

Istanbul Technical University – Department of Architecture  
MIM 204E – Arch. Building Element Design, 22120  
Course Syllabus | 2019-2020 Spring Semester

Course Day and Hour : Wednesday 9:30-15:30
Course Room : N/A
Course Credit : 4
Course Web Site : -

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## Course Description

The main objective of the course is gaining experience in 'gathering information', 'analysis' and 'synthesizing by designing' steps to design and integrate functional elements of a particular building considering performance requirements, technological resources, and constraints.

To this end, three different building functions (i.e. family health centre, neighbourhood community centre, and café), four different cities (i.e. Kırklareli, Erzurum, Didim and Ordu), and two different structural system materials (i.e. reinforced concrete and structural steel) are selected for the two-storey small-scale building that will be designed and studied by the student groups. Total area of the buildings should not exceed 200-250 sqm.

Building functions and cities will be determined by drawing lots. Each building function in each city will be studied by a 4-person group determined by the students, where one of the pairs will study reinforced concrete, and the other will study structural steel as structural system material. Before designing each functional building element, each 4-person group has to collect theoretical information on that element, and has to make a market research to determine available technological resources. In mid-term submission 1, performances of both 4-person group and pairs forming it will be graded. In the remaining submissions, performances of pairs will be graded individually.

## Course Structure and Plan

### Course Plan

WEEK	DATE	TOPIC
1	12.2	Introduction, info. gathering on cities & building functions
2	19.2	Spatial design, structural system design
3	26.2	Structural system design
4	04.3	Floor system 1
5	11.3	Floor system 2 + Submission 1
6	18.3	Exterior wall + openings 1
7	25.3	Exterior wall + openings 2
8	01.4	Mid-term break
9	08.4	Exterior wall + openings 3
10	15.4	Roof system 1
11	22.4	Roof system 2
12	29.4	Stair 1
13	06.5	Stair 2
14	13.5	System drawings (envelope) + Submission 2
15	20.5	System drawings (envelope)

## Submission Contents

- Submission 1:**
- Structural system drawings (1/50 foundation plan & partial sections, 1/50 reflected ceiling plan of structure & partial sections of ground floor)
  - Architectural scheme design drawings (1/100 plans, sections, elevations – including structural members, and 3D model)
- Submission 2:**
- Construction project drawings (1/50 floor and roof plans including relevant information on all building elements studied, one 1/50 section, and 1/50 elevation of entrance facade)
  - Dossiers on elements and products
- Final submission:**
- All items listed for Submissions 1 & 2 (corrected versions)
  - System drawings (1/20 stair and envelope)
  - Details (1/5 joint details)

## Course Assessment

Final points\* = Submission 1 (15%) + Submission 2 (25%) + Final submission (50%) + Final exam (10%)

\* Items that will be graded and their rates may subject to minor changes during the term.

## Recommended Readings

### **Books**

- E. Allen, J. Iano, Fundamentals of building construction, materials and methods, John Wiley & Sons, Canada, 1990.  
Allen, E., Architectural Detailing; Function, Constructibility, Aesthetics, John Wiley and Sons, 1993.  
Blanc, A., Internal Components, Mitchell's Building Series, Longman, 1994.  
Ching, F. D. K., Building Construction Illustrated, Van Nostrand Reinhold, 1991.  
Chudley, R., Construction Technology I, II, III, IV, Longman Ltd., 1999.  
Foster, J. S., Structure and Fabric, Part 1, Mitchell's Building Series, Longman, 1996.  
Foster, J. S., Raymond Harrington, R., Structure and Fabric, Part 2, Mitchell's Building Series, Longman, 1996.  
Hoke J.R., Architectural Graphic Standards, John Wiley and Sons, New York, 1994.  
Rich, P., Dean, Y., Principles of Element Design, Architectural Press, 1999.  
Wakita, O., Linde, R.M., Professional Practice of Architectural Detailing, John Wiley & Sons, 1999.

- Binan, M., Ahşap Çatılar, Birsen Yayınevi, 1990.  
Binan, M., Ahşap Kapılar, Yapı Endüstri Merkezi, 1995.  
Binan, M., Doğramalar, Ahşap Pencere, Kipaş, 1985.  
Binan, M., Yapı Elemanları, Çizimler ve Açıklamalar, İTÜ Vakfı, 1986.  
Eren, Ö., Çelik Yapılar – Tasarım, Konstrüksiyon, Uygulama, Arı Sanat, 2007.  
İzgi, U., Kapılar - Hafif Bölmeler 1,2, YEM Yayın, 2003.  
Sarı, A., "Merdivenler, Düşey Sirkülasyon Araçları, Yapı Endüstri Merkezi, 1998.  
Toydemir, N., Bulut, Ü., Çatılar, Yapı Yayın, 2004.  
Toydemir, N. Vd., Yapı Elemanları Tasarımında Malzeme, Literatür, 2000.  
Türkçü, Ç., Yapım, Mimarlar Odası İzmir Şubesi Yayınları, 1997.  
Yücesoy, L., Temeller, Duvarlar, Döşemeler, Yapı Endüstri Merkezi Yayınları, 1998.

### **Journals**

DETAIL, Institut für internationale Architektur Dokumentation GmbH, München.

### **Catalogues**

- YAPI KATALOĞU, Yapı Endüstri Merkezi Yayın Bölümü, İstanbul.  
YAPI MALZEMELERİ KATALOĞU, TMMOB Mimarlar Odası İstanbul Büyükkent Şubesi, İstanbul.

### **Online resources**

- [www.insaat-yapi.gen.tr](http://www.insaat-yapi.gen.tr)  
[www.yapitr.com](http://www.yapitr.com)  
[www.yapirehberi.net](http://www.yapirehberi.net)  
[www.yem.net](http://www.yem.net)  
<http://products.construction.com/>