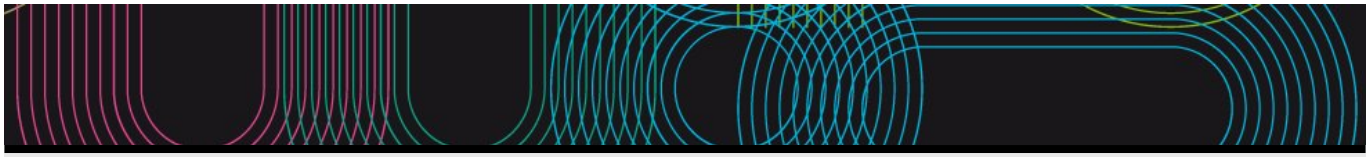

IDENTIFYING DATA				
Mechanical Engineering Design				
Subject	Mechanical Engineering Design			
Code	V04M141V01114			
Study programme	(*)Máster Universitario en Enxeñaría Industrial			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	3	Mandatory	1st	1st
Teaching language	English			
Department				
Coordinator	Casarejos Ruiz, Enrique			
Lecturers	Casarejos Ruiz, Enrique			
E-mail	e.casarejos@uvigo.es			
Web	http://moovi.uvigo.gal/			
General description	Standard and Numerical Calculation of Mechanical Elements			

Training and Learning Results	
Code	
C14	CTI3. Ability to design and test machines.
D9	ABET-i. A recognition of the need for, and an ability to engage in life-long learning.

Expected results from this subject	Training and Learning Results
- Know the most common components of the machines and his use.	C14
- Know calculate the elements more commonly used in machines.	D9
- Know the general appearances of the construction and calculation of machines.	

Contents	
Topic	
Introduction	- Study Cases & Applications - Previous & Linked Subjects
Transmission: - Shafts - Gears - Bearings	- Element Characterization - Application Details - Calculation and Selection
Transmission: - Belts & Chains - Lead screws - Couplings	- Element Characterization - Application Details - Theoretical Calculation and Selection
Joints: - Shaft-Hub. Tolerances - Bolts & Screws	- Element Characterization - Application Details - Theoretical Calculation and Selection
Integration of complex systems	- Gear-boxes - Analysis Cases: design, evaluation

Planning	Class hours	Hours outside the classroom	Total hours

Presentation	10	0	10
Problem solving	6	0	6
Case studies	8	0	8
Problem and/or exercise solving	0	6	6
Case studies	0	20	20
Project	0	23	23

*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

Methodologies

	Description
Presentation	Lectures about topics. Applications. Study Cases.
Problem solving	Discussion of exercises
Case studies	Discussion of practical cases

Personalized assistance

Methodologies	**Description**
Problem solving	Common discussions for the resolution of problems and/or exercises proposed.
Case studies	Common discussions to solve the doubts related to the proposed case.
Presentation	Common discussions to solve the doubts related to the developed project.
Tests	**Description**
Problem and/or exercise solving	Individual discussions for the resolution of problems and/or exercises proposed.
Case studies	Individual discussions to solve the doubts related to the proposed case.
Project	Individual discussions to solve the doubts related to the developed project.

Assessment

	Description	Qualification	Training and Learning Results	
Problem and/or exercise solving	Resolution of exercises and problems using the standards	25	C14	D9
Case studies	Analysis of a proposed case .	40	C14	D9
Project	Analysis of a realistic case .	35	C14	D9

Other comments on the Evaluation

The evaluation will be done according to the scores in working blocks: #calculation with standards (25%) #case-study (40%) #project (35%). Students must achieve at least 35% of the partial score of each block to pass the evaluation.

The continuous evaluation will be done considering both the regular exercises, the case-study and the project, to hand in. If any student gives up (officially) the continuous evaluation, the evaluation will be done with the exam and the case-study and the project. The distribution of the evaluation will be of 25% for the exam and 75% for the case-study and the project.

It is expected an adequate ethical behaviour of the student. In case of detecting unethical behaviour (copying, plagiarism, unauthorized use of electronic devices, etc.) shall be deemed that the student does not meet the requirements for passing the subject. In this case, the overall rating in the current academic year will be Fail (0.0).
The use of any electronic device for the assessment tests is not allowed unless explicitly authorized. The fact of introducing unauthorized electronic device in the examination room will be considered reason for not passing the subject in the current academic year and will hold overall rating (0.0).

Sources of information

Basic Bibliography

VVAA, **Shigley's mechanical engineering design**, McGraw-Hill,

Complementary Bibliography

Norton, R., **Diseño de Máquinas**, Pearson, 2000
Mott, R.L., **Diseño de elementos de máquinas**, Pearson, 2006
Ansys, **Ansys, documentation**,
VVAA, **SolidWorks documentation**,

Recommendations

Subjects that continue the syllabus