Universida_{de}Vigo

Subject Guide 2023 / 2024

411111111					
IDENTIFYIN	G DATA				
	Engineering Design				
Subject	Mechanical				
Jubject	Engineering				
	Design				
Code	V04M141V01114				
Study	(*)Máster				
programme	Universitario en				
	Enxeñaría				
	Industrial				
Descriptors	ECTS Credits		Choose	Year	Quadmester
	3		Mandatory	1st	1st
Teaching	English				
language	J				
Department					
Coordinator	Casarejos Ruiz, Enrique				
Lecturers	Casarejos Ruiz, Enrique				
E-mail	e.casarejos@uvigo.es				
Web	http://moovi.uvigo.gal/				
General	Standard and Numerical	Calculation of Mechani	cal Flements		
description	Standard and Namencal	calculation of Mechani	ear Elements		
Code C14 CTI3	d Learning Results . Ability to design and tes -i. A recognition of the ne		o engage in life-long lea	arning.	
Code	. Ability to design and tes	eed for, and an ability to	engage in life-long lea	arning.	Training and Learning Results
Code C14 CTI3 D9 ABET Expected res Expected res - Know the m - Know calcul	. Ability to design and tes T-i. A recognition of the ne	eed for, and an ability to end for, and an ability to end for and an ability to for the machines and hommonly used in machi	is use. nes.	arning.	Training and Learning Results C14 D9
Code C14 CTI3 D9 ABET Expected res Expected res - Know the m - Know calcul	Ability to design and test. Fi. A recognition of the nest. Esults from this subject. Finally subject. Finally subject. Finally subject.	eed for, and an ability to end for, and an ability to end for and an ability to for the machines and hommonly used in machi	is use. nes.	arning.	Learning Results C14
Code C14 CTI3 D9 ABET Expected res Expected res - Know the m - Know calcul - Know the ge	Ability to design and test. Fi. A recognition of the nest. Esults from this subject. Finally subject. Finally subject. Finally subject.	eed for, and an ability to end for, and an ability to end for and an ability to for the machines and hommonly used in machi	is use. nes.	arning.	Learning Results C14
Code C14 CTI3 D9 ABET Expected res Expected res - Know the m - Know calcul - Know the ge	Ability to design and test. Fi. A recognition of the nest. Esults from this subject. Finally subject. Finally subject. Finally subject.	eed for, and an ability to e of the machines and h ommonly used in machi e construction and calcu	is use. nes. Ilation of machines.	arning.	Learning Results C14
Code C14 CTI3 D9 ABET Expected res Expected res - Know the m - Know calcul - Know the ge Contents Topic	Ability to design and test. Fi. A recognition of the nest. Esults from this subject. Finally subject. Finally subject. Finally subject.	eed for, and an ability to e of the machines and hommonly used in machine construction and calcu	is use. nes.	arning.	Learning Results C14
Code C14 CTI3 D9 ABET Expected res Expected res - Know the m - Know calcul - Know the ge Contents Topic Introduction	Ability to design and tes F-i. A recognition of the ne esults from this subject rults from this subject nost common components late the elements more coeneral appearances of the	eed for, and an ability to of the machines and hommonly used in machine construction and calculation - Study Cas - Previous &	is use. nes. Ilation of machines. es & Applications	arning.	Learning Results C14
Code C14 CTI3 D9 ABET Expected res - Know the m - Know calcul - Know the ge Contents Topic Introduction	Ability to design and tes F-i. A recognition of the ne esults from this subject rults from this subject nost common components late the elements more coeneral appearances of the	eed for, and an ability to of the machines and hommonly used in machi construction and calculated and calculated are constructed as a Previous & Flement C	is use. nes. nlation of machines. es & Applications Linked Subjects haracterization	arning.	Learning Results C14
Code C14 CTI3 D9 ABET Expected res Expected res - Know the m - Know calcul - Know the ge Contents Topic	Ability to design and tes F-i. A recognition of the ne esults from this subject rults from this subject nost common components late the elements more coeneral appearances of the	eed for, and an ability to of the machines and hommonly used in machine construction and calculated and calculated are set of the construction ar	is use. nes. nlation of machines. es & Applications Linked Subjects haracterization	arning.	Learning Results C14
Code C14 CTI3 D9 ABET Expected res - Know the m - Know calcul - Know the ge Contents Topic Introduction Transmission - Shafts	Ability to design and tes F-i. A recognition of the ne esults from this subject rults from this subject nost common components late the elements more coeneral appearances of the	eed for, and an ability to of the machines and hommonly used in machine construction and calculated and calculated are set of the construction ar	is use. nes. ilation of machines. es & Applications Linked Subjects haracterization n Details	arning.	Learning Results C14
Code C14 CTI3 D9 ABET Expected res Expected res - Know the m - Know calcul - Know the ge Contents Topic Introduction Transmission - Shafts - Gears	Ability to design and test. A recognition of the nest. Esults from this subject. Finally a subject. Fi	eed for, and an ability to s of the machines and hommonly used in machine construction and calculation - Study Cas - Previous & - Element C - Application - Calculation	is use. nes. ilation of machines. es & Applications Linked Subjects haracterization n Details	arning.	Learning Results C14
Code C14 CTI3 D9 ABET Expected res Expected res - Know the m - Know calcul - Know the ge Contents Topic Introduction Transmission - Shafts - Gears - Bearings	Ability to design and test a recognition of the nest common components late the elements more components appearances of the series of the series appearances of the series appearance of the series	eed for, and an ability to s of the machines and hommonly used in machi e construction and calcu - Study Cas - Previous & - Element C - Application - Calculation - Element C - Application	is use. nes. ilation of machines. es & Applications & Linked Subjects haracterization n Details n and Selection haracterization n Details		Learning Results C14
Code C14 CTI3 D9 ABET Expected res Expected res - Know the m - Know calcul - Know the ge Contents Topic Introduction Transmission - Shafts - Gears - Bearings Transmission	Ability to design and test a recognition of the nest common components late the elements more components appearances of the elements more components.	eed for, and an ability to s of the machines and hommonly used in machi e construction and calcu - Study Cas - Previous & - Element C - Application - Calculation - Element C - Application	is use. nes. ilation of machines. es & Applications a Linked Subjects haracterization n Details n and Selection haracterization		Learning Results C14
Code C14 CTI3 D9 ABET Expected res Expected res - Know the m - Know calcul - Know the ge Contents Topic Introduction Transmission - Shafts - Gears - Bearings Transmission - Belts & Cha	Ability to design and test a recognition of the nest common components late the elements more components appearances of the elements more components.	eed for, and an ability to s of the machines and hommonly used in machi e construction and calcu - Study Cas - Previous & - Element C - Application - Calculation - Element C - Application	is use. nes. ilation of machines. es & Applications & Linked Subjects haracterization n Details n and Selection haracterization n Details		Learning Results C14
Code C14 CTI3 D9 ABET Expected res Expected res - Know the m - Know calcul - Know the ge Contents Topic Introduction Transmission - Shafts - Gears - Bearings Transmission - Belts & Cha - Lead screws	Ability to design and test a recognition of the nest common components late the elements more components appearances of the elements more components.	eed for, and an ability to s of the machines and hommonly used in machine construction and calculation - Study Cas - Previous & - Element C - Application - Calculation - Element C - Application - Theoretica	is use. nes. ilation of machines. es & Applications & Linked Subjects haracterization n Details n and Selection haracterization n Details		Learning Results C14
Code C14 CTI3 D9 ABET Expected res Expected res - Know the m - Know calcul - Know the ge Contents Topic Introduction Transmission - Shafts - Gears - Bearings Transmission - Belts & Cha - Lead screws - Couplings	Ability to design and tes F-i. A recognition of the ne esults from this subject fulls from this subject fost common components late the elements more components eneral appearances of the final components final components	eed for, and an ability to of the machines and hommonly used in machine construction and calculation - Study Cas - Previous & - Element C - Application - Calculation - Theoretica - Element C - Application - Theoretica	is use. nes. nlation of machines. es & Applications c Linked Subjects haracterization n Details n and Selection haracterization n Details al Calculation and Select haracterization n Details	ction	Learning Results C14
Code C14 CTI3 D9 ABET Expected res Expected res - Know the m - Know calcul - Know the ge Contents Topic Introduction Transmission - Shafts - Gears - Bearings Transmission - Belts & Cha - Lead screws - Couplings Joints:	Ability to design and tes F-i. A recognition of the ne esults from this subject rults from this subject rost common components late the elements more coeneral appearances of the estimate the elements more coeneral appearances of the coeneral appearances of the coeneral appearances of the coeneral appea	eed for, and an ability to of the machines and hommonly used in machine construction and calculation - Study Cas - Previous & - Element C - Application - Calculation - Theoretica - Element C - Application - Theoretica	is use. nes. nlation of machines. es & Applications Linked Subjects haracterization n Details n and Selection haracterization n Details claculation and Selection	ction	Learning Results C14
Code C14 CTI3 D9 ABET Expected res Expected res - Know the m - Know calcul - Know the ge Contents Topic Introduction Transmission - Shafts - Gears - Bearings Transmission - Belts & Cha - Lead screws - Couplings Joints: - Shaft-Hub Bolts & Screen	Ability to design and tes F-i. A recognition of the ne esults from this subject rults from this subject rost common components late the elements more coeneral appearances of the estimate the elements more coeneral appearances of the coeneral appearances of the coeneral appearances of the coeneral appea	eed for, and an ability to of the machines and hommonly used in machine construction and calculation - Study Cas - Previous & - Element C - Application - Calculation - Theoretica - Element C - Application - Theoretica	is use. nes. nlation of machines. es & Applications Linked Subjects haracterization n Details n and Selection haracterization n Details al Calculation and Select haracterization n Details	ction	Learning Results C14
Code C14 CTI3 D9 ABET Expected res Expected res - Know the m - Know calcul - Know the ge Contents Topic Introduction Transmission - Shafts - Gears - Bearings Transmission - Belts & Cha - Lead screws - Couplings Joints: - Shaft-Hub Bolts & Screen	Ability to design and tes F-i. A recognition of the ne esults from this subject rults from this subject rost common components late the elements more comeneral appearances of the estimate of the subject restriction of the subject rost common components late the elements more co	eed for, and an ability to for the machines and hommonly used in machine construction and calculation - Study Cas - Previous & - Element C - Application - Theoretica - Gear-boxe	is use. nes. nlation of machines. es & Applications Linked Subjects haracterization n Details n and Selection haracterization n Details al Calculation and Select haracterization n Details	ction	Learning Results C14
Code C14 CTI3 D9 ABET Expected res Expected res - Know the m - Know calcul - Know the ge Contents Topic Introduction Transmission - Shafts - Gears - Bearings Transmission - Belts & Cha - Lead screws - Couplings Joints: - Shaft-Hub Bolts & Screen Integration or	Ability to design and tes F-i. A recognition of the ne esults from this subject rults from this subject rost common components late the elements more comeneral appearances of the estimate of the subject restriction of the subject rost common components late the elements more co	eed for, and an ability to for the machines and hommonly used in machine construction and calculation - Study Cas - Previous & - Element C - Application - Theoretica - Gear-boxe	is use. nes. nlation of machines. es & Applications Linked Subjects haracterization n Details n and Selection haracterization n Details al Calculation and Select haracterization n Details	ction	Learning Results C14
Code C14 CTI3 D9 ABET Expected res Expected res - Know the m - Know calcul - Know the ge Contents Topic Introduction Transmission - Shafts - Gears - Bearings Transmission - Belts & Cha - Lead screws - Couplings Joints: - Shaft-Hub Bolts & Screen	Ability to design and tes F-i. A recognition of the ne esults from this subject rults from this subject rost common components late the elements more comeneral appearances of the estimate of the subject restriction of the subject rost common components late the elements more co	eed for, and an ability to for the machines and hommonly used in machine construction and calculation - Study Cas - Previous & - Element C - Application - Calculation - Element C - Application - Theoretica - Element C - Application - Theoretica - Gear-boxe - Analysis C	is use. nes. ilation of machines. es & Applications is Linked Subjects haracterization n Details n and Selection haracterization n Details al Calculation and Select haracterization n Details	ction	Learning Results C14 D9
Code C14 CTI3 D9 ABET Expected res Expected res - Know the m - Know calcul - Know the ge Contents Topic Introduction Transmission - Shafts - Gears - Bearings Transmission - Belts & Cha - Lead screws - Couplings Joints: - Shaft-Hub Bolts & Screen Integration or	Ability to design and tes F-i. A recognition of the ne esults from this subject rults from this subject rost common components late the elements more comeneral appearances of the estimate of the subject restriction of the subject rost common components late the elements more co	eed for, and an ability to for the machines and hommonly used in machine construction and calculation - Study Cas - Previous & - Element C - Application - Theoretica - Gear-boxe	is use. nes. ilation of machines. es & Applications is Linked Subjects haracterization n Details n and Selection haracterization n Details al Calculation and Select haracterization n Details	ction ction on	Learning Results C14

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		Training an Res	-
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

