

Centre	University College of Engineering of Vitoria-Gasteiz
Name of subject	26047 – Mechanical Technology
Qualification	Degree in Mechanical Engineering
Type	Compulsory
Credits	6 ECTS
Year	3
Term(s)	1st
Department	Mechanical Engineering
Language	English, Spanish and Basque

Outcomes / Objectives

Manufacturing process systems. Forming by moulding and deformation. Numerical control machines. Computer aided manufacturing. Welding and its applications. Metrology and quality.

Syllabus

1. Moulding, casting, forming by plastic deformation.
2. Forging, rolling and extrusion, forming by plastic deformation.
3. Bar and wire drawing.
4. Tube manufacturing, cold stamping of sheet metal.
5. Cutting and punching, cold stamping of sheet metal.
6. Folding and bending.
7. Deep drawing, special forming processes, numerical control.
8. Lathe and milling machine.
9. Welding and applications.
10. Computer aided manufacturing.

Methodology

Teaching Method

Face-to-Face Teaching Hours

Lectures	Seminars	Classroom practice	Lab. practice	Computer sessions	Clinical practice	Workshops	Industrial workshops	Field practice
36		9	8	7				

Student Hours of Non Face-To-Face Activities

Lectures	Seminars	Classroom practice	Lab. practice	Computer sessions	Clinical practice	Workshops	Industrial workshops	Field practice
54		12	12	12				

Bibliography

Basic Bibliography

- Lecturer's notes
- "Tecnología Delineación 4 , Delineación Industrial". Editorial: EDEBE
- "Tecnología Mecánica y Metrotecnica". COCA REBOLLEDO. Editorial: Cosmos

In-depth Bibliography

- Metals Handbook. Volume 15: Casting", ASM,1988.
- "Metals Handbook, vol. 6: Welding, brazing and soldering", ASM, 1983.
- "Metals Handbook, vol. 14: Forming and forging", ASM, 1988.- Heine, R.W., Loper, C.R., Rosenthal, P.C., "Principles of metal casting", McGraw-Hill, 1955.
- Flemings, M.C., "Solidification processing", McGraw-Hill, 1974.
- Roberts, W.L., "Cold rolling of steel", Marcel Dekker, Inc., 1978
- Kalpakjian, S., "Manufacturing Processes for Engineering Materials", Addison-Wesley Publishing Company, 1984.
- J. A. Schey, "Procesos de manufactura", 3ª edición, McGraw-Hill, 2002.
- M. P. Groover, "Fundamentos de Manufactura Moderna. Materiales, procesos y sistemas", Prentice-Hall Hispanoamericana, S. A., México, 1997
- S. Kalpakjian and S.R. Schmid, "Manufacturing Engineering and Technology", 4th edt., Prentice-Hall Inc., New Jersey, USA, 2001.

Websites

- <http://www.sme.org>; (Society of Manufacturing Engineers)
- <http://www.sfsa.org>; (Steel Founders Society of America)
- <http://www.forging.org>; (Forging Industry Association)
- <http://www.aec.org>; (Aluminium Extruders Council)
- <http://www.aws.org>; (American Welding Society)
- <http://www.iiw-iis.org> (International Institute of Welding)
- <http://www.design4x.com> The Alliance for Innovative Manufacturing at Stanford University
- <http://manufacturing.stanford.edu/> The Alliance for Innovative Manufacturing at Stanford University
- <http://www.designinsite.dk/htmsider/home.htm>. Design Insite: The Designers's Guide to Manufacturing