

Francesco Lambiase

Programme of "Tecnologie Industriali" "Advanced Technologies"		
Number of ECTS credits: 6 (workload is 60 hours of teaching + work at home)		
I0727, Compulsory 2 nd Cycle Management Engineering, 1 th year 2 nd semester Teacher: Francesco Lambiase		
1	Course objectives and Learning outcomes	The goal of this course is to provide the main concepts to compare different processes from the technical and economical point of view. The course is also aimed at analyzing the production chain of different products belonging to manufacturing, food, paper and wood enterprises. On successful completion of this module, the student should understand the fundamental advantages and drawbacks of analyzed processes and should be aware of potential applications of innovative processes.
2	Dublin descriptors	Topics of the module include: Analysis of process key-factors: Operative cost, quality, easiness of automation, environmental impact, possible alternatives Analysis of Manufacturing processes: Additive processes, subtractive processes, metal-forming processes, heat treatment processes. Food production and conservation: Classification of food products, main preparation processes from the harvest up to the packaging, main processes for increasing food durability, principles of sterilization. Production of wood products: wood behaviors, preliminary operations, main processes, main behaviors of drying facilities, batch cutting operations, fine cutting, wood bending. On successful completion of this module, the student should <ul style="list-style-type: none"> - have profound knowledge of basic metal-forming processes, their effect on the material behaviors; - demonstrate skill while compare different processes, their employment fields, advantages and limitations - have knowledge and understanding of the process chains analyzed, - understand and explain the main-phases required for food products production and conservations - demonstrate capacity for reading and understand other texts on related topics.
3	Prerequisites and learning activities	The student must know the basic notions of Mechanical Technologies.
4	Teaching methods and language	Lectures and exercises. Language: Italian / English Ref. Text books William F. Hosford and Robert M. – Caddell, Metal Forming: Mechanics and Metallurgy Carlo Pompei - La trasformazione industriale di frutta ed ortaggi. Tecnologie per la produzione di conserve e semiconserve vegetali Mario Niero - Operazioni unitarie dell'ingegneria alimentare. Modelli fisici e matematici. Macchine e impianti , di Dario Friso Fabio Ghetti - Il manuale delle carni. Macellazione e consumo delle carni bovine, suine, avicole e di nicchia.
5	Assessment methods	Project and oral exam.