



Course Presentation

Advanced manufacturing technologies	
Engineering School of Gafsa	Manufacturing 4.0
FOCAL AREA	Industry 4.0
Level	1 st
Semester	S1
Semester hourly volume	Integrated course: (21,5h=15h lecture + 7,5h tutorials)
Teacher	Mr Anas Bouguecha

Objectives

The aim of the module is to present an overview of advanced manufacturing technologies (AMT) and especially of the computer-integrated manufacturing (CIM):

- flexible manufacturing systems (FMS);
- the use and effectiveness of various technologies;
- computer-based integration.

INTENDED LEARNING OUTCOMES

to develop students' ability to evaluate the computer-integration in different manufacturing technologies and the implementation of AMT in industry

PREREQUISITES/ASSUMED KNOWLEDGE

- Manufacturing Systems and Technologies
- Computer sciences

Outline of the lecture (15h)

Chapter 1 (2h): Advanced Materials

Chapter 2 (2h): Fundamentals of automatization techniques

Chapter 3 (3h): Concepts of flexible manufacturing systems

Chapter 4 (4h): Computer-integration in additive manufacturing and CNC machining processes

Chapter 5 (4h): Machine to Machine communication in different manufacturing technologies

References

Kapil Gupta (2017) “**Advanced Manufacturing Technologies: Modern Machining, Advanced Joining, Sustainable Manufacturing**”, ISBN 978-3-319-56099-1

Chander Prakash, Sunpreet Singh, J. Paulo Davim (2020) “**Advanced Manufacturing and Processing Technology**”, ISBN 9780367275129