

## 330411 - MTMF - Thermodynamics and Fluid Mechanics

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 MINING ENGINEERING (Syllabus 2016). (Teaching unit Compulsory)  
 ECTS credits: 9 Teaching languages: Catalan, Spanish, English

### Teaching staff

Coordinator: Vives Costa, Jordi  
 Others: Felipe Blanch, Jose Juan De

### Degree competences to which the subject contributes

#### Specific:

1. (ENG) Coneixement dels principis de mecànica de fluids i hidràulica. Transferència de calor i matèria i màquines tèrmiques.

#### Transversal:

2. EFFECTIVE USE OF INFORMATION RESOURCES - Level 1. Identifying information needs. Using collections, premises and services that are available for designing and executing simple searches that are suited to the topic.
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.
4. 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.
5. 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.

### Learning objectives of the subject

### Study load

Total learning time: 225h	Hours large group:	0h	0.00%
	Hours medium group:	90h	40.00%
	Hours small group:	0h	0.00%
	Guided activities:	0h	0.00%
	Self study:	135h	60.00%

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### Content

title english	Learning time: 25h Theory classes: 10h Self study : 15h
Description: content english	
title english	Learning time: 40h Theory classes: 12h Laboratory classes: 4h Self study : 24h
Description: content english	
title english	Learning time: 20h Theory classes: 8h Self study : 12h
Description: content english	
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## 330411 - MTMF - Thermodynamics and Fluid Mechanics

title english	Learning time: 25h Theory classes: 8h Laboratory classes: 2h Self study : 15h
Description: content english	

title english	Learning time: 15h Theory classes: 6h Self study : 9h
Description: content english	

### Planning of activities

name english	Hours: 20h Theory classes: 8h Self study: 12h
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name english	Hours: 20h Laboratory classes: 4h Self study: 16h
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name english	Hours: 10h Theory classes: 2h Self study: 8h
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name english	Hours: 10h Theory classes: 2h Self study: 8h
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## 330411 - MTMF - Thermodynamics and Fluid Mechanics

### Bibliography

#### Basic:

Gerhart, Philip M; Gross, Richard J; Hochstein, John I. Fundamentos de mecánica de fluidos. 2a ed. Argentina: Addison-Wesley Iberoamericana, cop. 1995. ISBN 0201601052.

Çengel, Yunus A; Cimbala, John M. Mecánica de fluidos: fundamentos y aplicaciones [on line]. 4a ed. México, D.F.: McGraw-Hill, 2018 Available on: <[https://discovery.upc.edu/iii/encore/record/C\\_\\_Rb1510226?lang=cat](https://discovery.upc.edu/iii/encore/record/C__Rb1510226?lang=cat)>. ISBN 9781456260941.

Moran, Michael J; Shapiro, Howard N. Fundamentos de termodinámica técnica. 2ª ed. Barcelona: Reverté, 2004. ISBN 8429143130.

Pita, Edward G. Acondicionamiento de aire : principios y sistemas : un enfoque energético. México D.F.: Compañía editorial Continental, 1994. ISBN 9682612470.

Agüera Soriano, José. Termodinámica lógica y motores térmicos. 6ª ed. mejorada. Madrid: Ciencia 3, DL 1999. ISBN 8486204984.

Çengel, Yunus A., Cimbala, John M. Mecánica de fluidos: fundamentos y aplicaciones [on line]. 2a. México: McGraw-Hill/Interamericana, 2012 [Consultation: 14/09/2018]. Available on:  
<[https://renoir.upc.edu/login/tipus.php?url=http%3A%2F%2Fwww.ingebok.com%2Fib%2FNPcd%2FIB\\_BooksVis%3Fcod\\_primaria%3D1000187%26codigo\\_libro%3D5644](https://renoir.upc.edu/login/tipus.php?url=http%3A%2F%2Fwww.ingebok.com%2Fib%2FNPcd%2FIB_BooksVis%3Fcod_primaria%3D1000187%26codigo_libro%3D5644)>. ISBN 9781456239114.

#### Complementary:

White, Frank M. Mecánica de fluidos [on line]. 6ª ed. Madrid: McGraw-Hill, 2008 [Consultation: 18/06/2019]. Available on: <[https://discovery.upc.edu/iii/encore/record/C\\_\\_Rb1510228?lang=cat](https://discovery.upc.edu/iii/encore/record/C__Rb1510228?lang=cat)>. ISBN 9788448166038.

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

Carreras Planells, Ramón; Comas Amengual, Ángel; Calvo Larruy, Antonio. Motores de combustión interna : fundamentos. Barcelona: Edicions UPC, 1993. ISBN 8476533543.

Mills, Anthony F; Régules Ruiz-Funes, Sergio. Transferencia de calor. México DF [etc.]: Irwin, 1995. ISBN 8480861940.

#### Others resources: