

Course Establishment Form Outline

Effective date: Winter/2010:

Division:	BEIT	Program/Dept:	Architecture Engineering & Sustainable Design
Course Number:	TDR 103	Credits:	4 Variable:
Course Title:	Energy Analysis for Building Information Modeling		
Inst. Intent:	11 Academic Transfer	CIP:	151304
	Fee: Yes <input checked="" type="checkbox"/> No	Type	CL-Computer Lab Fee

Degree/Certificate Requirement:	Yes <input checked="" type="checkbox"/>	No:
Name of Degree/Certificate:	Architecture Engineer & Sustainable Design Associates Of Applied Science Degree	
Distribution Requirement for AA/AS:		
Transfer Status to 4-year institution:	Yes	No: <input checked="" type="checkbox"/>
If yes, please describe:		
Course length:	Course length: 1 qtr., 11 wks.	Class Size: 24
Course Contact Hours:	Based on 11 Wks/qtr.	
Lecture: 44 hrs	Lab:	Clinical:
lecture = 4 credit		Other:
Prerequisite:	Yes:	No: <input checked="" type="checkbox"/>
If yes, please describe:		
Required Placement Tests:	Yes	No <input checked="" type="checkbox"/>
If yes, please describe:		
Comments:		

Course Description:

Course continuation of TDR 102. Focus will be on building Life Cycle Assessment (LCA), Building for Environmental Economic Stability (BEES), building envelop considerations, and achievable green performance, use of green analysis software. Prerequisite: TDR 100, 101 and 102 or instructor's permission. Open lab. Computer lab fee.

Course Outcomes/Learning Objectives:

1. To develop introductory skills with computer hardware and software that analyzes sustainable structures.
2. To develop productive skills in the use of BIM analysis software.
3. To learn to model quality drawings that show building performance in association with the environment with accepted conventions and standards using BIM.

NSCC General Education Outcomes and/or Related Instructional Outcomes Met by Course:

1. Apply computer competency appropriate to general education and occupational goals.
2. Work and communicate effectively in groups.
(Note: Although possible with careful planning, it is difficult to significantly address more than two general outcomes in a five-credit college course)

Topical Outline and/or Major Divisions:

- I Introduction to TDR 103**
 - A. Course contents
 - B. Class procedures
 - C. Course objectives
- II Introduction to Equipment**
- III Introduction to Software**
 - A. Ecotect Analysis programs
 - B. The Analysis program - an overview
- IV Energy Analysis for Building Information Modeling**
 - A. Energy Sources
 - B. Carbon Emissions
 - C. Energy Efficiency
 - D. Solar Availability
 - E. Weather
 - F. Heat Island
 - G. Natural Ventilation
 - H. Indoor Air Quality
 - I. Water Efficiency
 - J. Water Use Estimates
 - K. Day lighting Potential
 - L. Day lighting
 - M. Solar and Shading
 - N. Acoustical Analysis
 - O. HVAC Sizing
 - P. Energy Required to Optimize Internal Air Quality
 - Q. Clash and interference detections
- V Energy Analysis of Completed Modeling Project in previous BIM classes**
- VI Evaluations**

Course Requirements (Expectation of Students):

Attendance, assignments, and quizzes as specified by the instructor.

Methods of Assessment/Evaluation:

To be determined by instructor.

Required Text(s) and/or Materials:

Autodesk Sustainable Design Curriculum, on-line,
http://students.autodesk.com/?nd=content_box_layout_view&layout_id=24

Supplemental Text(s) and/or Materials: Digitalia: Architecture and the Digital, the Environmental and the Avant-Garde, S. Hagan, Routledge, ISBN 0-415-39546-1 or 3

Outline Developed by:


Stephen Simmons

Date: 4/10

Revised by: Stephen Simmons



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