

## 220260 - Power Transmission Systems

Coordinating unit:	205 - ESEIAAT - Terrassa School of Industrial, Aerospace and Audiovisual Engineering
Teaching unit:	729 - MF - Department of Fluid Mechanics 712 - EM - Department of Mechanical Engineering 724 - MMT - Department of Heat Engines
Academic year:	2019
Degree:	MASTER'S DEGREE IN INDUSTRIAL ENGINEERING (Syllabus 2013). (Teaching unit Optional)
ECTS credits:	10
Teaching languages:	Catalan, Spanish

### Teaching staff

Coordinator: Gamez Montero, Pedro Javier  
Freire Venegas, Francisco Javier  
Comas Amengual, Angel  
Codina Macia, Esteve

Others: Comas Cespedes, Esteve  
Torrent Celma, Miquel

### Degree competences to which the subject contributes

Specific:

3. Ability to learn and understand design tools like CAD / CAM / CAE, CFD numerical simulation and dynamic simulation for design and advanced computing facilities and fluid dynamic systems.
4. Ability to know the laws, regulations and directives in force whenever assessing the environmental implications, energy, social and ethical professional activity.
5. Ability to learn and understand the dynamic phenomena and its formulation for application in the development of each of the stages of conception, design and mechanical calculations.
6. Ability to learn and understand numerical simulation tools for the design, calculation and fabrication of components, systems and mechanical installations.

### Teaching methodology

Aquesta assignatura tindrà una part de teoria i una part de pràctiques.

Les classes de teoria podem incloure lliçons magistral, així com exemples i problemes.

Les classes pràctiques podem incloure visites a empreses, practiques de laboratori/taller, seminaris, presentació de treballs/projectes.

NOTA: per evitar interferències de les classes pràctiques amb altres assignatures, cal dedicar un matí o una tarda sencera (6 hores) a aquesta assignatura.

Esta previst que les classes teòriques es divideixin en tres blocs de dues hores, de manera que cada dues hores es canviï el tema estudiat.

### Learning objectives of the subject



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### Study load

Total learning time: 250h	Hours large group:	60h	24.00%
	Hours small group:	30h	12.00%
	Self study:	160h	64.00%

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### Content

<p>.</p>	<p>Learning time: 83h Theory classes: 20h Laboratory classes: 10h Self study : 53h</p>
<p>Description: . Related activities: . Specific objectives: .</p>	
<p>Gears</p>	<p>Learning time: 83h Theory classes: 20h Laboratory classes: 10h Self study : 53h</p>
<p>Description: content english Related activities: activity english Specific objectives: objective english</p>	
<p>title english</p>	<p>Learning time: 84h Theory classes: 20h Laboratory classes: 10h Self study : 54h</p>
<p>Description: content english Related activities: activity english Specific objectives: objective english</p>	

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### Planning of activities

<p>.</p>	<p>Hours: 138h Theory classes: 54h Self study: 84h</p>
<p>Description: activity english</p> <p>Support materials: .</p> <p>Descriptions of the assignments due and their relation to the assessment: None</p> <p>Specific objectives: .</p>	
<p>.</p>	<p>Hours: 69h Laboratory classes: 27h Self study: 42h</p>
<p>Description: .</p> <p>Support materials: material english</p> <p>Descriptions of the assignments due and their relation to the assessment: .</p> <p>Specific objectives: .</p>	
<p>.</p>	<p>Hours: 8h Theory classes: 2h Self study: 6h</p>
<p>Description: .</p> <p>Support materials: .</p> <p>Descriptions of the assignments due and their relation to the assessment: .</p> <p>Specific objectives: .</p>	

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<p>.</p>	<p>Hours: 8h Theory classes: 2h Self study: 6h</p>
<p>Description: activity english</p> <p>Support materials: .</p> <p>Descriptions of the assignments due and their relation to the assessment: .</p> <p>Specific objectives: .</p>	
<p>.</p>	<p>Hours: 8h Theory classes: 2h Self study: 6h</p>
<p>Description: activity english</p> <p>Support materials: .</p> <p>Descriptions of the assignments due and their relation to the assessment: .</p> <p>Specific objectives: .</p>	
<p>.</p>	<p>Hours: 9h Laboratory classes: 3h Self study: 6h</p>
<p>Description: .</p> <p>Support materials: .</p> <p>Descriptions of the assignments due and their relation to the assessment: .</p> <p>Specific objectives: .</p>	
<p>.</p>	<p>Hours: 10h Self study: 10h</p>

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Description:

Support materials:

Descriptions of the assignments due and their relation to the assessment:

Specific objectives:  
objective english

### Qualification system

### Bibliography

Basic:

Stone, Richard. Motor vehicle fuel economy. London: MacMillan, 1989. ISBN 0333438205.

Heisler, Heinz. Vehicle and engine technology. London: Edward Arnold, 1985. ISBN 0713135425.

Gibert, Jaume. Ingeniería de los engranajes. Barcelona: l'autor, 2005. ISBN 8460954552.

Masià, J.; Esquerdo, T.; Colomina, J. Trens d'engranatges epicicloïdals. València: Universitat Politècnica de València, 2007. ISBN 9788483630501.

Riba Romeva, C. Mecanismes i màquines, vol. 2, Transmissions d'engranatges [on line]. 2<sup>a</sup> ed. Barcelona: Edicions UPC, 2002 [Consultation: 08/01/2016]. Available on: <<http://hdl.handle.net/2099.3/36254>>. ISBN 8483014467.

Manring, Noah D. Hydraulic control systems. Hoboken: John Wiley & Sons, cop. 2005. ISBN 9780471693116.

Akers, A.; Gassman, M.; Smith, R. Hydraulic power system analysis. Boca Raton: CRC Press, 2006. ISBN 9780824799564.

Ivantysyn, J.; Ivantysynova, M. Hydrostatic pumps and motors: principles, design, performance, modelling, analysis, control and testing. New Delhi: Tech Books International, 2003. ISBN 9788188305087.

Müller, Herbert W. Epicyclic drive trains: analysis, synthesis and applications. Detroit: Wayne State University Press, 1982. ISBN 9780814316634.

Heisler, Heinz. Advanced vehicle technology. London [etc.]: Edward Arnold, 1989. ISBN 071313660X.

Kröell, Imre [et al.]. Fundamentals of hydraulic power transmission. Amsterdam: Elsevier, 1988. ISBN 0444418725.

Others resources:

Hyperlink

Documentació a la web ATENEA

Resource