

COURSE INFORMATION					
Course Title	Code	Semester	L+P+L Hour	Credits	ECTS
SUSTAINABLE CITIES	CE 565	-	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	Assoc. Prof. Dr. Börte Köse Mutlu
Assistants	-
Goals	Recognizing new trends towards sustainable cities, considerations towards achieving zero carbon cities and current efforts in this area.
Content	Energy performance criteria for buildings; alternatives for performance enhancement, development of policies and strategies for sustainable cities; energy efficiency for buildings; reducing GHG emissions in buildings; clean water; solid waste management policies and technologies; approaches for determination of climate change parameters in cities.

Course Learning Outcomes	Program Learning Outcomes	Teaching Methods	Assessment Methods
1) Ability to describe forces driving sustainable cities	1, 8, 9, 10, 11, 12	1,2	A, B, C
2) Ability to analyse various policies employed for sustainable cities	1, 8, 9, 10, 11, 12	1,2	A, B, C
3) Ability to describe sustainable infrastructure	1, 8, 9, 10, 11, 12	1,2	A, B, C
4) Ability to analyse new trends and future of sustainable cities and development of smart city concepts	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	Global Challenges for Sustainability	Lecture Notes and Textbook
3	Governing Carbon and Climate in the Cities	Lecture Notes and Textbook
4	Sustainable Urban Design	Lecture Notes and Textbook
5	Case Study	Lecture Notes and Textbook
6	Midterm Exam	Lecture Notes and Textbook
7	Infrastructure Planning	Lecture Notes and Textbook
8	Case Study	Lecture Notes and Textbook
9	Technologies for Green Environment	Lecture Notes and Textbook
10	Energy Conservation and Management	Lecture Notes and Textbook
11	Sustainable Models for Rural Communities	Lecture Notes and Textbook
12	Future Forms of City Living	Lecture Notes and Textbook
13	Case Study	Lecture Notes and Textbook
14	Smart Cities	Lecture Notes and Textbook
15	Presentations of Students on Sustainable City Studies	Lecture Notes and Textbook

RECOMMENDED SOURCES

Lecture Notes

Notes prepared by the instructor

Textbook

- Climate Change and Sustainable Cities**
Editors: H. Priemus, S. Davoudi; Routledge, 2013
- Sustainability: RIBA Plan of Work 2013 Guide**
Authors: G.C. Gallopin; P.D. Raskin, Routledge, 2016
- Future Forms and Design for Sustainable Cities**
Authors: M. Jenks, N. Dempsey; Routledge, 2005
- Sustainable Cities: Urban Planning Challenges and Policy**
Authors: K. Etingoff; Apple Academic Press, 2016
- Global Sustainability: Bending the Curve**
Authors: S. Halliday, R. Atkins; RIBA Publishing, 2016
- Planning Sustainable Cities: Global Report on Human Settlements**
Authors: United Nations Human Settlement Programme (UN-Habitat), 2009
- Resilient Sustainable Cities: A Future**
Authors: L Pearson, P. Newton, P. Roberts; Routledge, 2013
- Planning Sustainable Cities: An Infrastructure Based Approach**
Authors: S.N. Pollalis, 2016
- Improving Urban Environments: Strategies for Healthier and More Sustainable Cities**
Authors: M. Ragazzi; Apple Academic Press, 2016
- Spaces of Sustainability: Geographical Perspectives on the Sustainable Society**
Authors: M. Whitehead, Routledge, Taylor&Francis, 2006
- The Earthscan Reader in Sustainable Cities**
Authors: D. Satterthwaite, Routledge, 1999
- The Principles of Green Urbanism: Transforming the City for Sustainability**
Authors: S. Lehmann, Routledge, Taylor&Francis, 2010
- Sustainable Cities in Developing Countries**
Authors: C. Pugh, Routledge, Taylor&Francis, 2000
- Sustainable Stockholm: Exploring Urban Sustainability in Europe's Greenest City**
Authors: H. Metzger, A.R. Olsson; Routledge, Taylor&Francis, 2013
- Energizing Sustainable Cities: Assessing Urban Energy**
Authors: A. Grubler, D. Fisk, Routledge, Taylor&Francis, 2012
- Sustainable City/Developing World: ISOCARP Review 6**
Authors: International Society of City and Regional Planners, Routledge, Taylor&Francis, 2010
- The Singapore Water Story: Sustainable Development in an Urban City-State**
Authors: C. Torjada, Y.K. Joshi, A.K. Biswas; Routledge, 2013
- Cities as Engines of Sustainable Competitiveness: European Urban Policy and Practice**
Authors: L van den Berg, J van der Meer; Routledge, 2016
- Towards Sustainable Cities: East Asian, North American and European Perspectives on Managing Urban Regions**
Authors: P.C. Marcotullio, A. Sorensen; Routledge, 2017

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
Quizzes	-	-
Assignment	6	30
Lab Work	-	-
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
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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