

[GJG102] MANUFACTURING TECHNOLOGIES

GENERAL INFORMATION

Studies	DEGREE IN MECHATRONICS ENGINEERING		Subject	?	
Semester	2	Course	2	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

PROFESSORS

MENDIGUREN OLAETA, JOSEBA
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AZPI-LOPEZ, ANGEL (SOMORROSTRO)

REQUIRED PREVIOUS KNOWLEDGE

Subjects	Knowledge
GRAPHIC EXPRESION	Technical drawing
MECHANICAL TECHNOLOGY	

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

RG201 They coordinate their work with the other members of the team, contribute in their team to the development of the tasks to be carried out and the creation of a good working climate.

LEARNING ACTIVITIES

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

CH

2 h.

NCH

2 h.

TH

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.

RG202 They make decisions and assess the possible consequences of the selected alternative.

LEARNING ACTIVITIES

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

CH

2 h.

NCH

2 h.

TH

4 h.

EVALUATION SYSTEM	W	MAKE-UP MECHANISMS
Observation (technical capacity, attitude and participation)	100%	(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.		

RG204 They define the problem, the development of the solution, as well as the conclusions in an effective way, making a correct use of the language, in writing.

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.

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	100%	Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems
Comments: Revision and correction of the written report of the semester project		

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

RG205 They define the problem, the development of the solution, as well as the conclusions in an effective way, making a correct use of the language, orally.

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.	1 h.	3 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: 2 h.
NCH - Non-class hours: 1 h.
TH - Total hours: 3 h.

RGJ206 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	10 h.	7 h.	17 h.
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	4 h.	10 h.	14 h.

Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects 15 h. 4 h. 19 h.

EVALUATION SYSTEM

W

Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems
Individual written and/or oral tests or individual coding/programming tests

20%

80%

MAKE-UP MECHANISMS

(No mechanisms)

Comments: In the case of having to take the make-up test, final mark: 75% of the make-up test + 25% of the first test.

CH - Class hours: 29 h.

NCH - Non-class hours: 21 h.

TH - Total hours: 50 h.

RGJ207 They acquire knowledge about machining processes, understanding their advantages, limitations and main process parameters.

LEARNING ACTIVITIES

CH

NCH

TH

Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints

2 h.

6 h.

8 h.

Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects

26 h.

16 h.

42 h.

EVALUATION SYSTEM

W

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

80%

MAKE-UP MECHANISMS

Individual written and/or oral tests or individual coding/programming tests

Comments: In the case of having to take the make-up test, final mark: 75% of the make-up test + 25% of the first test.

CH - Class hours: 28 h.

NCH - Non-class hours: 22 h.

TH - Total hours: 50 h.

RGJ208 They are able to choose and develop the optimum manufacturing process for a specific mechanical component considering its geometry and material composition.

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

25 h.

10 h.

35 h.

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, no make-up foreseen.

CH - Class hours: 25 h.

NCH - Non-class hours: 10 h.

TH - Total hours: 35 h.

CONTENTS

FORMING

1. Casting
2. Sheet metal forming

MACHINING

1. Turning
2. Milling
3. Drilling
4. Cutting conditions and cutting tools
5. Process sheets and machining practices

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources	Bibliography
Moodle Platform	Kalpakjian, S., Schmid, R.S. Manufacturing Engineering and Technology. Prentice Hall, New Jersey, 2000. ISBN: 978-01331287 http://katalogoa.mondragon.edu/janium-bin/janium_login_opac_re_in k.pl?grupo=MECATRONICA22&ejecuta=10&_ST
Class presentations	
Lab practical training	
Labs	
Video projections	