

CALIFORNIA STATE POLYTECHNIC UNIVERSITY, POMONA  
ACADEMIC SENATE

GENERAL EDUCATION COMMITTEE  
REPORT TO  
THE ACADEMIC SENATE  
GE-010-156

ENV 1010 – Introduction to Design Theories and Methods

General Education Committee

Date: 10/28/16

Executive Committee  
Received and Forwarded

Date: 11/02/16

Academic Senate

Date: 11/09/16  
First Reading

BACKGROUND:

The College of Environmental Design introduced a new semester length course for GE Area E.

RESOURCES CONSULTED:

Faculty  
Department Chairs  
Associate Deans  
Deans  
Office of Academic Programs

DISCUSSION:

The GE Committee reviewed the ECO for this course and found it to satisfy the GE SLO's and other requirements of GE Area E.

RECOMMENDATION:

The GE Committee recommends approval of GE-010-156, ENV 1010 – Introduction to Design Theories and Methods.

## ENV - 1010 - Introduction to Design Theories and Methods (GE)

C. Course - New General Education\* Updated

### General Catalog Information

#### **\*\*READ BEFORE YOU BEGIN\*\***

College/Department

College of Environmental Design

Semester  
Subject Area

ENV

Semester 1010  
Catalog Number

Quarter Subject  
Area

Quarter Catalog  
Number

Course Title Introduction to Design Theories and Methods (GE)

Units\*

(2)

C/S  
Classification \*

C-01 (Large Lecture)

To view C/S Classification Long Description click: [http://www.cpp.edu/~academic-programs/scheduling/Documents/Curriculum%20Guide/Appendix C CS Classification.pdf](http://www.cpp.edu/~academic-programs/scheduling/Documents/Curriculum%20Guide/Appendix_C_CS_Classification.pdf)

Component\*

Lecture

<b>Instruction Mode*</b>	<input type="button" value="Asynchronous Local"/> <input type="button" value="Face-to-Face"/> <input type="button" value="Fully Asynchronous"/> <input type="button" value="Fully Synchronous"/> <input type="button" value="Hybrid w/Asynchronous Component"/> <input type="button" value="Hybrid w/Synchronous Component"/> <input type="button" value="Synchronous Local"/> <input type="button" value="Web-Assisted"/>
<b>Grading Basis*</b>	<input type="button" value="Graded Only"/>
<b>Repeat Basis*</b>	<input type="button" value="May be taken only once"/>
<b>If it may be taken multiple times, limit on number of enrollments</b>	<input type="button" value="1"/>
<b>Cross Listed Course Subject Area and Catalog Nbr (if offered with another department)</b>	
<b>Dual Listed Course Subject Area and Catalog number (If offered as lower/upper division or ugrd/grad)</b>	
<b>Choose appropriate type (s) of course(s)*</b>	<input type="checkbox"/> Major Course <input type="checkbox"/> Service Course <input checked="" type="checkbox"/> GE Course <input type="checkbox"/> None of the above
<b>General Education Area / Subarea*</b>	<input type="button" value="E"/>

To view the General Education SubArea definitions, click <http://www.cpp.edu/~academic-programs/scheduling/Documents/Ch.3-GeneralEducationProposals.pdf>.

### I. Catalog Description

<b>Catalog Description</b>	This foundational, First-Year Experience course introduces students to 'design thinking,' exploring the nature of design as a rational, problem-solving activity and the advantages and disadvantages of various systematic approaches. Includes typical modes of reasoning; philosophies
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and styles of design; and tools, techniques, and methods relevant in the design process.

**II. Required Coursework and Background**

**Prerequisite(s)**

Co-requisite: ENV1010L

**Corequisite(s)**

**Pre or  
Corequisite(s)**

**Concurrent**

### III. Expected Outcomes

**List the knowledge, skills, or abilities which students should possess upon completing the course.\***

By successfully completing the course students will be able to:

Demonstrate knowledge of the design process and its application in practice.

Think critically about the nature of wicked problems and their resolution.

a.

Demonstrate activities, techniques, or behaviors that promote intellectual growth (GE area E IV.b.)

Communicate orally, in writing, and graphically for various audiences (GE area E 1.a.)

a.

the nature of designing, various philosophies and styles of design, and

b.

particular difficulties in designing

Demonstrate understanding of the tools, techniques, and methods in the design process to generate and evaluate alternatives and make decisions.

Demonstrate knowledge about context, stakeholder participation, and user empathy in the design process and their roles in providing design resolutions that improve the environment and quality of life, including:

a.

Analyze the factors that contribute to individual well-being (GE area E IV.a.)

b.

Engage in communities (campus, regional, etc.)  
or participate in civic activities for the  
betterment of personal and public life (GE area  
E IV.c.)

**If this is a course  
for the major,  
describe how  
these outcomes  
relate to the  
mission, goals  
and objectives of  
the major  
program.**

**Explain how the  
course meets the  
description of  
the GE SubArea  
(s). Please select  
appropriate  
outcomes  
according to the  
GE Area/SLO  
mapping.**

This course satisfies GE Area E Requirements, as described in Chapter 4 of the *Curriculum Guide*, as it is 'designed to equip learners for lifelong understanding and development of themselves as integrated physiological, social, and psychological beings.' As a First-Year Experience course and introduction to design theories and methods, this course provides a foundation for understanding the nature of design, addressing 'wicked problems' that have social, environmental, and economic impacts on individuals and communities, and utilizing the methods and techniques for resolving them.

**Describe how  
these outcomes  
relate to the  
associated GE**

By successfully completing the course students will be able to:

**Learning  
Outcomes listed  
below.\***

Demonstrate knowledge of the design process and its application in practice.

Think critically about the nature of wicked problems and their resolution.

- a.  
Demonstrate activities, techniques, or behaviors that promote intellectual growth (GE area E IV.b.)

Communicate orally, in writing, and graphically for various audiences (GE area E 1.a.)

- a.  
the nature of designing, various philosophies and styles of design, and
- b.  
particular difficulties in designing

Demonstrate understanding of the tools, techniques, and methods in the design process to generate and evaluate alternatives and make decisions.

Demonstrate knowledge about context, stakeholder participation, and user empathy in the design process and their roles in providing design resolutions that improve the environment and quality of life, including:

- a.  
Analyze the factors that contribute to individual well-being (GE area E IV.a.)
- b.  
Engage in communities (campus, regional, etc.) or participate in civic activities for the betterment of personal and public life (GE area E IV.c.)



**General  
Education  
Outcomes\***

**Ia. Write effectively for various audiences**

**IVa. Analyze the factors that contribute to individual well-being (such as physical, mental, nutritional, emotional, intellectual, spiritual, financial, social, or environmental)**

**IVb. Demonstrate activities, techniques, or behaviors that promote intellectual or cultural growth.**

**IVc. Engage in communities (campus, regional, etc.) or participate in civic activities for the betterment of personal and public life.**

To view the mapping, click <https://www.cpp.edu/~academic-programs/Documents/GE%20SLO%20Mapping.pdf>

#### **IV. Instructional Materials**

Provide bibliography that includes texts that may be used as the primary source for instruction, and other appropriate reference materials to be used in instruction. The reference list should be current, arranged alphabetically by author and the materials should be listed in accepted bibliographic form.

**Instructional  
Materials\***

Austin Center for Design. *Wicked Problems, Problems Worth Solving* (downloadable text) <https://www.wickedproblems.com/read.php>

Meadows, Donatella (2008). *Thinking in Systems: A Primer*. (Chelsea Green Publishing).

Norman, Don (2013). *The Design of Everyday Things – Revised and Expanded Edition* (Basic Books).

Polya, George (2014). *How to Solve It. A New Aspect of Mathematical Method*. (Princeton).

Rith, Chanpory. 'Why Horst W.J. Rittel Matters.'  
<http://www.dubberly.com/articles/why-horst-wj-rittel-matters.html> (January 1, 2007)

Selections from:

Protzen, Jean-Pierre and David J. Harris (2010). *The Universe of Design: Horst Rittel's Theories of Design and Planning*. (New York: Routledge)

Simonsen, Jasper, ed., et al (2014). *Design Thinking, Design Theory* (Boston: MIT)

Up-to-date commentary sources specific to particular issues.

Faculty are encouraged to make all materials accessible. Indicate with an asterisk those items that have had accessibility (ATI/Section 508) reviewed. For more information, <http://www.cpp.edu/~accessibility>

#### **V. Minimum Student Material**

List any materials, supplies, equipment, etc., which students must provide, such as notebooks, computers, internet access, special clothing or uniforms, safety equipment, lockers, sports equipment, etc. Note that materials that require the assessment of a fee may not be included unless the fee has been approved according to University procedures.

**Minimum Student Material\*** Course Textbooks, access to the internet

## **VI. Minimum College Facilities**

List the university facilities/equipment that will be required in order to offer this class, such as gymnastic equipment, special classroom, technological equipment, laboratories, etc.

### **Minimum College Facilities\***

Computer Labs, Library, Course management software (e.g. Blackboard)

## **VII. Course Outline**

Describe specifically what will be included in the course content. This should not be a repetition of the course description but an expansion that provides information on specific material to be included in the class, e.g. lecture topics, skills to be taught, etc. This should not be a week-by-week guide unless all instructors are expected to follow that schedule.

### **Course Outline\***

The Reasoning of the Designer and the Planner; Designers' Self-Images

What is Design? The Nature of Design Projects; Doctrines of Creativity; Recurring Issues

Generating Alternatives: Morphological and Topological Methods

Values in Design and the Formation of Judgement

Evaluating Alternatives: Methods for Individuals and Groups

Anticipating the Context of Design: The Unknown User and Unknown Context

Conflict and Decisions: Consensus-Building and Decision-Making Techniques

First Generation Theories: Survey and Critique of Systematic Approaches

Orders of Magnitude; Procedural vs Prescriptive Theories

Design as Information Processing and Decomposition;  
Communication Systems

Second Generation Theories: Paradoxes of Rationality and Wicked Problems

Design as Argumentation

Designing for Others: Empathy and The Role of Participation

Design as Reflection-in-Action

### **VIII. Instructional Methods**

**Describe the type(s) of method(s) that are required or recommended for the instruction of this course (lectures, demonstrations, etc.). Include any method that is essential to the course, such as the use of particular tools or software.**

#### **Instructional Methods\***

A variety of instructional methods will be used to help students achieve expected course outcomes. They include the following:

1. Lecture
2. Discussion of assigned reading
3. Small group activities
4. In class and online presentations
5. Student feedback on in class and online presentations

There may be a course management component (e.g. Blackboard) to this course. If so, students will be expected to check the course management site regularly, contribute to online discussions, and get course information and submit course work through the site.

**IX. Evaluation of Outcomes**

**Describe the methods to be used to evaluate students' learning, i.e. written exams, term papers, projects, participation, quizzes, attendance, etc.\***

Quizzes (QU), Discussion (DS), Short Papers or Analyses (SP), Design Exercises (DE), Design Projects (DP), Term Papers (TP), and Presentations.

**Describe the meaningful writing assignments to be included.\***

5 short analytical papers. After participating in each of the five design exercises, each student will write a paper of 800-1000 words. The exercise and subsequent papers will focus on resolving a design problem of the student's choosing related to the environmental design disciplines.

The group term project will include a written report of 10-15 pages and a presentation to be delivered either in class or online. The assignment will bring students together around a common design problem, but each will be accountable individually (grade-wise) for preparing a substantive part of the project, report, and presentation.

**Discuss how these methods may be used to address the course and program outcomes, as appropriate. Include or attach a matrix to align the evaluation methods to the outcomes.\***

	<b>Assessment too</b>	
<b>Learning outcome</b>		<b>Individual</b>

<p><b>Demonstrate knowledge of the design process and its application in practice</b></p>	<p><b>QU (2 IC or OL)</b></p>
<p><b>Think critically about the nature of wicked problems and their resolution</b></p>	<p><b>DIS (5 IC or OL)</b> <b>SP (5)</b></p>
<p><b>Communicate orally, in writing, and graphically for various audiences, about the nature of designing and particular difficulties in designing</b></p>	<p><b>DE (5 IC of OL)</b> <b>SP (5)</b></p>
<p><b>Demonstrate understanding of the tools, techniques, and methods in the design process to generate and evaluate alternatives and make decisions</b></p>	<p><b>DE (5 IC or OL)</b> <b>SP (5 IC or OL)</b></p>
<p><b>Demonstrate knowledge about stakeholder participation and user empathy in the design process and its role in providing design resolutions that improve the environment and quality of life</b></p>	

**If this is a general education course, discuss how these methods may be used to address the associated GE Learning Outcomes listed below. Include or attach a matrix to align the evaluation**

**Courses in GE Area E shall fulfill the following General Education Learning Outcomes:**

- 1a. Write effectively for various audience.**
- 4a. Analyze the factors that contribute to individual well-being (such as physical, mental, nutritional, emotional, intellectual, spiritual, financial, social, or environmental)**
- 4b. Demonstrate activities, techniques, or behaviors that promote intellectual or cultural growth.**

methods to the outcomes.\*

4c. Engage in communities (campus, regional, etc.) or participate in civic activities for the betterment of personal and public life.

The following matrix shows what course attributes fulfill what GE SLOs for GE Area E:

GE Outcomes	Quizzes	Discussion	Short Papers or Analyses	Design Exercises	Design Projects	Ter Pap
<b>1 Acquire foundational skills and capacities.</b>						
a. Write effectively for various audiences.			X			X
<b>4 Develop capacities for continued development and lifelong learning.</b>						
a. Analyze the factors that contribute to individual well-being (such as physical, mental, nutritional, emotional, intellectual, spiritual, financial, social, or environmental)	X	X	X	X	X	X
b. Demonstrate activities, techniques, or behaviors that promote intellectual or cultural growth.	X	X	X	X	X	X
c. Engage in communities (campus, regional, etc.) or participate in civic activities for the betterment		X		X	X	

of personal and public life.					
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**X. This OPTIONAL Section is for describing Course/Department/College specific requirements.**

Department/  
College Required  
ECO Information  
(Optional)