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330121 - MSD - Mechanics of Deformable Solids

Coordinating unit: 330 - EPSEM - Manresa School of Engineering

Teaching unit: 750 - EMIT - Department of Mining, Industrial and ICT Engineering

Academic year: 2019

Degree: BACHELOR'S DEGREE IN MECHANICAL ENGINEERING (Syllabus 2016). (Teaching unit Compulsory)
BACHELOR'S DEGREE IN MECHANICAL ENGINEERING (Syllabus 2009). (Teaching unit Compulsory)

ECTS credits: 6 Teaching languages: Catalan

Teaching staff

Coordinator: JUAN JOSE RIVERA AMORES

Others: JORDI JOSEP TORRELLES RICO

Degree competences to which the subject contributes

Specific:

1. (ENG) Aprofundiment en el coneixement i utilització dels principis de la Resistència de Materials.

Transversal:

2. EFFICIENT ORAL AND WRITTEN COMMUNICATION - Level 3. Communicating clearly and efficiently in oral and written presentations. Adapting to audiences and communication aims by using suitable strategies and means.
3. TEAMWORK - Level 3. Managing and making work groups effective. Resolving possible conflicts, valuing working with others, assessing the effectiveness of a team and presenting the final results.
4. EFFECTIVE USE OF INFORMATI0N RESOURCES - Level 3. Planning and using the information necessary for an academic assignment (a final thesis, for example) based on a critical appraisal of the information resources used.
5. 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.

Learning objectives of the subject

Study load

Total learning time: 150h	Hours large group:	45h	30.00%
	Hours medium group:	0h	0.00%
	Hours small group:	15h	10.00%
	Guided activities:	0h	0.00%
	Self study:	90h	60.00%

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Content

(ENG) Títol del contingut 1: Eq. bàsiques de l'elasticitat.	Learning time: 23h 10m Theory classes: 7h 15m Laboratory classes: 2h 25m Self study : 13h 30m
(ENG) Títol del contingut 2: Esforços combinats i cisallament en perfils prims.	Learning time: 50h Theory classes: 15h Laboratory classes: 5h Self study : 30h
(ENG) Títol del contingut 3: Equacions energètiques i equacions de Navier-Brese.	Learning time: 50h Theory classes: 15h Laboratory classes: 5h Self study : 30h
(ENG) Títol del contingut 4: Pandeig.	Learning time: 13h 10m Theory classes: 4h 15m Laboratory classes: 1h 25m Self study : 7h 30m
(ENG) Títol del contingut 5: Anàlisi de plaques.	Learning time: 15h Theory classes: 4h 30m Practical classes: 1h 30m Self study : 9h

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Planning of activities

(ENG) TÍTOL DE L'ACTIVITAT 1: PRÀCTICA DE LABORATORI: ELASTICITAT (CONTINGUT 1).	Hours: 7h 36m Laboratory classes: 2h Self study: 5h 36m
(ENG) TÍTOL DE L'ACTIVITAT 2: PRÀCTICA DE LABORATORI: ESFORÇOS COMBINATS I (CONTINGUT 2).	Hours: 11h 24m Laboratory classes: 3h Self study: 8h 24m
(ENG) TÍTOL DE L'ACTIVITAT 3: PRÀCTICA DE LABORATORI: ESFORÇOS COMBINATS II (CONTINGUT 2).	Hours: 11h 24m Laboratory classes: 3h Self study: 8h 24m
(ENG) TÍTOL DE L'ACTIVITAT 4: PROVA INDIVIDUAL D'AVALUACIÓ CONTÍNUA: EQ. BÀSIQUES DE L'ELASTICITAT. ESFORÇOS COMBINATS I CISALLAMENT EN PERFILS PRIMS. (CONTINGUTS 1-2).	Hours: 7h Theory classes: 2h Self study: 5h
(ENG) TÍTOL DE L'ACTIVITAT 5: PROVA INDIVIDUAL D'AVALUACIÓ CONTÍNUA: EQUACIONS ENERGÈTIQUES I EQUACIONS DE NAVIER_BRESE. PANDEIG. ANÀLISI DE PLAQUES (CONTINGUTS: 3,4,5).	Hours: 7h Theory classes: 2h Self study: 5h
(ENG) TÍTOL DE L'ACTIVITAT 6: PROVA FINAL: (CONTINGUTS: 1-5).	Hours: 13h Theory classes: 3h Self study: 10h

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Bibliography

Basic:

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Courbon, Jean. Tratado de resistencia de materiales. 2ª ed. Madrid: Aguilar, 1968.

Complementary:

Timoshenko, Stephen. Resistencia de materiales. Madrid: Espasa-Calpe, 1989. ISBN 8423963152.

Argüelles Álvarez, R.. Cálculo de estructuras. Madrid: Escuela Técnica Superior de Ingenieros de Montes, 1981-1986. ISBN 8460024105.

Ortiz Berrocal, Luis. Resistencia de materiales. 3ª ed. Madrid: McGraw Hill, 2007. ISBN 9788448156336.