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

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In-depth Bibliography

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- "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.
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Websites

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- 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