

<Under construction!>

This course is originally intended to introduce recent building technologies, starting with concrete, and focusing on construction components and systems that are needed to complete a building. It is, however, undergoing a major revision, along with its prerequisite A242 Building Construction I. In doing so, we have decided to move away from the material-based sequence of learning- ie. Stone, Timber, Steel and Concrete- to follow building systems, starting from the ground up, and from the outside in. This has both a practical and educational advantage, in that it follows contemporary international systems of classification and documentation (mostly CSI and Sweets in the United States, which are increasingly adopted in the Middle East). This approach also lends itself better in problem solving of building construction.

The course will concentrate on the following areas of knowledge:

- Site planning and preparation- the exterior and ecological environment of a building
- Integrated design thinking: energy-efficient design, active and passive systems, daylighting, using renewable energy systems, "appropriate" technology, ...
- Building envelope, focusing on contemporary and advanced cladding systems- thermal insulation, condensation, heat loss and gain, etc...
- Floor systems
- Internal partitioning and proprietary modular systems of space planning
- Emerging trends in construction: new and unconventional material, thinking 'Green', movable and/or temporary, recyclable etc...

In conjunction with the above, the following will be covered to complete the detail-intensive sequence of learning that was initiated in A242:

- In-situ concrete: foundations, retaining walls, structural framing, architectural concrete...
- Composite wall construction using concrete masonry units (CMU) and other industrial units.
- Pre-cast concrete structure and enclosure.

Issues/ themes

In covering the above material, the course will hammer on the following:

- Construction phases- when do we decide on what?
- Labor and time- how these impact critical design decisions
- Code-driven design and technical decision-making
- Various actors in the construction process: Consultant, Builder, Supplier.
- Environmental responsibility in design, construction and building material.

Structure/ methodology

The course will alternate between two modes:

- Thursday sessions will predominantly be technical lectures covering the above material- this doesn't mean you can dose off!
- Tuesday sessions will involve thematic discussions based on readings, and various presentations of assignments. These include market-based research, realistic problem-solving projects and case studies. Come prepared.

Requirements

Active participation

This is not a course where you come to class to passively receive information. Lectures will be brief and strategic, aiming to guide you in how to retrieve and process a wealth of information that is multiplying and becoming more accessible through the Internet, digital documentation and product suppliers. Learning is increasingly about "how" rather than "what".

Basic references and further reading

- Building Construction Illustrated- 2nd or later edition (Van Nostrand Reinhold), F.D.K. Ching
- Fundamentals of Building Construction: materials and methods- 3rd edition (John Wiley & Sons, Inc.), E. Allen
- Ramsey/Sleeper Architectural Graphic Standards- student edition (John Wiley & Sons, Inc.), Hoke and Bassler, editors. This is available at AUB online and on CD-rom.
- The Construction Handbook: cost reference, building materials, labor and plant in Lebanon- 4th edition, InfoPro/ Lebanon Opportunities

Apart from the basic references above, different reading assignments will be issued periodically to focus on specific issues and themes that will be discussed in class and incorporated in subsequent exercises. Drop quizzes will happen.

Exercises and exams

Assignments and presentations 65%

Short quizzes and final exam 30%

Attendance and participation 5%