

[GJG101] MANUFACTURING TECHNOLOGY

GENERAL INFORMATION

Studies	DEGREE IN MECHATRONICS ENGINEERING		Subject	?	
Semester	2	Course	1	Mention / Field of specialisation	
Character	OPTIONAL	Modality	Face-to-face	Language	CASTELLANO/EUSKARA
Plan	2020	Hours/week	5	Total hours	90 class hours + 60 non-class hours = 150 total hours
Credits	6				

PROFESSORS

ARISTIMUÑO OSORO, PATXI XABIER
MENDIGUREN OLAETA, JOSEBA
PLATA REDONDO, GORKA
DOK-GARCIA MICHELENA, PABLO
AZPI-LOPEZ, ANGEL (SOMORROSTRO)
LUENGO TESOURO, IVAN

REQUIRED PREVIOUS KNOWLEDGE

Subjects	Knowledge
(No specific previous subjects required)	(No previous knowledge required)

SKILLS

VERIFICA SKILLS

SPECIFIC

GJCE21 - To know the fundamentals of manufacturing and production systems.

GENERAL

GJCG03 - Addressing and optimising activities of assembly, commissioning, assistance and maintenance of facilities, machinery, and industrial mechatronic systems

CROSS

GJCTR2 - To be able to understand and apply knowledge to problem solving in complex work situations or specialised and professional environments calling for creative and innovative ideas, using self-developed arguments and procedures;

BASIC

G_CB5 - To have developed learning abilities required to embark on subsequent studies with a high level of autonomy.

LEARNING RESULTS

RGJ181 They communicate, search and structure written information: they write a clear and concise project report following the criteria established in the guide for written reports using the appropriate software.

LEARNING ACTIVITIES

Development and writing of records, reports, presentations, audiovisual material, etc. on projects/work experience/challenges/case studies/experimental investigations carried out individually and/or in teams

CH

2 h.

NCH

1 h.

TH

3 h.

EVALUATION SYSTEM

Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems

W

100%

MAKE-UP MECHANISMS

(No mechanisms)

Comments: Revision and correction of the written report of the semester project

CH - Class hours: 2 h.

NCH - Non-class hours: 1 h.

TH - Total hours: 3 h.

RGJ182 They communicate, search and structure orally the information correctly: they make a clear and concise oral presentation and defense of the project, considering the aspects gathered in the oral communication guide and using the proper software approp

LEARNING ACTIVITIES

CH

NCH

TH

Development and writing of records, reports, presentations, audiovisual material, etc. on projects/work experience/challenges/case studies/experimental investigations carried out individually and/or in teams	2 h.	2 h.	4 h.
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EVALUATION SYSTEM

W

Presentation and defence of exercises, case studies, computer practical work, simulation practical work, laboratory practical work, term projects, end of degree project, master's thesis, challenges and problems

100%

MAKE-UP MECHANISMS

(No mechanisms)

Comments: Continuous assessment. Retake is not foreseen.

CH - Class hours: 2 h.
NCH - Non-class hours: 2 h.
TH - Total hours: 4 h.

RGJ191 They use the right methodology to find solutions to problems and to develop projects: analyse problems properly, look for meaningful information to face them and propose solutions.

LEARNING ACTIVITIES

CH

NCH

TH

Carrying out/resolving projects/challenges/cases, etc. to provide solutions to problems in interdisciplinary contexts, real and/or simulated, individually and/or in teams

2 h.

2 h.

4 h.

EVALUATION SYSTEM

W

Observation (technical capacity, attitude and participation)

100%

MAKE-UP MECHANISMS

(No mechanisms)

Comments: Continuous assessment. Retake is not foreseen.

CH - Class hours: 2 h.
NCH - Non-class hours: 2 h.
TH - Total hours: 4 h.

RGJ192 They use the right methodology to find solutions to problems and to develop projects: analyse problems properly, look for meaningful information to face them and propose solutions.

LEARNING ACTIVITIES

CH

NCH

TH

Carrying out/resolving projects/challenges/cases, etc. to provide solutions to problems in interdisciplinary contexts, real and/or simulated, individually and/or in teams

2 h.

2 h.

4 h.

EVALUATION SYSTEM

W

Self-assessment

30%

Co-assessment

35%

Observation (technical capacity, attitude and participation)

35%

MAKE-UP MECHANISMS

(No mechanisms)

Comments: Continuous assessment. Retake is not foreseen.

CH - Class hours: 2 h.
NCH - Non-class hours: 2 h.
TH - Total hours: 4 h.

RGJ1011 They acquire knowledge about forming processes, understanding their advantages, limitations and main process parameters.

LEARNING ACTIVITIES

CH

NCH

TH

Development and writing of records, reports, presentations, audiovisual material, etc. on projects/work experience/challenges/case studies/experimental investigations carried out individually and/or in teams

21 h.

7 h.

28 h.

Personal study and flexible development of concepts and subjects using active dynamics, to foster more meaningful learning

4 h.

18 h.

22 h.

EVALUATION SYSTEM	W	MAKE-UP MECHANISMS
Presentation and defence of exercises, case studies, computer practical work, simulation practical work, laboratory practical work, term projects, end of degree project, master's thesis, challenges and problems	20%	(No mechanisms)
Individual written and/or oral tests or individual coding/programming tests	80%	Comments: Final exam mark: 75% the make-up, %25 the initial mark

CH - Class hours: 25 h.
NCH - Non-class hours: 25 h.
TH - Total hours: 50 h.

RGJ1012 They acquire knowledge about machining processes, understanding their advantages, limitations and main process parameters.

LEARNING ACTIVITIES	CH	NCH	TH
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	20 h.	5 h.	25 h.
Practical work in workshops and/or laboratories, individually and/or in teams	12 h.	13 h.	25 h.

EVALUATION SYSTEM	W	MAKE-UP MECHANISMS
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	20%	Individual written and/or oral tests or individual coding/programming tests
Individual written and/or oral tests or individual coding/programming tests	80%	Comments: Final exam mark: 75% the make-up, %25 the initial mark

CH - Class hours: 32 h.
NCH - Non-class hours: 18 h.
TH - Total hours: 50 h.

RGJ1013 They identify the components and describe the functions they perform in a fluid power system, understanding the circuits and diagrams in which they are displayed.

LEARNING ACTIVITIES	CH	NCH	TH
Carrying out/resolving projects/challenges/cases, etc. to provide solutions to problems in interdisciplinary contexts, real and/or simulated, individually and/or in teams	25 h.	10 h.	35 h.

EVALUATION SYSTEM	W	MAKE-UP MECHANISMS
Presentation and defence of exercises, case studies, computer practical work, simulation practical work, laboratory practical work, term projects, end of degree project, master's thesis, challenges and problems	100%	(No mechanisms)
		Comments: Continuous assessment. Retake is not foreseen.

CH - Class hours: 25 h.
NCH - Non-class hours: 10 h.
TH - Total hours: 35 h.

CONTENTS

Forming

-Sheet metal forming-Casting

Machining

-Turning-Milling-Drilling-Basic cutting tools-Basic cutting conditions-Process sheets-CNC

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources

Subject notes
Video projections
Lab practical training

Bibliography

Fundamentals of Modern Manufacturing. Materials, Processes and Systems. Mikell P. Groover.
Kalpakjian, S., Schmid, R.S. Manufacturing Engineering and Technology. Prentice Hall, New Jersey, 2000. ISBN: 978-0133128741
http://katalogoa.mondragon.edu/janium-bin/janium_login_opac_re_Ink.pl?grupo=MECATRONICA12&ejecuta=25&_ST