

**Philadelphia University**  
**Faculty of Engineering**  
**Department of Architecture**  
**Second Semester (2021/2022)**

Course Syllabus

<b>Course Title:</b> Engineering Project 1	<b>Course code:</b> 0660581
<b>Course Level:</b> 5 <sup>th</sup> year	<b>Course prerequisite (s):</b> Architectural Design 7 & 120 Credit Hours.
<b>Lecture Time:</b> According to supervisors' schedules - online	<b>Credit hours:</b> 3

Academic Staff Specifics

Name	Rank	Office Number and Location	Office Hours	E-mail Address
Dr. Afnan Saleh (Academic Coordinator)	Assistant professor	61-316		<i>a.saleh@ philadelphia.edu.jo</i>

**Course description:**

This course is intended to familiarize students with fundamental issues of design researching in a meaningful way. The student would be able to identify the project according to a relevant problem, analyze and evaluate the context regarding the site and users, provide a proper architectural program, and effectively present results. The design research will follow the guidelines and parameters defined by the department and the supervisor.

**Course Content**

no	Course Topics	Learning outcome
1	Defining the problem	
2	Proposing a relevant project	
3	Site selection and analysis	
4	Relevant building codes and standards	
5	Relevant sustainability requirements	
6	Mapping the related users and stakeholders	
7	Preparing a comprehensive architectural program	
8	Presenting the results	

## **Course objectives:**

The aim is to be familiarized with architectural writing and research strategies, critical evaluation of source material, and methods of incorporating research in writing an academic thesis. The main objectives of this course are:

1. Ability to select and frame a thesis topic at the level of an undergraduate thesis by defining a relevant problem concerning the recent environmental, social, economic or cultural issues.
2. Ability to define site selection criteria to propose a proper context for an architectural intervention concerning the relevant issues.
3. Ability to define the related users and stakeholders and assess their needs and requirements
4. Ability to review the relevant building, standards and sustainability requirements and to assess their implications for the project.
5. Ability to structure a chosen topic in the context of a thesis.
6. Ability to define design assessment criteria steering an independent research based on individual criticism.

## **Course components**

### **Books;**

Selected sections from several books shown at the end of this syllabus

### **Support material;**

Visiting, site, users, architects and interviews

Online discussions using the teams website

### **Homework and laboratory guide:**

A series of take-home exams and assignments are designed to achieve the course objectives. Each assignment includes description, objective, learning outcomes, description and guiding instructions and the time of work to produce required online submittals. (*Important Note: Completion of all home works is paced with full coordination with the supervisor; however, all assignments have firm deadlines.*)

### **Homework and laboratory guide:**

A series of exercise sheets designed to achieve the course objectives. Each sheet includes exercise description, exercise objective, required instruments and materials, and guiding instructions and the time of work to produce required submittals.

## **Teaching methods:**

This course follows the procedure of preparing the graduation research project which depends on two main stages:

### **1. Defining the suitable graduation project for each student**

The academic coordinator of this course distributes an online form/ take home exam for defining the graduation project. The supervisor explains the vision and principles of choosing the graduation project shown on the form / take home exam for selecting the Graduation Project and defined on this syllabus. The form includes the main categories of the graduation projects defined for the following year, criteria for selecting the graduation project and procedure for submitting the form.

Each student follows and accurately fills in this exam and submits it with a poster (or any other approved mode of presentation) of the student's proposals of graduation project. By selecting the Graduation Project, through a committee defined by the department, each student has to stick with his selected graduation project during the preparation of the Graduation Project Research and Graduation Project courses.

#### 1. Preparing the Graduation Project Research.

##### *Criteria for Selecting the Graduation Project:*

- Selecting an actual and practical project that reflects the community requirements and development potentials.
- Students are not allowed to select a previously studied project during earlier levels.
- Students must select an appropriate graduation project to their design qualifications. (defined in the form / take home exam for selecting the graduation project)
- The selected graduation project must fit with **the student's capabilities of using architectural software.**
- After selecting the graduation project, student cannot change it. In rare cases, the head of the department must permit any change of the graduation project.

##### *Method of approving the graduation project:*

- Student selects his preferred graduation project according to the criteria of selecting graduation projects and submits the selection alternatives shown in the form / the take home exam online.
- A poster presentation explaining the selected graduation project, in terms of name, kind, value and preferred region and city; must be done to a committee defined by the department in order to get the approval for the selection of the Graduation Project.
- Students must discuss selection alternatives with the graduation project committee in order to get the approval for their selections or they cannot proceed in graduation project research.

### **2. Graduation project Research**

## **Program Learning Outcomes (PLO):**

This is a final program milestone course measuring all of the Program Learning Outcomes (PLO)

CP1 Professional Communication Skills

Ability to write, draw and speak effectively and use representational media appropriate for both within the profession and with the general public.

## **Course Learning Outcomes (CLO):**

### **Knowledge and understanding:**

- |                                                                                                                                     |
|-------------------------------------------------------------------------------------------------------------------------------------|
| 1. To understand the moral value of architecture and its relation to relevant issues related to society, environment or technology. |
|-------------------------------------------------------------------------------------------------------------------------------------|

### **Intellectual Skills**

- |                                                                                      |
|--------------------------------------------------------------------------------------|
| 2. Ability to collect, classify, and analyze data.                                   |
| 3. Ability to provide criteria of proposing and selecting a proper site.             |
| 4. Ability to define the related users and stakeholders and investigate their needs. |
| 5. Ability to create a design strategy                                               |

### **Professional and Practical Skills**

- |                                                                                                                                                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6. Ability to analyze the proposed site with reference to investigations, related regulations and related case studies.                                    |
| 7. Ability to analyze codes and regulations concerning green buildings, safety, and building types (hospitals, hotels, educational building ... etc.)      |
| 8. Ability to define the architectural program with reference to context, regulations, engineering systems, users' requirements, and related case studies. |

### **General and Transferable Skills**

- |                                                                                                                                                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9. Ability of good communication, organized thought, a high standard of grammar and language, clarity, conciseness and using the architectural jargon.     |
| 10. Ability to discuss formally with the related users and stakeholders and build a professional social contact for the favor of learning and socializing. |
| 11. Ability to produce formal presentations and make decisions under time pressure.                                                                        |
| 12. Ability of good presentation using proper media                                                                                                        |
| 13. Ability to refer to relevant literature effectively.                                                                                                   |
| 14. Ability to manage tasks and resources efficiently.                                                                                                     |

#	Course Learning Outcomes (CLO):	Program Learning Outcomes (PLO):	Learning Taxonomy	
			Understanding	Ability
1	To understand the moral value of architecture and its relation to relevant issues related to society, environment or technology.		<input type="checkbox"/> Understanding	<input type="checkbox"/>
2	Ability to collect, classify, and analyze data.		<input type="checkbox"/>	<input type="checkbox"/> Analyzing <input type="checkbox"/>
3	Ability to provide criteria of proposing and selecting a proper site.		<input type="checkbox"/>	<input type="checkbox"/> Evaluating <input type="checkbox"/>
4	Ability to define the related users and stakeholders and investigate their needs.		<input type="checkbox"/> Understanding	<input type="checkbox"/>
5	Ability to create a design strategy		<input type="checkbox"/>	<input type="checkbox"/> Evaluating <input type="checkbox"/>
6	Ability to analyze the proposed site with reference to investigations, related regulations and related case studies.		<input type="checkbox"/>	<input type="checkbox"/> Analyzing <input type="checkbox"/>
7	Ability to analyze codes and regulations concerning green buildings, safety, and building types (hospitals, hotels, educational building ... etc.)		<input type="checkbox"/>	<input type="checkbox"/> Applying <input type="checkbox"/>
8	Ability to define the architectural program with reference to context, regulations, engineering systems, users' requirements, and related case studies.		<input type="checkbox"/>	<input type="checkbox"/> Creating
9	Ability of good communication, organized thought, a high standard of grammar and language, clarity, conciseness and using the architectural jargon.		<input type="checkbox"/>	<input type="checkbox"/> Applying <input type="checkbox"/> Analyzing <input type="checkbox"/> Evaluating <input type="checkbox"/> Creating
10	Ability to discuss formally with the related users and stakeholders and build a professional social contact for the favor of learning and socializing.		<input type="checkbox"/>	<input type="checkbox"/> Applying <input type="checkbox"/> Analyzing <input type="checkbox"/> Evaluating <input type="checkbox"/> Creating
11	Ability to produce formal presentations and make decisions under time pressure.		<input type="checkbox"/>	<input type="checkbox"/> Applying <input type="checkbox"/>
12	Ability of good presentation using proper media		<input type="checkbox"/>	<input type="checkbox"/> Applying <input type="checkbox"/>

13	Ability to refer to relevant literature effectively.		<input type="checkbox"/> Understanding	<input type="checkbox"/> Applying <input type="checkbox"/> Analyzing <input type="checkbox"/>
14	Ability to manage tasks and resources efficiently.		<input type="checkbox"/> Remembering <input type="checkbox"/> Understanding	<input type="checkbox"/> Evaluating <input type="checkbox"/>

## Assessment instruments

Work for the class will include extensive reading, two short written exercises, a longer final paper, and three exams (two in-classes and the other a final). It is essential that all reading be completed in advance of each class. There will be an occasional pop quiz on the day's assigned readings. These readings will affect your class participation grade; if you don't do the readings, you can't participate in class discussion.

Allocation of Marks			
	Assessment Instruments	Wight	Mark
Mid Exam	chapter 1 & Thesis draft "chapters in progress"	30%	30%
Reports	Jury 1 &	15%	30%
	Thesis draft (all sections)	15%	
Final Exam	Thesis (electronic copy)	40%	40%
<b>Total</b>		<b>100%</b>	<b>100%</b>

Engineering student should have the ability of time management. Consequently, assignments and exercises should be submitted on time. A bonus of 5% of the students' grade will be awarded to those who submit their projects on time. A penalty of 5% of the students' grade will be inflicted for each day of delay (weekends included).

## Documentation and academic honesty

The students are trusted to act honorably. Those who are in violation of the academic honesty can be subjected to standard penalty for a first offence includes issuing "No Pass" or "No Credit" for the exercise in which the violation occurred. The standard penalty for a multiple violation includes "No Pass" or "No Credit" for the course. Examples of conduct which to be regarded as being in violation include unpermitted collaboration and representing the work of another as one's own work.

**Course academic calendar**

Week No.	Dates	Week No.	Writing	Presentation
1.	October	17-21	Define the sub-sections	
2.	October	24-28	Graduation project proposals ( <i>original, personal interest, small, realistic</i> )	Take home exam 01
3.	October November	31/10- 4/11	approving the graduation project Criteria of project selection Project definition: <ul style="list-style-type: none"> <li>• Introduction</li> <li>• Research approach</li> <li>• Literature review</li> </ul>	Assignment 01  <b>Major discussion:</b> <ul style="list-style-type: none"> <li>• Vision</li> <li>• Three proposals</li> <li>• Criteria of selection</li> <li>• Issue of design</li> <li>• Similar projects</li> <li>• Proposed locations and context</li> <li>• Criteria of site selection</li> <li>• Users and stake holder</li> <li>• Main functions</li> <li>• Estimated areas</li> </ul> Chapter one
4.	November	7-11	Site selection Criteria of site selection	Chapter1(project and site definition)  (first draft)
5.	November	14-18	Site analysis <ul style="list-style-type: none"> <li>• Data collection</li> <li>• Data analysis</li> </ul>	Chapter2: site analysis (first draft)
6.	November	21-25	User and stakeholder <ul style="list-style-type: none"> <li>• Definition</li> <li>• Needs and requirements</li> <li>• Program drafting</li> </ul>	Chapter 3: user, codes and regulations (first draft)
7.	November December	28/11- 2/12	Codes and regulations <ul style="list-style-type: none"> <li>• data collection</li> <li>• data analysis</li> <li>• program drafting</li> </ul>	
8.	December	5-9	Case studies <ul style="list-style-type: none"> <li>• data collection</li> <li>• data analysis</li> <li>• program drafting</li> </ul>	Chapter 4: case studies (first draft)

9.	December	12-16	Program <ul style="list-style-type: none"> <li>• Design approach</li> </ul>		
10	December	19-23	Project Precept	Assignment 02	Jury 1 Presentation <ul style="list-style-type: none"> <li>• project definition</li> <li>• site and context analysis</li> <li>• Issue of design</li> <li>• Case studies</li> <li>• program</li> <li>• precept</li> </ul> revised drafts (chapter 1,2,3,4)
11.	December	26-30	Final modifications Results and conclusions Revisions	Take home exam 2	Major discussion
12.	January	2-6	Thesis – editing		1.
13.	January	9-13	Thesis – editing	Prefinal (draft of all sections)	Major discussion
14.	January	16-20	Thesis – editing		
15.	January	23-27	Thesis – printing <i>According to department specifications</i>	Final submission	
16.	January February	30-2			

---

### **Expected workload:**

Course Hours including exam weeks: 34.3 hours; Study hours out of class: 26.5 hours; Homework / assignments/ research project: 18 hours; Readings: 7hours; Online (lectures, films, participation) and office follow up: 9hours

Total expected workloads = 97.8 hours

### **Attendance policy:**

Absence from lectures and/or tutorials shall not exceed 15% (=7 sessions). Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/Faculty shall not be allowed to take the final examination and shall receive a mark of zero for the



course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

## **References**

- Dechiara, Joseph and Hancock, John. 1973.** *Time-saver Standards for Building Types*. New York : McGraw-Hill, 1973.
- Desy, C. M. and Lasswell, T. 1990.** *Designing Places for People, a Hand Book on Human Behavior for Architects, Designer and Facility Managers*. New York : Whitney Library of Design, 1990.
- Fawcett, A. Peter. 1998, 2003.** *Architecture: design notebook*. s.l. : Architectural Press, 1998, 2003.
- Linda, Groat N. and Wang, David. 2013.** *Architectural Research Methods*. s.l. : Wiley, 2013.
- Neufert, Ernst and Neufert, Peter. 2002.** *Neufert's Architects' Data*. s.l. : Blackwell Publishing Professional, 2002.
- Spradley, James P. 1980.** *Participant observation*. New York : Holt, Reinehart and Winston, 1980.
- The American Institute of Architects . 2007.** *Architectural Graphic Standards*. s.l. : John Wiley & Sons Ltd., 2007.
- Zeisel, John. 1981.** *Inquiry by design: tools for environment-behavior research*. California : Brooks/Cole Publishing Company, 1981. ISBN 0-8185-0375-0.