UNIVERSITY of NICOSIA

Course Syllabus

Course Code	Course Title	ECTS Credits
ARCH-431	Advanced Building Technology	4
Prerequisites	**Department**	**Semester**
ARCH-212/ ARCH-312	Architecture	Fall/Spring
Type of Course	**Field**	**Language of Instruction**
Elective	Architecture	English
Level of Course	**Lecturer(s)**	**Year of Study**
1st Cycle	Markella Menikou	4th
Mode of Delivery	**Work Placement**	**Corequisites**
Face to face	N/A	N/A

Course Objectives:

The main objectives of the course are to:

- Deepen the understanding of Materials, Construction, Structures, Environmental modification and other technological concerns in the study and making of built form.
- Provide students the opportunity to build on the introductory knowledge base they have been introduced to via the previous technology modules (prerequisites) and to develop expertise in selected areas of advanced building technology.
- Explore in depth selected technological topics. These may vary from year to year, whereas innovation and invention will always be at the core of the course.
- Study the interdisciplinary context within which technological innovation takes place.
- The course will be supported by the department's growing infrastructure of physical workshop facilities and computational laboratories. The course will also be supported by visiting specialists.

Learning Outcomes:

After completion of the course students are expected to be able to:

1. Comprehend and evaluate the principles underlying performance criteria in construction.
2. Critically interrelate the manufacturing processes, fabrication, properties of building materials and the principles of environmental modification as applied in building construction.
3. Demonstrate advanced analytic capability and develop their 'language of construction'.
4. Identify in-depth research methodologies including workshop experiments with physical and digital prototypes.
5. Demonstrate the ability to learn how to learn, a vital skill for the acquisition of technological knowledge.
6. Formulate contemporary building technology strategies and realisation techniques.

7. Appraise and criticize conventional technology applications, through innovation and invention.

Course Content:

Course Contents will vary from year to year. These may include:

- Principles underlying performance criteria in building construction
- Materials, processes and fabrication techniques
- Repetition: degree of duplication / economy of production
- Dimensional co-ordination: manufacturing tolerances / precision of fit/ standardisation/ modularisation
- Handling: component dimensions / manufacture>transportation>assembly
- Prefabrication
- The process of construction and the concept of Buildability
- Rules for detail
- Degree of conversion
- Time: weathering / wear
- Sensual qualities of construction
- Acoustics
- Advanced lighting
- Technology transfer
- Construction automation/robotics
- material testing and innovation-smart/composite materials
- Innovative construction techniques
- Components invention and patenting
- Sustainability/environment/climatic modification
- CAD/CAM
- Building performance simulation tools

Learning Activities and Teaching Methods:

Teaching methodologies will vary depending on the exact contents of the course. They may include:
Lectures, case studies, seminars, presentations, workshops, hands-on making, laboratory testing

Assessment methods:

Assessment methodologies will vary depending on the exact contents of the course. They may include: Projects, Coursework, Midterm Exams, Final Exams

Required Textbooks / Readings:

Readings will vary depending on the exact contents of the course.