

Faculty of Engineering & Technology

Elective 10 / Computer Applications for Architects 3

Information:

Course Code: ARC E10 Level: Undergraduate Course Hours: 3.00- Hours

Department: Department of Architectural Engineering

Area Of Study:

This course aims at::

Ænhance the student's awareness of the responsive and interactive architecture.

Aet student experience the process of making designs according to parametric design principals.

A rain the student to use some advanced CAAD systems such as Rhino and Grasshopper.

Description:

Responsive Architecture, Interactive Environments, Physical Computing, Parametric Design, Digital Fabrication and CNC, using Arduino, Rhino and Grasshopper Applications with models..

Course outcomes:

a. Knowledge and Understanding: :

- 1 a1. Identify some CAAD programs outcomes and capabilities.
- 2 a2. Define the process of making designs according to controlling parameters.
- 3 a3. Identify the concepts of responsive and interactive architecture.

b.Intellectual Skills::

- 1 b1. Visualize graphical forms in three dimensions.
- 2 b2. Choose proper tool for making parametric designs.
- 3 b3. Analyze architectural forms into controlling parameters.

c.Professional and Practical Skills::

- 1 c1. Build architectural digital parametric models using Rhino and Grasshopper applications.
- 2 c2. Prepare digital files ready to be used with CNC technology.

d.General and Transferable Skills::

- 1 d1. Do simple Search for information.
- 2 d2. Manage time to meet deadlines.

Course Topic And Contents:

Topic	No. of hours	Lecture	Tutorial / Practical
Interactive & responsive architecture.	8	4	4
Using Arduino boards	8	4	4



Course Topic And Contents :			
Topic	No. of hour	s Lecture	Tutorial / Practical
Parametric Design: definition and concepts	8	4	4
Modeling using Rhino.	12	6	6
Modeling using Grasshopper.	12	6	6
CNC technology	12	6	6

Teaching And Learning Methodologies:

Lecture

Lab Work

Course Assessment :						
Methods of assessment	Relative weight %	Week No	Assess What			
Assignments/Lab work	20.00					
Final exam	40.00					
Midterm 1	15.00					
Midterm 2	15.00					
Participation	10.00					

Recommended books:

1. Text Book:

Manuals and online help of Rhino and Grasshopper applications.

- 2. Students Lecture Notes
- 3. Handouts