1. SELF-DIRECTED LEARNING - Level 1. Completing set tasks within established deadlines. Working with recommended information sources according to the guidelines set by lecturers.
04 COE N1. EFFICIENT ORAL AND WRITTEN COMMUNICATION - Level 1. Planning oral communication, answering questions properly and writing straightforward texts that are spelt correctly and are grammatically coherent.
03 TLG. THIRD LANGUAGE. Learning a third language, preferably English, to a degree of oral and written fluency that fits in with the future needs of the graduates of each course.

TEACHING METHODOLOGY

MD1: Participatory lecture-based class covering both theoretical and practical content.
MD3: Practical class focused on solving case studies and/or exercises related to the course content, with active student participation.
MD4: Laboratory practice sessions.
MD6: Reading of instructional materials, texts, and articles related to the course content.
MD8: Group work.

LEARNING OBJECTIVES OF THE SUBJECT

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STUDY LOAD

Type	Hours	Percentage
Hours small group	15,0	10.00
Self study	90,0	60.00
Hours large group	45,0	30.00

Total learning time: 150 h

CONTENTS

Dynamcis

Description:
content english

Specific objectives:
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Related activities:
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Related competencies :
07 AAT N1. SELF-DIRECTED LEARNING - Level 1. Completing set tasks within established deadlines. Working with recommended information sources according to the guidelines set by lecturers.
04 COE N1. EFFICIENT ORAL AND WRITTEN COMMUNICATION - Level 1. Planning oral communication, answering questions properly and writing straightforward texts that are spelt correctly and are grammatically coherent.

Full-or-part-time: 153h
Theory classes: 30h
Practical classes: 15h
Guided activities: 15h
Self study : 93h

GRADING SYSTEM

1. Submitted Assignment – Weight: 20%
2. Laboratory/Practical Sessions – Weight: 10%
3. Midterm Examination – Weight: 25%
4. Final Examination – Weight: 45%

EXAMINATION RULES.

Individual examination with a questionnaire. The use of calculators capable of storing PDF files or mobile phones is not permitted.

BIBLIOGRAPHY

Basic:

- Beer, Ferdinand Pierre ... [et al.]. Mecánica vectorial para ingenieros [on line]. 10ª ed. México [etc.]: McGraw-Hill, cop. 2013 [Consultation: 27/04/2020]. Available on: http://www.ingebook.com/ib/NPcd/IB_BooksVis?cod_primaria=1000187&codigo_libro=4260. ISBN 9781456218317.
- Bedford, A; Fowler, Wallace. Mecánica para ingeniería [on line]. 5a ed. México: Pearson Educación, cop. 2008 [Consultation: 29/04/2020]. Available on: http://www.ingebook.com/ib/NPcd/IB_BooksVis?cod_primaria=1000187&codigo_libro=1279. ISBN 9786074428759.

RESOURCES

Other resources:

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