



El Camino College
COURSE OUTLINE OF RECORD – Official

Subject:	SUST
Course Number:	100
Descriptive Title:	Sustainability in the Building Sector
Division:	Industry and Technology
Department:	Environmental Technology
Course Disciplines:	Architecture
Catalog Description:	This launch course introduces students to the influence that the built-environment has in achieving sustainable outcomes that protect ecological systems, manage natural resources, and create healthy places. Students will learn about the various roles that the government, the advocates, and the building professions play in advancing such efforts. The course will include an exploration of the multiple educational and real-world career paths available.
Prerequisite:	
Co-requisite:	
Recommended Preparation:	Eligibility for English 1A
Enrollment Limitation:	
Hours Lecture (per week):	1
Hours Laboratory (per week):	0
Outside Study Hours:	2
Total Course Hours:	18
Course Units:	1
Grading Method:	Letter Grade only
Credit Status:	Credit, degree applicable
Transfer CSU:	Yes
Effective Date:	
Transfer UC:	No
Effective Date:	
General Education ECC:	
Term:	
Other:	
CSU GE:	
Term:	
Other:	
IGETC:	
Term:	
Other:	

<p>Student Learning Outcomes:</p>	<p>SLO #1 Sustainability and the Built Environment</p> <p>Given lecture information and in-class discussion about the role of the building sectors and the environment, students will demonstrate their knowledge about sustainability and the environment.</p> <p>SLO #2 Environmental Stewardship</p> <p>Given information, examples, and discussion, students will be able to survey the ecological impacts and the career roles that can influence the protection of the environment and management of natural resources.</p> <p>SLO #3 Analytical Skills</p> <p>Successful students tracking for graduation, transfer, and employment in the building industry fields will be able to identify the nexus between the building activities and the health of the environment.</p>
<p>Course Objectives:</p>	<ol style="list-style-type: none"> 1. Identify the building activities that contribute to carbon emissions and resource waste. 2. Explain the professional roles that engage in sustainable measures to minimize building impacts. 3. Recognize the steps that lead to mitigation measures for a more sustainable building outcome. 4. Understand the principles and processes that can lead to sustainable solutions. 5. Recognize the barriers and trade-offs that may prevent implementation of sustainable measures. 6. Demonstrate knowledge of the different levels of governance that regulate building activities.
<p>Major Topics:</p>	<p>I. Overview of Sustainable Design (2 hours, lecture)</p> <ol style="list-style-type: none"> A. The defining of sustainable design within the built environment B. The link between energy consumption and climate C. Terminology: defining conventions, processes, and terms <p>II. The Urban Built Environment (2 hours, lecture)</p> <ol style="list-style-type: none"> A. Urban ecology as it relates to the environment and resource conservation B. Buildings, infrastructure, and global populations C. Construction to demolition: the building life cycle <p>III. Impacts of the Building Sector (3 hours, lecture)</p> <ol style="list-style-type: none"> A. Understanding the linkages between the built and natural environments B. Carbon emissions, construction debris, and demolition C. Quantifying and analyzing carbon emissions <p>IV. Sustainable Principles and Strategies (3 hours, lecture)</p> <ol style="list-style-type: none"> A. Global initiatives and other sustainable frameworks B. Tools and processes that guide sustainable development

	<p>C. Lifecycle Assessment and the Circular Economy</p> <p>V. Green Codes and Other Regulations (2 hours, lecture)</p> <p>A. Governing documents and the regulatory framework</p> <p>B. Codes, incentives, and initiatives</p> <p>C. Regulatory conflicts and workarounds</p> <p>VI. Sustainable Governance (2 hours, lecture)</p> <p>A. The role of various regulatory agencies</p> <p>B. Achieving the intended outcomes required by zoning codes</p> <p>VII. Barriers and Trade-Offs (3 hours, lecture)</p> <p>A. Factoring in costs, availability, durability, and aesthetics</p> <p>B. Compare and contrast sustainable alternatives</p> <p>C. Adjusting for uncertainty and “guess-timating”</p> <p>VIII. Sustainable Urban Development & Design (1 hour, lecture)</p> <p>A. Green infrastructure and development</p> <p>B. Low Impact Design (LID)</p>
Total Lecture Hours:	18
Total Laboratory Hours:	0
Total Hours:	18
Primary Method of Evaluation:	2) Problem solving demonstrations (computational or non-computational)
Typical Assignment Using Primary Method of Evaluation:	Draft a visual presentation (PowerPoint or Similar) that analyzes the impacts of construction materials and demonstrates potential mitigation measures for improved sustainable outcomes. In an oral presentation, present the visual presentation to the instructor for evaluation. Slides are to be submitted to the instructor.
Critical Thinking Assignment 1:	Research and write a three-page paper that focuses on the carbon emissions of a particular building material, and document the lifecycle from resource extraction to demolition. Submit research paper to the instructor.
Critical Thinking Assignment 2:	Prepare a comparison-contrast slide presentation that highlights the embodied carbon, costs, durability, and availability of a conventional material to that of a sustainable alternative. Slides are to be presented in class and submitted to the instructor.
Other Evaluation Methods:	
If Other:	
Instructional Methods:	
If other:	
Work Outside of Class:	Skill practice, Problem solving activity, Required reading, Written work (such as essay/composition/report/analysis/research)
If Other:	

Up-To-Date Representative Texts:	Hajer, Maarten (et al). <u>Neighbourhoods for the Future: A Plea for a Social and Ecological Urbanism</u> . Valiz, 1 st Edition. 2021
Alternative Texts:	
Required Supplementary Readings:	
Other Required Materials:	
Requisite	
Category	
Requisite course:	
Requisite and Matching skill(s): Bold the requisite skill. List the corresponding course objective under each skill(s).	
Requisite Skill:	
Requisite Skill and Matching skill(s): Bold the requisite skill(s). if applicable	Eligibility for English 1A
Requisite course:	<p>Ability to research, analyze, and summarize.</p> <p>Summarize, analyze, evaluate, and synthesize college-level texts.</p> <p>Ability to compose a written report.</p> <p>Write a well-reasoned, well-supported expository essay that demonstrates application of the academic writing process.</p>
Requisite and Matching skill(s): Bold the requisite skill. List the corresponding course objective under each skill(s).	
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Enrollment Limitations and Category:	
Enrollment Limitations Impact:	

Course Created by:	Marc Yeber
Date:	12/05/2023
Original Board Approval Date:	03/21/2024
Effective Term:	Fall 2024