

330125 - EF - Fluid Dynamics Engineering

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: JORDI VIVES COSTA - JOSE JUAN DE FELIPE BLANCH

Degree competences to which the subject contributes

Specific:

1. (ENG) Comprensió dels fonaments de la dinàmica dels fluids. Comprensió i domini dels conceptes fonamentals de les màquines hidràuliques.

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.
3. 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.

Learning objectives of the subject

Study load

Total learning time: 150h	Hours large group:	30h	20.00%
	Hours medium group:	30h	20.00%
	Hours small group:	0h	0.00%
	Guided activities:	0h	0.00%
	Self study:	90h	60.00%

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Content

<p>(ENG) Títol del contingut 1: Els fluxos externs: principis d'aerodinàmica i hidrodinàmica</p>	<p>Learning time: 30h Theory classes: 6h Practical classes: 6h Self study : 18h</p>
<p>(ENG) Títol del contingut 2: Els fluxos interns: Dimensionat de sistemes de canonades</p>	<p>Learning time: 30h Theory classes: 6h Practical classes: 6h Self study : 18h</p>
<p>(ENG) Títol del contingut 3: Els fluxos amb superfície lliure: canals</p>	<p>Learning time: 30h Theory classes: 6h Practical classes: 6h Self study : 18h</p>
<p>(ENG) Títol del contingut 4: Màquines hidràuliques: Bombes i turbines hidràuliques</p>	<p>Learning time: 60h Theory classes: 12h Practical classes: 12h Self study : 36h</p>

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Planning of activities

(ENG) TÍTOL DE L'ACTIVITAT 1: EXERCICIS RELACIONATS AMB LA TEORIA (ACTIVITATS: 2, 5, 7)	Hours: 72h Practical classes: 30h Self study: 42h
(ENG) TÍTOL DE L'ACTIVITAT 2: PROVA D'AVUACIÓ CONTINUA (ACTIVITATS: 1, 3, 6 I 8)	Hours: 5h 30m Practical classes: 2h Practical classes: 3h 30m
(ENG) TÍTOL DE L'ACTIVITAT 3: PROVA ESPECÍFICA PROBLEMES (ACTIVITAT: 4)	Hours: 5h Practical classes: 2h Self study: 3h
(ENG) TÍTOL DE L'ACTIVITAT 4: PROVA D'AVUACIÓ FINAL (ACTIVITAT: 9)	Hours: 12h Practical classes: 2h Self study: 10h

Bibliography

Basic:

Gerhart, P.M. ; Gross, R. J. ; Hochstein, J. I. Fundamentos de mecánica de fluidos. 2a ed. Argentina: Adisson Wesley Iberoamericana, 1995. ISBN 0201601052.

Çengel, Yunus A.; Cimbala, John M. Mecánica de fluidos: fundamentos y aplicaciones [on line]. 4a ed. México, DF: McGraw-Hill, 2018 Available on: <https://discovery.upc.edu/iii/encore/record/C__Rb1510226?lang=cat>. ISBN 9781456260941.

Complementary:

White, F.M. Mecánica de fluidos [on line]. 6ª. Madrid: McGraw-Hill, 2008 [Consultation: 18/06/2019]. Available on: <https://discovery.upc.edu/iii/encore/record/C__Rb1510228?lang=cat>. ISBN 8448140761.

Agüera, J. Mecánica de fluidos incompresibles y turbomáquinas hidráulicas. 5a ed. Madrid: Ciencia 3, 2002. ISBN 8495391015.

Others resources: