

Course guide

340050 - TEMA - Machine Theory

Last modified: 19/05/2026

Unit in charge: Vilanova i la Geltrú School of Engineering
Teaching unit: 712 - EM - Department of Mechanical Engineering.

Degree: BACHELOR'S DEGREE IN ELECTRICAL ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR'S DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR'S DEGREE IN MECHANICAL ENGINEERING (Syllabus 2009). (Compulsory subject).

Academic year: 2026 **ECTS Credits:** 6.0 **Languages:** Catalan, Spanish

LECTURER

Coordinating lecturer: JUAN SOLE ROVIRA

Others: Primer quadrimestre:
JUAN SOLE ROVIRA - M5011, M5012, M5021, M5111, M5112

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
3. CE13. Knowledge of theatrical basics of machines and mechanisms

Transversal:
2. SELF-DIRECTED LEARNING - Level 3. Applying the knowledge gained in completing a task according to its relevance and importance. Deciding how to carry out a task, the amount of time to be devoted to it and the most suitable information sources.

TEACHING METHODOLOGY

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LEARNING OBJECTIVES OF THE SUBJECT

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STUDY LOAD

Type	Hours	Percentage
Hours large group	52,5	35.00
Hours small group	7,5	5.00
Self study	90,0	60.00

Total learning time: 150 h



CONTENTS

(ENG) 1 - Cinemàtica de mecanismes

Description:

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Full-or-part-time: 62h 07m

Theory classes: 18h 30m

Laboratory classes: 2h 30m

Guided activities: 41h 07m

(ENG) 2 - Dinàmica de mecanismes

Description:

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Full-or-part-time: 24h 18m

Theory classes: 10h

Laboratory classes: 2h

Guided activities: 12h 18m

(ENG) 3 - Dinàmica de mecanismes

Description:

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Full-or-part-time: 63h 35m

Theory classes: 24h

Laboratory classes: 3h

Guided activities: 36h 35m

ACTIVITIES

A1. EVALUATION OF THE LEARNING PROCESS

Description:

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Full-or-part-time: 27h 55m

Guided activities: 27h 55m

name english

Full-or-part-time: 7h 30m

Laboratory classes: 7h 30m

A3. EVALUATION FOR ACCREDITATION

Full-or-part-time: 8h

Theory classes: 8h

GRADING SYSTEM

The training activities of knowledge acquisition and related to the control of the learning process of the student will be evaluated with the support of the platform SoRAP and will assume 6% of the final grade of the subject. The assessment evaluation activities will be solved in two evaluation acts that will be planned by the School within the periods of partial evaluation and final evaluation, respectively. These accrediting evaluation activities will take the form of written exercises, their results will correspond to 94% of the final grade of the subject and will be reevaluable (during the reevaluation period) according to what is specified in the academic regulations of the Degree studies.

BIBLIOGRAPHY

Basic:

- Ramón Moliner, Pedro. Vibraciones. Barcelona: el autor, 1980. ISBN 8430025987.
- Cardona i Foix, Salvador. Teoria de màquines [Recurs electrònic] [on line]. 2a ed. Barcelona: Edicions UPC, 2008 [Consultation: 02/05/2022]. Available on: <https://upcommons.upc.edu/handle/2099.3/36645>. ISBN 9788498803808.
- Ramon Moliner, Pedro. Dinámica de las máquinas. 1a ed. Barcelona: CPDA. ETSEIB, 1978.
- Cardona i Foix, Salvador; Clos Costa, Daniel. Teoria de màquines [Recurs electrònic] [on line]. 2a ed. Barcelona: Edicions UPC, 2008 [Consultation: 02/05/2022]. Available on: <https://upcommons.upc.edu/handle/2099.3/36644>. ISBN 9788498803792.

Complementary:

- Agulló i Batlle, Joaquim. Mecànica de la partícula i del sòlid rígid. 3a ed. Barcelona: OK Punt, 2002. ISBN 8492085061.
- Beer, Ferdinand Pierre. Mecánica vectorial para ingenieros. Vol. 2, Dinámica [on line]. 11a ed. México: McGraw-Hill Education, 2017 [Consultation: 06/04/2022]. Available on: https://www.ingebook.com/ib/NPcd/IB_BooksVis?cod_primaria=1000187&codigo_libro=4261. ISBN 9781456255268.
- Riley, William F.; Sturges, Leroy D. Ingeniería mecánica. Vol. 2, Dinámica. Barcelona [etc.]: Reverté, 2005. ISBN 8429142568.
- Khamashta, Munir; Álvarez, Lorenzo; Capdevila, Ramón. Problemas de cinemática y dinámica de máquinas. Barcelona: Edicions de la Universitat Politècnica de Catalunya, 1986. ISBN 8476530048.