

CA19114: DESIGN CREATION – TECTONICS

Effective Term

Semester A 2022/23

Part I Course Overview

Course Title

Design Creation – Tectonics

Subject Code

CA - Civil and Architectural Engineering

Course Number

19114

Academic Unit

Architecture and Civil Engineering (CA)

College/School

College of Engineering (EG)

Course Duration

One Semester

Credit Units

6

Level

A1, A2 - Associate Degree

Medium of Instruction

English

Medium of Assessment

English

Prerequisites

Nil

Precursors

Nil

Equivalent Courses

CA19111 Integrated Studio - Small-Scale Buildings (Topic 1); CA19121 Integrated Studio - Small-Scale Buildings (Topic 2); CA19131 Integrated Studio - Small-Scale Buildings (Topic 3)

Exclusive Courses

Nil

Part II Course Details

Abstract

This course aims to enhance students' understanding of the principles of architectural creation – tectonics. The emphasis is on introducing elements of design in Architecture and exploring the underlying principles of arts and science in Architectural design. Through small-scale projects, students will explore the mechanisms of architectural design creation.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Identify elements of tectonics in Architecture.		x		
2	Understand and apply design considerations of users, functions, environment and technology in a design project.			x	
3	Combine simple structural systems with the spatial and functional aspects of architectural design.			x	
4	Produce design proposals to satisfy basic social and technical requirements of a project.				x
5	Produce solutions for various problems relating to small-scale building design on a specific topic.				x

A1: Attitude

Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability

Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to real-life problems.

A3: Accomplishments

Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

Teaching and Learning Activities (TLAs)

TLAs	Brief Description	CILO No.	Hours/week (if applicable)
1	Design Project	Design Project engages students in the production of an integrated proposal for a building design of a specific topic in response to a set of constraints and requirements. Teaching and learning are conducted through regular studio classes in which students will develop their individual design proposals under the facilitation of a studio tutor.	1, 2, 3, 4, 5 6 hrs / week

Assessment Tasks / Activities (ATs)

ATs	CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	Assignments	1, 2, 3, 4, 5	80
2	Portfolio	1, 2, 3, 4, 5	20

Continuous Assessment (%)

100

Examination (%)

0

Additional Information for ATs

Students must attain a minimum mark of 30 in all assessment components AND an overall mark of 40 to pass the course.

Assessment Rubrics (AR)**Assessment Task**

Assignments

Criterion

- 1.1 Demonstrate understandings of elements of tectonics in Architecture, through attempt to incorporate elements of tectonics in the design project.
- 1.2 Demonstrate understandings and incorporate design considerations of users, functions, environment and technology.
- 1.3 Ability to combine simple structural systems with the spatial and functional aspects of architectural design.
- 1.4 Produce design proposals to satisfy basic social and technical requirements of a project of a specific topic.
- 1.5 Formulate solutions relating to small-scale building development of a specific topic.

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal level

Assessment Task

Portfolio

Criterion

2.1 Compile a comprehensive document that presents clearly the synthesis and design process of the creative solution using text, graphics and other presentation techniques.

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal level

Part III Other Information

Keyword Syllabus

- Design: Anthropometrics and ergonomic; Scale and proportions; Form and function;
- Design integration: Design to incorporate general considerations of users, functions, environment and technology;
- Communication: Basic graphics, models and oral presentation.

Reading List

Compulsory Readings

	Title
1	Clark, R.H. and Pause M. (1996). Precedents in architecture (2nd ed). New York: Van Nostrand Reinhold.
2	Ching, F. (2012). A visual dictionary of architecture. (2nd ed). New Jersey: John Wiley & Sons, Inc.
3	Foster, J.S. (2007). Structure and fabric part 1 (7th ed). New York: Pearson/Prentice Hall.
4	Ching, F. (2010). Building Construction Illustrated. (4th ed). New Jersey: John Wiley & Sons, Inc.
5	Unwin, S. (2003). Analysing architecture (2nd ed). New York: Routledge.

Additional Readings

	Title
1	Nil