

GE1332: BEAUTY OF ANCIENT CHINESE ARCHITECTURE

Effective Term

Semester A 2024/25

Part I Course Overview

Course Title

Beauty of Ancient Chinese Architecture

Subject Code

GE - Gateway Education

Course Number

1332

Academic Unit

Architecture and Civil Engineering (CA)

College/School

College of Engineering (EG)

Course Duration

One Semester

Credit Units

3

Level

B1, B2, B3, B4 - Bachelor's Degree

GE Area (Primary)

Area 3 - Science and Technology

Medium of Instruction

English

Medium of Assessment

English

Prerequisites

Nil

Precursors

Nil

Equivalent Courses

Nil

Exclusive Courses

Nil

Part II Course Details

Abstract

Modern buildings may not be better than ancient ones. In July 2012, Beijing was hit by the biggest downpour in 61 years. Most of central Beijing suffered from serious flooding up to 3 metres. However, the Forbidden City, which was built more than 500 years ago locating at the heart of Beijing, remained dry. This course will introduce the ingenious technology of ancient Chinese architecture from a building services point of view. The intelligence of ancient Chinese applied in indoor air quality with adequate natural ventilation, thermal and visual comfort, drainage, acoustics, daylighting utilization and fire protection will be discussed with examples such as the Forbidden City. By learning the ancient architecture, students will be motivated to set up a comprehensive criteria system to appreciate current architecture. By using individual criteria system, students will be able to evaluate architecture from the perspectives of function, culture, geography, politics and social issues, combining their own professional disciplines. The knowledge consists of three sections, which is delivered by using general concepts, theories, cases, and videos. At the end of learning, students will present posters to generalize the knowledge into practical case analysis.

Course Intended Learning Outcomes (CILOs)

CILOs		Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Identify ancient Chinese building structures, which can improve quality of life in scientific and cultural perspective.	30	x	x	
2	Evaluate the performance of ancient Chinese building from perspectives of function, culture, geography, politics and socio-science.	40	x	x	
3	Propose criteria system to criticize modern buildings	30	x	x	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.

Learning and Teaching Activities (LTAs)

LTAs		Brief Description	CILO No.	Hours/week (if applicable)
1	Lectures	In each lecture (referring to Keyword Syllabus), students will be exposed to concepts, theories, cases and videos.	1, 2, 3	2

2	Interactive Case Scenario Analysis	Students will learn from case studies. In addition, discussions among all participants in class help students to deeply absorb the knowledge.	1, 2, 3	1
3	Group Debate	Student will engage in group debates to generalize scientific and cultural knowledge into different prospective. At the same time, students will be given a chance to polish their capability in logic thinking and aggressive defence.	1, 2, 3	1

Assessment Tasks / Activities (ATs)

ATs		CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	Group Assignment	1, 2, 3	30	
2	Individual Assignment 1	1, 2, 3	30	
3	Individual Assignment 2	1, 2, 3	40	

Continuous Assessment (%)

100

Examination (%)

0

Assessment Rubrics (AR)**Assessment Task**

Individual Assignment 1

Criterion

1.1 Capability to use interdisciplinary perspective in appreciating the beauty of ancient Chinese architecture

1.2 Capability to create new perspective in appreciation

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal levels

Assessment Task

Individual Assignment 2

Criterion

- 2.1 Capability to provide reasonable and appropriate evidences in supporting criteria
- 2.2 Capability to describe and explain evidences and reasons
- 2.3 Capability to present the work in a structured, academic, logic and well-organized way

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal levels

Assessment Task

Group Assignment

Criterion

- 3.1 Capability to apply learnt knowledge in appreciating the beauty of modern architecture
- 3.2 Capability to create new perspective in appreciation
- 3.3 Capability to provide reasonable and appropriate evidences in supporting criteria
- 3.4 Capability to describe and explain evidences and reasons
- 3.5 Capability to present the work in a structured, academic, logic and well-organized way
- 3.6 Capability to make collaborative group work

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal levels

Part III Other Information

Keyword Syllabus

Section One: Scientific and Cultural analysis of structures

Traditional materials

Heating and ventilation systems

Drainage systems

Acoustic measures

Lighting designs

Fire safety concerns

Section Two: Geographical context

Beijing--Siheyuan, Hutong and Courtyard

FuJian--Tulou

Anhui--Residence

Shanxi--Cave Dwellings

Shanxi--Doors

SiChuan--Residence

Hunan--Stilted building

Hakka--Group House

Section Three: Political impacts

Architecture and Hierarchy

Architecture and Numbers

Architecture and Fengshui

Voice of Architecture

Architecture and Colors

Reading List

Compulsory Readings

Title	
1	Cai, Y. X. (2011) Chinese architecture, New York: Cambridge University Press.
2	Chinese Academy of Science (1986) History and development of ancient Chinese architecture, compiled by Institute of the History of Natural Sciences, Science Press, Beijing.

Additional Readings

Title	
1	Chow, W.K. and Liu, F. (2003) "Outline of fire safety in the Qing Dynasty", International Symposium on Protection of Cultural Heritage Buildings from Fire, 6-7 April, Kyoto, Japan.
2	Ru, J. H, Peng, H.J., Zang, E. and Cui, S. (1998) Palace Architecture: Palace Architecture I, Germany: Springer Verlag GmbH.
3	Wang, P.Y. (2008) Ancient Chinese Architecture, Beijing: China Architecture and Building Press.
4	Wang, Q.J. (2011) Chinese architecture, New York: Better Link Press.
5	Vibhavari, J. (2011) Diversity in design: perspectives from the non-Western world, New York: Fairchild Books.

Annex (for GE courses only)

A. Please specify the Gateway Education Programme Intended Learning Outcomes (PILOs) that the course is aligned to and relate them to the CILOs stated in Part II, Section 2 of this form:

Please indicate which CILO(s) is/are related to this PILO, if any (can be more than one CILOs in each PILO)

PILO 1: Demonstrate the capacity for self-directed learning

1, 2, 3

PILO 2: Explain the basic methodologies and techniques of inquiry of the arts and humanities, social sciences, business, and science and technology

1, 2, 3

PILO 3: Demonstrate critical thinking skills

1, 2, 3

PILO 4: Interpret information and numerical data

1, 2, 3

PILO 6: Demonstrate effective oral communication skills

1, 2, 3

PILO 10: Demonstrate the attitude and/or ability to accomplish discovery and/or innovation

1, 2, 3

B. Please select an assessment task for collecting evidence of student achievement for quality assurance purposes. Please retain at least one sample of student achievement across a period of three years.

Selected Assessment Task

Report