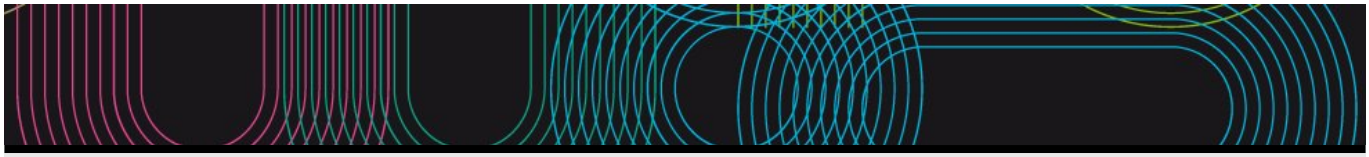

IDENTIFYING DATA				
Advanced Mechanical Engineering Design				
Subject	Advanced Mechanical Engineering Design			
Code	V04M141V01203			
Study programme	(*)Máster Universitario en Enxeñaría Industrial			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	3	Optional	1st	2nd
Teaching language	English			
Department				
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			

Skills	
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.

Learning outcomes	
Expected results from this subject	Training and Learning Results
- Know the components of the machines, his use and maintenance. - Know calculate the elements more commonly used in machines. - Know the general appearances of the construction and calculation of machines. - Capacity of analytical study of transmissions in machinery	C14 D9

Contents	
Topic	
Introduction	- Study Cases & Applications - Previous & Linked Subjects
Shafts, Gears and Bearings	- Element Characterization - Application Details - Theoretical Calculation and Selection
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	21	21
Case studies	0	30	30

*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 the topics. Applications. Study Cases.
Problem solving	Discussion of exercises
Case studies	Discussion of practical cases

Personalized assistance

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 works and projects proposed.

Assessment

	Description	Qualification	Training and Learning Results	
Problem and/or exercise solving	Resolution of exercises and problems	35	C14	D9
Case studies	Resolution of a realistic cases proposed.	65	C14	D9

Other comments on the Evaluation

The evaluation will be done according to the scores in two working blocks: # calculation with standards (35%) # case-study: project (65%). 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 and the case-studies to hand in. If any student gives up (officially) the continuous evaluation, the evaluation will be done with the exam and the case-studies handed in. The distribution of the evaluation will be of 35% for the exam and 65% for the case-studies.

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, **SoidWorks documentation**,

Recommendations

Subjects that continue the syllabus

Advanced Mechanical Engineering Design/V04M141V01203