



## Course Syllabus

<b>Course Code</b>	<b>Course Title</b>	<b>ECTS Credits</b>
ARCH-111	Introduction to Structures	4
<b>Prerequisites</b>	<b>Department</b>	<b>Semester</b>
None	Architecture	Fall
<b>Type of Course</b>	<b>Field</b>	<b>Language of Instruction</b>
Required	Architecture	English
<b>Level of Course</b>	<b>Lecturer(s)</b>	<b>Year of Study</b>
1 <sup>st</sup> Cycle	Dr. Tonia Sophocleous Lemonari	1 <sup>st</sup>
<b>Mode of Delivery</b>	<b>Work Placement</b>	<b>Corequisites</b>
Face to face	N/A	

### Course Objectives:

The main objectives of the course are to:

- Introduce the principles of structural design.
- Develop a foundational knowledge of the structural physical quantities of strength and stability of structural systems.
- Explain the basic physical laws of structural bodies' motion.
- Implement the strategies of structural design to control the form of structures
- Apply structural principle through making 3d sculptural installations.
- Interpret the limitations that codes of practice imply for structural analysis

### Learning Outcomes:

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

1. Identify structural design fundamental principles
2. Illustrate an understanding of different structural behavior of basic elements
3. Construct physical models of simple structural composition of forms.
4. Compare basic forms of structural members by analysing state-of-the art case studies.
5. Recognize fundamental structural behaviour terminology

**Course Content:**

1. Collaboration between Architects and Engineers in relation to structural design
2. Stability and Strength
3. Loads
4. States of Stress
5. Forces, Movement, Levers, and Moment
6. Stability and Equilibrium
7. Working with Forces
8. Supports, Reactions and Restraint of Movement
9. Load Distribution

**Learning Activities and Teaching Methods:**

The teaching method in this course consists of lectures, Laboratory Activities, Individual and Group Work, Case Studies, Student Participation, Videos

**Assessment Methods:**

Projects (1, 2, 3) and Final Exam

**Required Textbooks / Readings:**

Title	Author(s)	Publisher	Year	ISBN
A Primer: structure for architects	by Ramsey Dabby and Ashwani Bedi	John Wiley & Sons Inc/	2013	978-0-470-90274-8

**Recommended Textbooks / Readings:**

Title	Author(s)	Publisher	Year	ISBN
Why Buildings Fall Down	by Matthys Levy & Mario Salvadori	W. W. Norton & Co	2002	978-0393311525
Structures or why things don't fall down	J.E.Gordon	Penguin Science	2003	978-0-14-013628-9
A Structures Primer	Harry F.Kaufman	Prentice Hall	2009	9780132302579

Structures, 6/E	Daniel Lewis Schodek	Prentice Hall	2013	9780131789395
Elementary Structures for Architects and Builders	Ronald E. Shaeffer	Prentice Hall	2006	9780130928771
Invention by Design How Engineers get from thought to think	Henry Petroski	Harvard University Press	1998	978-0674463684