

Architectural design vi

2018-2019 spring

belkıs uluođlu

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course syllabus

## SCIENCE RESEARCH LABORATORY

### :: aim ::

The aim of this studio is to emphasize the conception of order and the search for wholeness in designing complex systems like architecture. It is mostly problematic for students to shape the architectural product, since those which gives shape to the building are greatly underestimated. To point out to those qualities of an architectural product, a building typology which needs great attention for the design of its spaces is chosen: a science research laboratory. While dealing with such a typology, the content will also allow us to reflect theories/ideas about order at a grand scale, theories that define the order of the universe at large.

### :: method ::

The studio will be based on four parts, following each other, and when necessary in a cyclic order:

Research, readings & seminar, precedent study, design.

We will be working in relationship with an academician from the field of physics, Prof. Dr. Emrah Kalemci, Sabancı University, Faculty of Engineering and Natural Sciences. We will be also visiting the nanotechnology lab of Sabancı University (SUNUM).

### :: spaces / program ::

The designed spaces will include

- laboratories,
- data center,
- common spaces,
- conference room and meeting spaces,
- offices,
- technical units,

mainly. The program will be developed by the student, based on the specific type of lab being designed.

Spaces which support research activities must be highly flexible and adaptable, with zones which can be configured to perform specific tasks. Spaces of different character and scale are needed for researchers whose numbers are ranging from individuals to small groups, and further to large group meetings. Specialist support space is also required, such as clean-room and protective spaces for work with high powered magnetics and lasers. Since recent

research is data-intensive, providing space with adequate access, power, and cooling is critical for experimental science buildings.

High technology buildings consume a considerable amount of energy. It becomes an ethical issue as well as an economical issue, for architects and designers of such buildings to design energy efficient buildings, even buildings that generate energy themselves. Conservation and enhancement of nature and natural sources are thus very critical issues and need to be considered as design parameters here.

One last issue is that technological spaces need to be designed with specific standards, including cabling, service spaces, security (conservation of data from hazards as well as computer/data security), climatic criteria, and construction details (please refer to the reading list).

**:: sources ::**

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<https://home.cern/>

<http://www.archdaily.com/251153/data-centers-anti-monuments-of-the-digital-age/>

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:: site ::



:: Quality of work ::

1. STRENGTH AND MATURITY OF ORDERING CONCEPTS

Development of new design ideas with a future vision that entails the form of developments thought to take place in the chosen part of the city/settlement. Interpretation of the various possible relations of the Program (as cross-section of practices) + Building + Site (understood as part of a settlement texture). Development of themes like building/work space, internal/external space, closed/open space, equipment/people, and ideas/their realization. Within this context, meanings assigned to Program, Building, and Site and their revelation.

2. LEVEL OF INTEGRITY OF THE PROPOSED IDEA WITH THE EXISTING ENVIRONMENT

a) SITE WITHIN THE ENVIRONMENTAL CONTEXT IN GENERAL

The level of consciousness, concerning the impact of the complex structure of settlements and of that specific part of the city at large. Systematic of the scenarios developed with emphasis on the interpretation of the program. The relationship of the new proposal with the existing place. The handling of borders/boundaries, closed/open spaces, safe/open zones relationships, character of the built environment, and other spatial themes that are considered.

b) SITE-BUILDING/SETTLEMENT RELATIONS

The relation of the building(s) to its immediate surrounding and to the city/settlement at a larger scale, its impact on this environment as a life-form, the change or the life it has introduced to this place.

3. SPATIAL QUALITY

a) IN THE SETTLEMENT AS A WHOLE

Care for spatial organization principles like boundaries, continuity, orientation, meaningfulness, conceivability, scale, etc.; appropriateness of the organization of practices/events; sensitivity to relations of building/ground, open/close spaces, buildings/landscaping, hard/soft elements; use of imagery.

b) IN INDIVIDUAL SPACES AS PART OF A WHOLE

Coherency of individual spaces with the ordering concepts of the design as a whole; convenience of spaces; organization of that specific space; use of furniture and experiment equipment; ergonomic – anthropometrical requirements; use of imagery; user capacity; flexibility.

c) IN THE ORDERING OF SPACES

Coherency of the ordering of spaces with the general design concept; relation of spaces with each other (adjacency/separateness); hierarchy of spaces; use of spaces; organization of spaces (architecturally); use of imagery; flexibility; safety.

d) IN THE INTEGRATION AND APPROPRIATENESS OF SPATIAL/FUNCTIONAL/CONCEPTUAL ISSUES

Appropriateness and coherency of space-event/activity-general design concept.

e) IN THE SERVICES

Care for health conditions, fire safety, security, power sources, communications; transportation; flexibility.

4. QUALITY OF OTHER SYSTEMS THAT MAKE UP A BUILDING

a) STRUCTURAL QUALITY (Spatial-Structural appropriateness)

b) CLIMATIC QUALITY

c) LIGHTING QUALITY

d) APPROPRIATENESS OF CHOICES MADE CONCERNING THE BUILDING ELEMENTS AND MATERIALS

e) QUALITY OF OTHER TECHNOLOGICAL INPUTS

5. QUALITY OF COHERENTNESS (1 & 2 & 3) AND INTEGRITY (2 & 3 & 4) OF THE SYSTEMS

**:: Submission Requirements ::**

At mid-term review: March 21st, 2019

Research findings. Interpretation of order in architecture.

Analytical/mapping work & concept development (in the form of drawings, models, schemes, etc.) - 1:2000 (if necessary other scales, e.g. 1:5000) to conceive the place within a general context.

Proposals concerning basic design decisions – 1:500.

Plan schemes, sections and 3-d's – 1:500

Final week review (same for final submission): May 16th, 2019

1) DESIGN INTENT

Ordering concepts / Basic premises – approach / Settlement decisions – environmental design characteristics / spatial organization – formal composition / Supporting systems: To be represented in written and/or graphical format.

2) ENVIRONMENTAL ANALYSIS

1:1000 and 1:2000 – 1:5000 (depends on your choice), connections and relation with the urban/settlement texture & systems; approach to the place (site), roads; characteristic environmental data; evaluation of its past and projections to the future (flexibility of development): To be represented in the form of sketches, photographs, models, maps; etc.

3) SITE PLAN/SECTION

1:500

. Orientation, scale; entrances, services, areas, and related zones to be specified; elevations.

. Section taken from an area characteristic of the site and its surroundings.

4) PLANS / SECTIONS / ELEVATIONS

1:200 (+ 1:100 – 1:50)

. Plans: voids and fills, module/axis/pattern/structure system, chimney/shafts should be clearly shown; names of spaces and when necessary materials should be specified; hierarchy of lettering should reflect the hierarchy of spaces; elevations should be shown; ground floor should include its near surrounding.

. Sections: should cut from characteristic areas that reflect the spatial structure; floor-roof system, relations with the ground, etc. should be readable; names of spaces and elevations should be specified.

. Elevations: front/rear standing elements, voids, curvilinear surfaces, etc. should be recognizable; detachment, toning, shading, and similar techniques can be used.

5) Structural, mechanical, and other decisions – SCHEMES/DETAILS

6) SKETCHBOOK (notes taken throughout the semester)

7) SUPPORTING MATERIAL

. Interior and exterior perspective drawings; other 3-D representations; photographs & collages; details; day/night appearances of the building(s); etc.

. Notes, sketches chosen from your sketchbook and among your other drawings that are thought to reflect your design process or your critical points of decision can be presented in a special format.

8) MODEL

1:500 / 1:200

Supporting models in different scales can also be submitted.

■ TO BE REPRESENTED ON STANDARD SHEETS – SAME DIMENSIONS.

■ MODELS SHOULD BE DURABLE, MATERIALS ON THEM SHOULD NOT STAIN.

■ ALL REPRESENTATIVE MATERIAL SHOULD REFLECT THE BASIC CONCEPT/STATEMENT OR CHARACTER OF THE BUILDING.

:: Evaluation ::

1. STRENGTH AND/OR ORIGINALITY OF THE CONCEPT (architecturally and conceptually)
2. THE LEVEL OF CONCRETIZATION OF IDEAS IN THE FORM OF AN ARCHITECTURAL PRODUCT OR THEIR ABILITY TO RESPOND TO PROBLEMS STATED WITHIN A CONSTRUCTED REALITY OR A SCENARIO.
3. THE LEVEL OF DEVELOPMENT/FULFILLMENT OF THE ARCHITECTURAL CONCEPT
4. THE LEVEL OF REPRESENTATIONAL QUALITY
5. PARTICIPATION (student's contribution to class meetings, to other students), ENTHUSIASM (felt for work)
6. ATTENDANCE

:: Grading standards ::

- A.. will be given for performance that is either a strong and/or an original concept, and which demonstrates both a mastery of the content discussed and its realization.
- B.. will be given to studies that shows a good understanding of the required content, and in which minor deficiencies are present.
- C.. will indicate that performance is at an acceptable professional level, although some deficiencies are evident.
- D.. will be given to studies with serious deficiencies, which is passable but not professionally acceptable.
- F will mean that performance is insufficient or inadequate, and does not demonstrate an understanding of the basic content of the course.

**:: Studio Policies ::**

- You are expected to attend all scheduled studio sessions and to participate in group reviews, crits, and discussions.
- You are expected to work in the studio.
- Work must be presented or handed in on time.
- Unexcused failure to display work at project reviews will be grounds for failure of the course.