

COURSE LIST Faculty of Engineering and Architecture

Environmental Engineering Department

Course Title	Code	ECTS Credit	COMU Credit	Lecturer
Professional English 1	ULP-04-031	3	2	Assistant Professor Dr. Hasan Göksel Özdilek
Environmental Engineering Ecology	ULP-04-032	6	3	Assistant Professor Dr. Hasan Göksel Özdilek
Soil and Groundwater Contamination and Control	ULP-04-033	5	3	Assistant Professor Dr. Hasan Göksel Özdilek
Professional English 2	ULP-04-034	3	2	Assistant Professor Dr. Hasan Göksel Özdilek
Water Supply and Pollution Control	ULP-04-035	7	4	Assistant Professor Dr. Hasan Göksel Özdilek
Advanced Oxidation Processes	ULP-04-037	5	3	Assoc. Prof. Dr. Önder Ayyıldız
Solid Waste Management	ULP-04-038	5	3	Assist. Prof. Dr. Akın Altın
Building Health and Air Quality	ULP-04-039	5	3	Assist. Prof. Dr. Sibel Menteş

Course Code	ULP-04-031
Name of the Course in English	Professional English I
Name of the Course in Turkish	Mesleki İngilizce I
Language of the Course	English
Level of the Course	( x ) Undergraduate ( ) Master ( ) Doctorate
Lecturer	Assistant Professor Dr. Hasan Goksel OZDILEK
ECTS Credit	3
COMU Credit	2
Description	<p>Teaching of fundamental subjects in Environmental Engineering; Professional terminology; Prefix and suffix usage</p> <p>Professional terms in Environmental Engineering; General introduction; Definition of "Engineering" text. Sanitary Engineering.</p> <p>Prefix and suffix usage; word and terminology issues</p> <p>Environmental Engineering water supply and pollution control terminology and text reading and writing practice.</p> <p>Environmental Engineering air pollution and its control terminology, reading assignment.</p> <p>Urban infrastructure, sewerage, sweeping, cleanup, etc. terminology in Environmental Engineering</p> <p>Environmental Engineering wastewater treatment and operations terminology (physical (preliminary) methods)</p> <p>Environmental Engineering wastewater treatment and operations terminology (chemical and biochemical processes)</p> <p>Environmental Engineering wastewater treatment systems biological and biochemical methods and disinfection - MID</p>

	<p>TERM EXAMINATION</p> <p>Environmental Engineering water pollution, stagnant and flowing water science terminology, reading practice</p> <p>Environmental Engineering alternative energy sources and material flow, total quality management terminology</p> <p>Biotechnology terminology used in Environmental Engineering</p> <p>Laboratory devices and equipment and their techniques used in Environmental Engineering</p> <p>Technical terminology and technical communication - An analogy</p> <p>Translation practice, summation, description and narration.</p>
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Course Code	ULP-04-032
Name of the Course in English	Environmental Engineering Ecology
Name of the Course in Turkish	Çevre Ekolojisi
Language of the Course	English
Level of the Course	<input checked="" type="checkbox"/> Undergraduate <input type="checkbox"/> Master <input type="checkbox"/> Doctorate
Lecturer	Assistant Professor Dr. Hasan Goksel OZDILEK
ECTS Credit	6
COMU Credit	3
Description	<p>Ecology is the science that examines relationships between living creatures and nonliving resources, their importance on all types of activities in earth, geology, material and energy balance as well as human impact on ecosystems</p> <p>Definition of ecology, ecological connections, life on earth</p> <p>Ecological Cycles, integrity of cycles, hydrologic cycle</p> <p>Energy (solar energy and other energy resources) and material cycles within the world</p>

	<p>Sulfur, carbon, nitrogen and phosphorus cycles</p> <p>Population Ecology, predator-prey relationships, ecological niche concept, ecological pyramid,</p> <p>Human Populations, population growth, population data gathering methods, demographics and future population predictions</p> <p>Role of humans in nature– MID TERM EXAMINATION</p> <p>Environmental contamination and its effects on the ecological integrity</p> <p>Environmental perspectives, use of materials, renewable resources and nonrenewable resources</p> <p>Environmental Standards and Environmental Economy, Natural Resource Economics</p> <p>Student Presentations</p> <p>Student Presentations</p> <p>General Overview of the course</p> <p>Environmental Planning and Sustainable Development</p>
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Course Code	ULP-04-033
Name of the Course in English	Soil and Groundwater Contamination and Control
Name of the Course in Turkish	Toprak ve Yeraltı Suyu Kirliliği ve Kontrolü
Language of the Course	English
Level of the Course	<input checked="" type="checkbox"/> Undergraduate <input type="checkbox"/> Master <input type="checkbox"/> Doctorate
Lecturer	Assistant Professor Dr. Hasan Goksel OZDILEK
ECTS Credit	5
COMU Credit	3
Description	Soil composition, soil formation and morphology, soil-rock relationship, environmental factors that affect soil quality

Classifications of soils, soil types and their importance  
Fundamentals of soil mechanics, soil-water content, soil-air content, etc. Soil potassium, sulphur and other micro nutrients, physical and chemical treatment, temperature, nutrient, soil carbon and other factors that play important roles in pollutant transport in soil, Site and underground characterization. Quantitative risk evaluation and Ecological risk assessment

Soil colloids and their chemical properties, groundwater movement, soil particle and soil-water interactions  
Soil as a water reservoir, groundwater and its general properties  
Contaminated sites, types of contamination, determination of contaminant levels and volumes

Management of contaminated lands

Acidic soil and treatment techniques, soil contamination due to traffic, air pollution and slurry pollution factors  
The most important waste sources of agricultural soils: nitrogen and phosphorus. Industrial soil pollution problems

– MID TERM EXAMINATION

Salt-Affected soils and treatment techniques, salt water intrusion to groundwater resources, its effects on soil quality  
Soil erosion and sediment control, chemical and biochemical groundwater and soil treatment systems  
Energy, mass balance and type of reactors used in soil pollution remediation

Volume reduction of contaminants, site selection, in-situ and ex-situ treatment options

Soil pollution control methods specifically thermal treatment techniques, Air stripping, Soil-vapor extraction, Active carbon, soil flushing, stream stripping, chemical oxidation, membrane processes, ion exchange technologies, stabilization and solidification, incineration.

Hazardous materials and treatment techniques, contamination control using thermal technology

Soil survey and Land-Use Planning

General Review of the Course

Course Code	ULP-04-034
Name of the Course in English	Professional English II
Name of the Course in Turkish	Mesleki İngilizce II
Language of the Course	English
Level of the Course	<input checked="" type="checkbox"/> Undergraduate <input type="checkbox"/> Master <input type="checkbox"/> Doctorate
Lecturer	Assistant Professor Dr. Hasan Goksel OZDILEK
ECTS Credit	3
COMU Credit	2
Description	<p>Technical writing and expressions, academic writing assignment  Workplace communication, professional communication techniques, workplace communication ways, professional communication and technical communication  Summarizing a technical report, scanning and narrating techniques, reading and understanding a text  Graphics, maps, pictures and tables (Visuals), use of visuals in Professional communication, animations and presentations  Business Proposals and Technical Documents, technical reports in Environmental Engineering  Explaining professionally what something is – MID TERM EXAMINATION  Using technical terminology in reports, environmental engineering terminology  How to write a resume, how to submit a resume, putting Professional experience in text  Team work and interdisciplinary applications  Preparing a technical report, planning, compiling resources  Preparing a technical report, progress in writing  Peer review of technical reports after shaping it  Finalizing technical report, Submitting technical reports electronically or in written form</p>

	General Course Review
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Course Code	ULP-04-035
Name of the Course in English	Water Supply and Pollution Control
Name of the Course in Turkish	Su Getirme ve Kirlilik Kontrolü
Language of the Course	English
Level of the Course	( x ) Undergraduate ( ) Master ( ) Doctorate
Lecturer	Assistant Professor Dr. Hasan Goksel OZDILEK
ECTS Credit	7
COMU Credit	4
Description	Management of water supply systems, hydrological cycle and quality of water resources  Population growth and water need projections  Reservoirs, groundwater, wells and their protection  Water distribution systems, Aqueducts and water pipes  Water harvesting technologies for arid and semi-arid regions  Supply-demand curves, water storage, fundamentals of water distribution  Water and health (an introduction), water quality and the ecological integrity  Potable water quality and water resources  Wise-water use techniques in communities and industries as well as in agricultural sector

	<p>Acceptance of reduction of water (water saving) used by society</p> <p>Sustainable water supply strategies and solutions - MID TERM EXAMINATION</p> <p>Water pollution due to sewerage, stagnant and flowing water science terminology, reading practice</p> <p>Storm Water Flow Sewerage general considerations, how much water in sewer systems expected after a known amount is supplied – Quantitative aspects</p> <p>Sewer Materials Sewer Appurtenances Design of Sewer Systems Sewer Construction and Maintenance Characteristics of Sewage Sewage Disposal Sewerage units at dwellings, institutions and other facilities</p> <p>Design practice, computation and summation of a water or sewerage system of a city.</p>
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Course Code	ULP – 04-037
Name of the Course in English	Advanced Oxidation Processes
Name of the Course in Turkish	İleri Oksidasyon Prosesleri
Language of the Course	English
Level of the Course	<input checked="" type="checkbox"/> Undergraduate <input type="checkbox"/> Master <input type="checkbox"/> Doctorate



Lecturer	Assoc. Prof. Dr. Önder AYYILDIZ
ECTS Credit	5
COMU Credit	3
Description	Performance analyses of individual or combined advanced oxidation processes such as Hydrogen Peroxide (H <sub>2</sub> O <sub>2</sub> ), Ozone (O <sub>3</sub> ), Ultraviolet (UV), Fenton's reagent, ultrasound (US), electrochemical coagulation, UV/O <sub>3</sub> , UV/H <sub>2</sub> O <sub>2</sub> , UV/Semiconductor (TiO <sub>2</sub> , FeO <sub>2</sub> etc.), US/O <sub>3</sub> , and so on.

Course Code	ULP - 04 - 038
Name of the Course in English	Solid Waste Management
Name of the Course in Turkish	Katı Atık Yönetimi
Language of the Course	English
Level of the Course	( x ) Undergraduate ( ) Master ( ) Doctorate
Lecturer	Assist. Prof. Dr. Akın ALTEN
ECTS Credit	5
COMU Credit	3
Description	General principals of solid waste management, description of solid waste and its classification, disposal methods of solid wastes, operation of disposal facilities.

Course Code	ULP - 04 - 039
Name of the Course in English	Building Health and Air Quality
Name of the Course in Turkish	Bina Sađlıđı ve Hava Kalitesi
Language of the Course	English
Level of the Course	<input checked="" type="checkbox"/> Undergraduate <input type="checkbox"/> Master <input type="checkbox"/> Doctorate
Lecturer	Assist. Prof. Dr. Sibel MENTEŐE
ECTS Credit	5
COMU Credit	3
Description	Biological, organic and inorganic sources, affecting the building health will be investigated. Thermal comfort parameters and physical parameters influencing the air quality will be determined. Case studies on "healthy buildings" conducted in Turkey (Occupational safety and health of workers) and worldwide will be surveyed along with the numerous quality and certification systems (LEED, Blue angel, GUT, etc.).