SED 120 Residential and Commercial Sustainable Design

CREDIT HOURS: 3.00

CONTACT HOURS: 45.00

COURSE DESCRIPTION:
This course will explore the holistic theory of sustainable design practices in residential and commercial dwellings. Students will assess the ecological advantages of producing sustainably designed and high efficiency buildings. During this course students will be introduced to green practices as well as LEED rating systems.

PREREQUISITES: NONE

EXPECTED COMPETENCIES:
Upon completion of this course, the student will be familiar with:
- Define sustainability as it relates to commercial and residential construction.
- Discuss the environmental, social and economical imperatives of sustainable building.
- Demonstrate an understanding of the ethical issues related to residential and commercial green building design.
- Demonstrate an understanding of the laws of thermodynamics and its relation to sustainable building.
- Interpret and discuss blueprints, plans and symbols.
- Exhibit an understanding of the ecology of living systems and its relation to sustainable building.
- Discuss the benefits of sustainably designed projects.
- Analyze and discuss the cost implications of sustainable building.
- Evaluate project sites and create strategies for salvaging damaged and Brownfield sites.
- Explicate the importance of utilizing alternative transportation.
- Demonstrate an understanding of water efficiency as it relates to landscaping, recycling waste water, water use reduction, rainwater reuse and grey water reuse from buildings.
- Illustrate comprehension in improving building energy efficiency through siting and systems.
- Discuss energy and the atmosphere as it relates to sustainable building.
- Demonstrate an understanding of the fundamentals of refrigerant management, energy performance and on site renewable energy resources.
- Illustrate comprehension in reusing existing building materials and stock.
- Illustrate comprehension in storage collection and reuse of recyclables.
- Demonstrate an understanding of the proper disposal of waste.
- Determine the types of building materials that are made from renewable resources.
- Explicate the importance of indoor air quality.
- Describe and discuss low-emitting materials.
- Describe and discuss the controllability of lighting and heating.
- Demonstrate an understanding of the LEED certification rating system.
ASSESSMENT METHODS:
Student performance may be assessed by examination, quizzes, case studies, oral conversation, group discussion, oral presentations. The instructor reserves the option to employ one or more of these assessment methods during the course.

GRADING SCALE:
90%-100% = A
80%-89.9% = B
70%-79.9% = C
60%-69.9% = D
<60% = E