

## CAAD/CAM III

Semester 5

This course will expose students to several stages of architectural document development through Building Information Modelling (BIM). The course will build an introductory knowledge of BIM and will teach students how to create drawings in a professional setting. Topics will cover a brief introduction of BIM in architecture, family browsing, modelling, drafting, and using BIM in the production of drawings during the different project phases.

The students understand what Building Information Modeling (BIM) is and will know the key differences between BIM and CAD. They are able to introduce integrated data workflows in a BIM design process and understand the interface of Revit software (family browsing, modelling, drafting, scheduling, etc.). They also are able to illustrate the file structure of Revit software (LOG files, system families, external families, etc.), comprehending families in Revit software and their role in the parametric nature of BIM.

Code	No.	Course	L	E	P	ECTS
ARCH	501	CAAD/CAM III	1	0	2	3

## Steel Structures Design

Semester 5

Steel structures represent a major portion of the construction industry. This course provides the students with the basic knowledge about the choice of the appropriate structural system, design of structural elements under various straining actions, design of beams, design of beam-columns and design of all the structural connections. Introduction of the ASD and LRFD design philosophies is also covered by the course.

Students are able to choose and dimension the appropriate structural system for buildings and special halls. The students shall be able to choose the steel cross-section and satisfy all the design requirements based on the Egyptian code of practice. Analysis and design cover all the structural elements, under the applied dead and live loads. The students know how to develop complete design drawings with all the connection details.

Code	No.	Course	L	E	P	ECTS
ARCH	502	Steel Structures Design	1	2	0	3

## Theory of Architecture II

Semester 5

The course introduces different types of design methods and building typologies. It covers a wide range of issues related to the formulation and analysis of architectural design program and brief, as well as the synthesis of the design concept and methods of evaluation and design development. The course aims at enhancing the students' analytical abilities while developing design concepts and selecting suitable approaches for solving architectural problems. The course presents different techniques in generating creative ideas in architectural design.

Students develop their analytical abilities and find suitable approaches for solving architectural problems.

Code	No.	Course	L	E	P	ECTS
ARCH	503	Theory of Architecture II	2	0	0	3

## Building Technology IV

Semester 5

A complex design project plays a major part in this course, requiring creative use of the principles and information given in previous building technology courses to solve a particular problem, relating to energy consumption, lighting, acoustics and technical installations. The students will be asked to propose and assess innovative building designs, technologies and operating schemes that will yield a building of sustainable design, comfortable indoor climate and adequate use of contemporary building materials, elements and technologies.

The students are able to apply their acquired knowledge to solve an architectural assignment by designing and constructing a building including technical and construction details, integrating technical systems to provide living comfort and ensure environmental responsibility.

Code	No.	Course	L	E	P	ECTS
ARCH	504	Building Technology IV	1	5	0	8

## Design Studio III

Semester 5

This studio requires students to design a project that integrates different disciplines: urban design, building physics and building construction. The assigned project, which is developed in teams, requires students to consider issues of environmental responsibility and building construction at a higher level of complexity than previously encountered and in a more comprehensive manner (library, museum or any public building of similar scale).

Students are able to apply the knowledge, understanding, experience and skill gained in previous courses and to translate them into architectural solutions to complex design problems. They should gain insight into issues of contextualism in design, while applying their knowledge of building technology and strengthening design communication skills.

Code	No.	Course	L	E	P	ECTS
ARCH	505	Design Studio III	1	6	0	12