ARIZONA STATE UNIVERSITY

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GENERAL STUDIES PROGRAM COURSE PROPOSAL COVER FORM

Courses submitted to the GSC between 2/1 and 4/30 if approved, will be effective the following Spring.

Courses submitted between 5/1 and 1/31 if approved, will be effective the following Fall.

(SUBMISSION VIA ADOBE.PDF FILES IS PREFERRED)

DATE 2/11/10

1. ACADEMIC UNIT: School of Architecture + Landscape Architecture

2. COURSE PROPOSED: ALA 240 Sustainable Design in the Built Environment 3

(prefix) (number) (title) (semester hours)

3. CONTACT PERSON: Name: Dan Hoffman Phone: 480-965-8757

Mail Code: 1605 E-Mail: Daniel.hoffman@asu.edu

4. ELIGIBILITY: New courses must be approved by the Tempe Campus Curriculum Subcommittee and must have a regular course number. For the rules governing approval of omnibus courses, contact the General Studies Program Office at 965–0739.

5. AREA(S) PROPOSED COURSE WILL SERVE. A single course may be proposed for more than one core or awareness area. A course may satisfy a core area requirement and more than one awareness area requirements concurrently, but may not satisfy requirements in two core areas simultaneously, even if approved for those areas. With departmental consent, an approved General Studies course may be counted toward both the General Studies requirement and the major program of study. **(Please submit one designation per proposal)**

Core Areas	Awareness Areas
Literacy and Critical Inquiry–L ☐	Global Awareness–G ☐
Mathematical Studies–MA ☐ CS ☐	Historical Awareness–H ☐
Humanities, Fine Arts and Design–HU ☒ -New	Cultural Diversity in the United States–C ☐
Social and Behavioral Sciences–SB ☐	
Natural Sciences–SQ ☐ SG ☐	

6. DOCUMENTATION REQUIRED.
   (1) Course Description
   (2) Course Syllabus
   (3) Criteria Checklist for the area
   (4) Table of Contents from the textbook used, if available

7. ***In the space provided below (or on a separate sheet), please also provide a description of how the course meets the specific criteria in the area for which the course is being proposed.***

This course uses historical and contemporary examples of the built environment such as dwellings, designed landscapes and cities to demonstrate how modern and pre-modern cultures have adapted to the natural and cultural environment relative to available energy and material flows. The relationship between energy flows and aesthetics through the presentation of historical and contemporary examples of architectural, urban and landscape designs. The concept of sustainability contains a critical judgement that assesses the value of an aesthetic experience relative to its sustainable performance. This question will be raised throughout the course through the comparison of the performance of a building or design from an energy perspective with its aesthetic or cultural value.

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CROSS-LISTED COURSES: ☒ No ☐ Yes; Please identify courses: _____

Is this amultisection course?: ☒ No ☐ Yes; Is it governed by a common syllabus? _____

Darren Petrucci _____

Chair/Director (Print or Type)

_____

Chair/Director (Signature)

Date: _____

Arizona State University Criteria Checklist for

HUMANITIES, FINE ARTS AND DESIGN [HU]

Rationale and Objectives

The humanities disciplines are concerned with questions of human existence and meaning, the nature of thinking and knowing, with moral and aesthetic experience. The humanities develop values of all kinds by making the human mind more supple, critical, and expansive. They are concerned with the study of the textual and artistic traditions of diverse cultures, including traditions in literature, philosophy, religion, ethics, history, and aesthetics. In sum, these disciplines explore the range of human thought and its application to the past and present human environment. They deepen awareness of the diversity of the human heritage and its traditions and histories and they may also promote the application of this knowledge to contemporary societies.

The study of the arts and design, like the humanities, deepens the student's awareness of the diversity of human societies and cultures. The fine arts have as their primary purpose the creation and study of objects, installations, performances and other means of expressing or conveying aesthetic concepts and ideas. Design study concerns itself with material objects, images and spaces, their historical development, and their significance in society and culture. Disciplines in the fine arts and design employ modes of thought and communication that are often nonverbal, which means that courses in these areas tend to focus on objects, images, and structures and/or on the practical techniques and historical development of artistic and design traditions. The past and present accomplishments of artists and designers help form the student's ability to perceive aesthetic qualities of art work and design.

The Humanities, Fine Arts and Design are an important part of the General Studies Program, for they provide an opportunity for students to study intellectual and imaginative traditions and to observe and/or learn the production of art work and design. The knowledge acquired in courses fulfilling the Humanities, Fine Arts and Design requirement may encourage students to investigate their own personal philosophies or beliefs and to understand better their own social experience. In sum, the Humanities, Fine Arts and Design core area enables students to broaden and deepen their consideration of the variety of human experience.

Revised October 2008

Proposer: Please complete the following section and attach appropriate documentation.

ASU - [HU] CRITERIA			
HUMANITIES, FINE ARTS AND DESIGN [HU] courses must meet *either* 1, 2, or 3 *and* at least one of the criteria under 4 in such a way as to make the satisfaction of these criteria **A CENTRAL AND SUBSTANTIAL PORTION** of the course content.			
YES	**NO**		**Identify Documentation Submitted**
☒	☐	**1.** Emphasize the study of values, of the development of philosophies, religions, ethics or belief systems, and/or aesthetic experience.	See attached syllabus: Course objectives - p. 1; Lectures - p. 2-3
☐	☐	**2.** Concerns the comprehension and interpretation/analysis of written, aural, or visual texts, and/or the historical development of textual traditions.	
☒	☐	**3.** Concerns the comprehension and interpretation/analysis of material objects, images and spaces, and/or their historical development.	See attached syllabus: Course Objectives - p. 1; Lectures - p. 2-3
☐	☐	**4.** In addition, to qualify for the Humanities, Fine Arts and Design designation a course must meet one or more of the following requirements:	
☐	☐	**a.** Concerns the development of human thought, including emphasis on the analysis of philosophical and/or religious systems of thought.	
☐	☐	**b.** Concerns aesthetic systems and values, literary and visual arts.	
☒	☐	**c.** Emphasizes aesthetic experience in the visual and performing arts, including music, dance, theater, and in the applied arts, including architecture and design.	See attached syllabus: Course Objectives - p. 1; Lectures - p. 2-3
☐	☐	**d.** Deepen awareness of the analysis of literature and the development of literary traditions.	
		THE FOLLOWING ARE NOT ACCEPTABLE:	
		• Courses devoted **primarily** to developing a skill in the creative or performing arts, including courses that are **primarily** studio classes in the Herberger College of the Arts and in the College of Design.	
		• Courses devoted **primarily** to developing skill in the use of a language – **However, language courses that emphasize cultural study and the study of literature can be allowed.**	
		• Courses which emphasize the acquisition of quantitative or experimental methods.	
		• Courses devoted **primarily** to teaching skills.	

Course Prefix	Number	Title	Designation
ALA	240	Sustainable Design in the Built Environment	HU

Explain in detail which student activities correspond to the specific designation criteria. Please use the following organizer to explain how the criteria are being met.

Criteria (from checksheet)	How course meets spirit (contextualize specific examples in next column)	Please provide detailed evidence of how course meets criteria (i.e., where in syllabus)
3. Concerns the comprehension, interpretation / analysis of material objects images and spaces and /or their historical development	The course uses historical and contemporary examples of the built environment such as dwellings, designed landscapes and cities to demonstrate how modern and pre-modern cultures have adapted to the natural and cultural environment relative to available energy and material flows.	See attached syllabus: Lectures 1.d-1.h, 2.c-2.f, 3.f-3.h
4c.Emphasizes aesthetic experience in the visual and performing arts including .... applied arts...and architectural design	The course will discuss the relationship between energy flows and aesthetics through the presentation of historical and contemporary examples of architectural, urban and landscape designs.	See attached syllabus: Lectures 1.d-1.h, 2.c-2.f, 3.f-3.h
1. Empahsizes the study of values ...and / or aesthetic experience.	The course is based upon the concept of sustainability and its relationship to the design of the built environment. The concept of sustainability contains a critical judgement that assesses the value of an aesthetic experience relative to its sustainable performance. This question will be raised throughout the course through the comparison of the performance of a building or design from an energy perspective with its aesthetic or cultural value.	See attached syllabus: Lectures1.a,1.i, 2.h, 3.f-3.h

SCHOOL OF ARCHITECTURE +
LANDSCAPE ARCHITECTURE
ALA 240

ARIZONA STATE UNIVERSITY
Dan Hoffman
Dan.hoffman@asu.edu

Course Title: Sustainable Design in the Built Environment.
A review of the physical principles used in the design of sustainable buildings, landscapes and urban environments.

Course Description

The purpose of the course is to provide an introduction to principles used by designers in the design of sustainable buildings, landscapes and environments. Topic areas include basic concepts energy transfer, thermal comfort, structural efficiency, the sustainable materials and landscape ecology. Case studies and historical examples from various cultures and regions of built projects are used to illustrate these concepts and provide an overview of current practices of sustainable design in architecture, landscape architecture and urban design.

Course Objectives

1. Provide an introduction to sustainable design as it applies to the aesthetic and historical understanding built environment typical of climatic / cultural regions.
2. Provide an understanding of energy flows on a macro and micro level as it applies to sustainable design of the built environment.
3. Provide an understanding of design principles in indigenous, low energy contexts
4. Provide an introduction to the principles of thermodynamics and energy transfer as applied to the concept of thermal comfort, the localized effect of energy transfer in a building.
5. Provide an introduction to the principle of structural efficiency and material properties applied to the design of culturally specific structures.
6. Provide an introduction to the physical dynamics of landforms (the interaction of land, sun wind and water) and the impact upon the design of sustainable buildings and sites.
7. Provide an introduction to the concept of biologic diversity and its application in the design of sites.
8. Provide an introduction to the concept of sustainability as it applies to the design of urban areas, noting the interaction between natural and cultural systems.

Course Requirements

The course takes the form of lectures and a series of hands-on investigations related to the physical principles discussed in the syllabus. A typical investigation will ask the student to document, draw or write about a physical phenomena related to a topic being discussed in the lecture in a "workbook." Three quizzes are given over the term along with a final exam.

Grading

The grade for the course is determined as follows: 50% workbook assignments, 50% quizzes and final exam.

Lectures:

Unit 1: Climate and Culture

1.a, Course Overview – The Concept of Sustainability
Definitions of sustainability and the nature of the built environment, reconciling technical and cultural ways of knowing

1.b, Principles of Thermal Transfer
How energy moves from higher to lower forms through convection, radiation and conduction

1.c, Principles of Thermal Comfort
How people stay comfortable in various climates

1.d, Climatic Regions
An introduction to the concept of global energy transfer and climatic regions

1.e, Cultural Flows
How global energy flows have influenced history, culture and dwelling

1.f, Climate and Culture I
The relationship between climate and culture as seen through the design of indigenous structures; arctic and temperate regions

1.g, Climate and Culture II
The relationship between climate and culture in pre-modern cultures as seen through the design of indigenous structure; desert and equatorial regions

1.h, Energy and Contemporary Buildings I
An understanding of contemporary buildings through the lens of energy use, the technical and cultural effects of cheap energy on the built environment

1.i, Energy and Contemporary Buildings II
The concept of a net-zero building; operational and embodied energy, visionary architecture of a sustainable future

Unit 2: Sustainable Structures and Buildings Materials

2.a, Why Buildings Stand Up
Basic principles of statics; stability and load transfer, tension, compression and shear

2.b, Why buildings Fall Down
The causes of structural failure, excessive and eccentric loads, buckling, stress and strain

2.c, Compressive Structures
Historical examples of massive, masonry structures

2.d, Tensile Structures
Historical examples of light weight, tensile based structures

2.e, Composite Structures I
Historical examples of wood structures

2.f, Composite Structures II
Historical and contemporary examples of steel and concrete structures

2.g, Materials and Embodied Energy
The concept of embodied energy, reuse and recycling of materials

2.h, Contemporary, Efficient Structures
Contemporary examples of structurally efficient buildings

Unit 3: Sustainable Landscapes

3.a, Geologic process and landform
An overview of basic geologic processes and their resulting landforms

3.b, Hydrology

Water and it effects on the landscapes and building sites

3.c, Micro-Climatic Effects I

Case studies demonstrating the effect of orientation, altitude, soil, planting and water on building sites- temperate regions

3.d, Micro-Climatic Effects II

Case studies demonstrating the effect of orientation, altitude, soil, planting and water on building sites- desert regions

3.e, Micro-Climatic Effects III

Case studies demonstrating the effect of orientation, altitude, soil, planting and water on building sites- tropical regions

3.f, Urban Landscapes I

Sustainable design of cities in temperate regions

3.g, Urban Landscapes II

Sustainable design of cities in desert regions

3.h, Urban Landscapes III

Visionary landscapes, sustainable futures