



ENVIRONMENT SCIENCES 2

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| Enrollment year | 2018/2019 |
| Academic year | 2019/2020 |
| Regulations | DM270 |
| Department | DEPARTMENT OF PUBLIC HEALTH, NEUROSCIENCE, EXPERIMENTAL AND FORENSIC MEDICINE |
| Course | ENVIRONMENT AND WORKPLACE PREVENTION TECHNIQUES |
| Curriculum | PERCORSO COMUNE |
| Year of study | 2° |
| Period | 1st semester (01/10/2019 - 17/01/2020) |
| ECTS | 6 |
| Language | Italian |

The activity is split

503524 - ENVIRONMENT AND CULTURAL GOODS CHEMISTRY

503523 - ECOLOGY 2

503525 - HEALTH ENGINEERING AND ENVIRONMENTAL DETECTION



ENVIRONMENT AND CULTURAL GOODS CHEMISTRY

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|----------------------------|--|
| Enrollment year | 2018/2019 |
| Academic year | 2019/2020 |
| Regulations | DM270 |
| Academic discipline | CHIM/12 (ENVIRONMENTAL CHEMISTRY AND CHEMISTRY FOR CULTURAL HERITAGE) |
| Department | DEPARTMENT OF PUBLIC HEALTH, NEUROSCIENCE, EXPERIMENTAL AND FORENSIC MEDICINE |
| Course | ENVIRONMENT AND WORKPLACE PREVENTION TECHNIQUES |
| Curriculum | PERCORSO COMUNE |
| Year of study | 2° |
| Period | 1st semester (01/10/2019 - 17/01/2020) |
| ECTS | 2 |
| Lesson hours | 16 lesson hours |
| Language | Italian |
| Activity type | WRITTEN TEST |
| Teacher | COLLI MAURIZIO - 2 ECTS |
| Prerequisites | basic chemistry inorganic and organic |
| Learning outcomes | <p>The course aims to learn the chemical-environmental processes to understand anthropological interferences, chemical-environmental equilibria and the ability to self-purify environmental matrices. Furthermore, knowledge of environmental chemistry explains the various interferences with cultural heritage and its conservation.</p> |
| Course contents | <p>Water: water distribution in the hydrosphere Water classification Lentiche Lotiche Transitional-marine water Chemical characteristics Relations between BOD-COD-TOC Water quality according to use Water pollution.</p> <p>. Soil: formation-pedogenic processes Main chemical properties of the</p> |

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| | <p>soil and their measurement Atmospheric inputs Self-purifying capacity Treatment and recovery of polluted soils.</p> |
| Teaching methods | <p>The course is organized lectures. In the second year, at the end of the lectures, a visit to the Synlab A & S Industrial Hygiene Laboratory (Mer) is scheduled to examine the analytical techniques and the equipment used for environmental analyzes.</p> |
| Reccomended or required readings | <p>The course is organized lectures. In the second year, at the end of the lectures, a visit to the Synlab A & S Industrial Hygiene Laboratory (Mer) is scheduled to examine the analytical techniques and the equipment used for environmental analyzes.</p> <p>Material for exam preparation will be provided as slides or notes.</p> <p>Recommended texts</p> <p>Applied ecology Renato Vismara Ed. Hoepli</p> <p>Organic micropollutants Silvana Galassi Ed. Hoepli</p> <p>The air Beat Meyer Ed. New Techniques</p> <p>Clean chemistry Hermann Fischer Ed. New Techniques</p> <p>Environmental Chemistry Ed. Wiley</p> <p>Soils and ecosystems Romano Rasio Ed. Cappelli</p> |
| Assessment methods | <p>The exam will be in written form, with open answers, to 10 questions that cover the entire program of the course.</p> <p>The adequacy and completeness of the answer will be the indicators to assess the student's degree of learning and the relative attribution of the exam score.</p> |
| Further information | |
| Sustainable development goals - Agenda 2030 | <p>\$ibl legenda sviluppo sostenibile</p> |



ECOLOGY 2

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| Enrollment year | 2018/2019 |
| Academic year | 2019/2020 |
| Regulations | DM270 |
| Academic discipline | BIO/07 (ECOLOGY) |
| Department | DEPARTMENT OF PUBLIC HEALTH, NEUROSCIENCE, EXPERIMENTAL AND FORENSIC MEDICINE |
| Course | ENVIRONMENT AND WORKPLACE PREVENTION TECHNIQUES |
| Curriculum | PERCORSO COMUNE |
| Year of study | 2° |
| Period | 1st semester (01/10/2019 - 17/01/2020) |
| ECTS | 2 |
| Lesson hours | 16 lesson hours |
| Language | Italian |
| Activity type | ORAL TEST |
| Teacher | PAVAN GIANNI (titolare) - 2 ECTS |
| Prerequisites | |
| Learning outcomes | |
| Course contents | |
| Teaching methods | |
| Reccomended or required readings | |
| Assessment methods | |
| Further information | |
| Sustainable development | |



HEALTH ENGINEERING AND ENVIRONMENTAL DETECTION

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|----------------------------|--|
| Enrollment year | 2018/2019 |
| Academic year | 2019/2020 |
| Regulations | DM270 |
| Academic discipline | ICAR/03 (ENVIRONMENTAL AND HEALTH ENGINEERING) |
| Department | DEPARTMENT OF PUBLIC HEALTH, NEUROSCIENCE, EXPERIMENTAL AND FORENSIC MEDICINE |
| Course | ENVIRONMENT AND WORKPLACE PREVENTION TECHNIQUES |
| Curriculum | PERCORSO COMUNE |
| Year of study | 2° |
| Period | (01/10/2019 - 17/01/2020) |
| ECTS | 2 |
| Lesson hours | 16 lesson hours |
| Language | Italian |
| Activity type | WRITTEN AND ORAL TEST |
| Teacher | CALLEGARI ARIANNA - 2 ECTS |
| Prerequisites | |
| Learning outcomes | <p>To learn methods on microbiological, chemical and physical characterization of water and waste water.</p> <p>To understand the effects of pollutants immission in the environment (origin and type), diffusion, persistence</p> <p>To be aware about water legislation and risk analysis</p> <p>To understand biodegradation phenomena of organic matter</p> <p>To understand activated sludge wastewater treatment plants working principles - in both water and sludge compartments</p> <p>Learn basic concepts of waste analysis, treatment, and disposal, and related legislation</p> <p>Understand basic principles of disposal of leachates, wastewater sludge and organic waste.</p> |

Course contents

- 1) Microbiological, chemical and physical characterization of water and waste water;
- 2) effects of pollutants immission in the environment (origin and type), diffusion, persistence;
- 3) water legislation and risk analysis;
- 4) biodegradation of organic matter;
- 5) activated sludge wastewater treatment plants - water and sludge compartments;
- 6) waste analysis, treatment, and disposal, and related legislation;
- 7) disposal of leachates, wastewater sludge and organic waste.

Teaching methods

Frontal lectures. On-site visit.

**Reccomended or required
readings**

Lecturers' notes.

Final written examination.

Further information

If a site visit to an urban wastewater treatment plant will be arranged.

