COURSE: Materials Technology and Applied Chemistry  
ACADEMIC YEAR: 2019-2020 
TYPE OF EDUCATIONAL ACTIVITY: Characteristic  
TEACHER: Milena Marroccoli  
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Language: ITALIAN

ECTS: 9  
n. of hours: 90  
Campus: Potenza  
School of Engineering  
Program: Mechanical Engineering  
Semester: II

EDUCATIONAL GOALS AND EXPECTED LEARNING OUTCOMES
The main knowledges refer to:

- Relationships among composition, microstructure and properties of metals, polymers and ceramics.
- Materials and substances mainly related to the Mechanical Engineering Field.
- Main physico-chemical water treatment techniques.
- Solid, liquid and gaseous fuels.

The student will be able to:

- select the most suitable materials to be employed in the Mechanical Engineering Field;
- determine the most effective methodology for the treatment of industrial water on the basis of the required chemical-physical characteristics
- evaluate the main fuel technological parameters.

PRE-REQUIREMENTS
Basic concepts of Fundamentals of Chemistry

SYLLABUS
Strengthening a Metal: solid solution hardening, precipitate and dispersion strengthening, cold work-hardening, the dislocation yield strength . Increasing the ductility by annealing


Refractories.

traditional fuels.

**Lubricants.** Classification, components, properties, function.


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**TEACHING METHODS**
Theoretical lessons, Classroom tutorials.

**EVALUATION METHODS**
Written examination lasting 2 hours. Partial written tests may also be held.

**TEXTBOOKS AND ON-LINE EDUCATIONAL MATERIAL**
- Notes from lectures
- C. Brisi – Lezioni di Chimica Applicata, Editrice Universitaria Levrotto & Bella, Torino.

**INTERACTION WITH STUDENTS**
Wednesday 3-5 pm. Other appointments can be arranged with students by e-mail.

**EXAMINATION SESSIONS (FORECAST)**
2020 Year
4/2; 20/3; 8/5; 12/6; 16/7; 17/9; 6/11; 11/12

**SEMINARS BY EXTERNAL EXPERTS**
YES ☐ NO ☒

**FURTHER INFORMATION**