

COURSE INFORMATION					
Course Title	Code	Semester	L+P+L Hour	Credits	ECTS
SUSTAINABILITY MANAGEMENT AND LEGAL FRAMEWORK	CE 564	-	3+0+0	3	10

Prerequisites	
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Language of Instruction	English
Course Level	Master's Degree (Second Cycle Programs)
Course Type	Departmental Elective
Course Coordinator	Assist. Prof. Dr. Özgür Köylüoğlu
Instructors	Assist. Prof. Dr. Özgür Köylüoğlu
Assistants	-
Goals	The goal of this course is to develop a knowledge base consisting of regulations, specifications, databases and calculation methods of metrics of sustainability.
Content	Basic principles of sustainability; technical, financial, managerial and political issues for a sustainable environment and economy; environmental policies; international treaties; sustainability economics

Course Learning Outcomes	Program Learning Outcomes	Teaching Methods	Assessment Methods
1) Ability to describe sustainability framework for civil engineering projects	1, 8, 9, 10, 11, 12	1,2	A, B, C
2) Ability to calculate metrics for sustainability	1, 8, 9, 10, 11, 12	1,2	A, B, C
3) Ability to develop regulations for sustainability in civil engineering projects	1, 8, 9, 10, 11, 12	1,2	A, B, C
4) Ability to use databases for sustainability in civil engineering projects	1, 8, 9, 10, 11, 12	1,2	A, B, C

Teaching Methods:	1: Lecture, 2: Class discussion
Assessment Methods:	A: Written Exam, B: Homework, C: Term Project

COURSE CONTENT		
Week	Topics	Study Materials
1	Introduction	Lecture Notes and Textbook
2	Sustainability Framework for Civil Engineers	Lecture Notes and Textbook
3	Sustainability Framework for Construction Managers	Lecture Notes and Textbook
4	Economics of Sustainable Engineering	Lecture Notes and Textbook
5	Life Cycle Analysis	Lecture Notes and Textbook
6	Social Sustainability	Lecture Notes and Textbook
7	1 st Midterm Exam	Lecture Notes and Textbook
8	Sustainable Implementation	Lecture Notes and Textbook
9	International Regulations for Green Design and Manufacturing	Lecture Notes and Textbook
10	The European Energy Policy and Green Energy	Lecture Notes and Textbook
11	The European Unions's Emissions Trading Scheme	Lecture Notes and Textbook
12	Zero Energy Buildings	Lecture Notes and Textbook
13	Case Studies	Lecture Notes and Textbook
14	Case Studies	Lecture Notes and Textbook
15	Presentations of Students on Sustainability Framework of Various Countries	Lecture Notes and Textbook

RECOMMENDED SOURCES	
Lecture Notes	Notes prepared by the instructor
Textbook	<p><u>Fundamentals of Sustainability in Civil Engineering</u> Authors: A. Braham; CRC Press, Taylor&Francis, 2017</p> <p><u>Green Design and Manufacturing for Sustainability</u> Authors: N.K. Jha; CRC Press, Taylor&Francis, 2016</p> <p><u>Sustainable Development and Governance in Europe: The Evolution of the Discourse on Sustainability</u> Authors: P.M. Bharnes, T.C. Hoerber; Routledge, Taylor&Francis, 2015</p> <p><u>System Innovation for Sustainability 4: Case Studies in Sustainable Consumption and Production – Energy Use and the Built Environment</u></p>

Authors: S.Lahlou; Routledge, Taylor&Francis, 2011
World Sustainable Development Outlook 2015: Green Behavior: Re-thinking Policy for Sustainability
 Authors: A. Ahmed; CRC Press, Taylor&Francis, 2015

MATERIAL SHARING

Documents	Lecture notes delivered to the students
Assignments	Homeworks are returned to students after they are graded
Exams	Exams questions are solved if demanded

ASSESSMENT

	IN-TERM STUDIES	NUMBER	PERCENTAGE
Mid-terms		1	40
Assignment		6	30
Term Project		1	30
	Total		100
CONTRIBUTION OF FINAL EXAMINATION TO OVERALL GRADE			40
CONTRIBUTION OF IN-TERM STUDIES TO OVERALL GRADE			60
	Total		100

COURSE CATEGORY

Expertise Courses

COURSE'S CONTRIBUTION TO PROGRAM

No	Program Learning Outcomes	Contribution				
		1	2	3	4	5
1	Attains knowledge through wide and in-depth investigations his/her field and surveys, evaluates, interprets, and applies the knowledge thus acquired.					√
2	Has a critical and comprehensive knowledge of contemporary engineering techniques and methods of application.					
3	By using unfamiliar, ambiguous, or incompletely defined data, completes and utilizes the required knowledge by scientific methods; is able to fuse and make use of knowledge from different disciplines.					
4	Has the awareness of new and emerging technologies in his/her branch of engineering profession, studies and learns these when needed.					
5	Defines and formulates problems in his/her branch of engineering, develops methods of solution, and applies innovative methods of solution.					

6	Devises new and/or original ideas and methods; designs complex systems and processes and proposes innovative/alternative solutions for their design.				
7	Has the ability to design and conduct theoretical, experimental, and model-based investigations; is able to use judgment to solve complex problems that may be faced in this process.				
8	Functions effectively as a member or as a leader in teams that may be interdisciplinary, devises approaches of solving complex situations, can work independently and can assume responsibility.	√			
9	Has the oral and written communication skills in one foreign language at the B2 general level of European Language Portfolio.				√
10	Can present the progress and the results of his investigations clearly and systematically in national or international contexts both orally and in writing.				√
11	Knows social, environmental, health, safety, and legal dimensions of engineering applications as well as project management and business practices; and is aware of the limitations and the responsibilities these impose on engineering practices.				√
12	Commits to social, scientific, and professional ethics during data acquisition, interpretation, and publication as well as in all professional activities			√	

ECTS ALLOCATED BASED ON STUDENT WORKLOAD BY THE COURSE DESCRIPTION

Activities	Quantity	Duration (Hour)	Total Workload (Hour)
Course Duration (Excluding the exam weeks: 13x Total course hours)	13	3	39
Hours for off-the-classroom study (Pre-study, practice)	13	3	39
Midterm examination	1	2	10
Homework	6	15	90
Project	1	50	50
Final examination	1	2	14
Total Work Load			242
Total Work Load / 25 (h)			10
ECTS Credit of the Course			10