COURSE: **Industrial Systems Engineering**

Academic Year: 2019/2020

Type of Educational Activity: Characteristic

Teacher: Fabio Fruggiero

e-mail: fabio.fruggiero@unibas.it  
web: ftp dedicated as course starts

phone: +39 0971 205196  
mobile (optional): //

Language: Italian

ECTS: (lessons e tutorials/practice) | n. of hours: 34 (class) + 26 (practice) | Campus: Potenza  
Dept./School: School of Engineering  
Program: BME | Semester: 1

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Educational Goals and Expected Learning Outcomes

On completion of the module a typical student should be able to:

**Knowledge and Understanding:**
- Understand the main concepts and terminology of industrial and mechanical plants
- Understand the principle for the efficient and efficacious planning of main components of an industrial plant

**Intellectual Skills:**
- Analyze and Synthesize technical components and their performance for the optimal planning of industrial facilities and services
- Analyze and Synthesize resources based on products and market requirements
- Analyze and Synthesize procedure for Risk Management

**Practical Skills:**
- Plan the main components of an industrial plant and services
- Define Maintenance plans
- Realize a risk analysis

**Transferable Skills:**
- Manage Industrial Facilities

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Pre-requirements

Is required elementary knowledge about mathematics and physics and technology science.

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Syllabus


Fault diagnosis and maintenance strategies. The management of services and facilities. Main services. Safety and Risk Analysis - Risk Assessment and Management (Dlgs 81/2008 and its further integrations).

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Teaching Methods
The course arrange 26 hours of technical EXERCISES on real test beds and case issues; 34 hours of frontal TEACHING; It is expected ONE or MORE tours on real industrial systems; a final planning project

EVALUATION METHODS
Written test (planning methods - weight 0.4) and oral exam (knowledge measure - weight 0.6) are required. The written test is arranged on 3 numerical problems. Exercise 1 (weight 0.4) about production planning: it is required characterization of machines and methods and process, definition of an optimal - based on demand requirements – configuration. Exercise 2. (weight 0.3) is about internal logistic planning and analysis. Exercise 3 (weight 0.2) is about service planning and management. The written test is evaluated with a score from 18 to 30. Time for test is 3 hours. The student may use calculator and PC. An oral discussion is required. The oral examination is about industrial and mechanical systems engineering. The is a limit one to 5 days from written to oral examination. The final score of the test is the weighted sum of written and oral examination. A not sufficient score requires test repetition.
Integration and learning rights are guaranteed.

TEXTBOOKS AND ON-LINE EDUCATIONAL MATERIAL
Handmade notes and duplicated lectures notes with recommended bibliography for thorough analysis:

INTERACTION WITH STUDENTS
Students are invited to use online material. At starting it is required a registration (Name and Surname and email are needed) to a common service. It has been planning tutoring till two hours after the teaching calendar. Students can contact the teacher directly by email and phone/cell number. It is generally guaranteed tutorial long over the daily time.

EXAMINATION SESSIONS (FORECAST)¹
05/02/2020; 19/02/2020; 25/03/2020; 29/04/2020; 17/06/2020; 08/07/2020; 29/07/2020; 16/09/2020; 21/10/2020; 25/11/2020; 16/12/2020

SEMINARS BY EXTERNAL EXPERTS     YES ☐  NO ☐

BOOKS RECOMMENDED FOR READINGS:
- D. Lapiere, J. oro, Mezzanotte e cinque a Bhopal, Mondadori, 2003
- R. Norman, Ridisegnare L’impresa. Quando la mappa cambia il paesaggio . Etas libr, 2002
- M. Goldratt, Theory of Constraints and how should it be implemented, 1990.
- Primo Levi, La chiave a stella, Einaudi 1978.
- Primo Levi, Il Sistema Periodico, Einaudi 1975

¹ Subject to possible changes: check the web site of the Teacher or the Department/School for updates.