TISHK INTERNATIONAL UNIVERSITY
FACULTY OF ENGINEERING
Department of ARCHITECTURE,
2021-2022 Fall
Course Information for ARCH 316 BUILDING SERVICES

Course Name:	BUILDING SERVICES

Code	Regular Semester	Theoretical	Practical	Credits	ECTS
ARCH 316	5	2	-	2	4

Name of Lecturer(s)-Academic Title:	Hassan Hassoon - PhD
Teaching Assistant:	Tara Sami
Course Language:	English
Course Type:	Main
Office Hours	Sunday 11:00-13:00
Contact Email:	hassan.hassoon@tiu.edu.iq Tel:1462
Teacher's academic profile:	Assistant Professor Lecturer in Architecture and Interior Design Departments Education: B.Sc University of London / Queen Mary College London UK 1972, MSc StrathClyde University Scotland UK 1981, PHd Bristol University England UK 1989
Course Objectives:	To introduce the Mechanical, Electrical ,Sanitary, drainage and water supply systems to the students. Also, how to consider them in designing a project and how are they working in a building ,how does they should affect on building and what should the designer do for building services so it will not cause damage of the building. It allows to know how an architect should connect with the mechanical, electrical and water supply engineer. Course Description: What building services means, tasks of building services, fluid flow in pipes, cold water pipe sizing design, hot water piping design To introduce the student the Mechanical, Electrical ,Sanitary, drainage and water supply systems. It allows to know how an architect should connect with the mechanical, electrical and water supply engineers.
Course Description (Course overview):	To introduce the student the Mechanical, Electrical ,Sanitary, drainage and water supply systems. How to consider them in designing a project and how are they working in building ,how does they should affect on building and what should the designer do for building services so it will not cause damage of the building. It allows to know how an architect should connect with the mechanical, electrical and water supply engineer.

COURSE CONTENT

Week	Hour	Date	Topic
1	2	4-7/10/2021	1-Introduction to services in buildings.
2	2	10-14/10/2021	Fundamental of fluid flow equations
3	2	17-21/10/2021	Fundamental of fluid flow equations
4	2	24-28/10/2021	fittings and fixtures symbols
5	2	31/10-4/11/2021	applications and materials of fittings
6	2	7-11/11/2021	Cold water supply applications
7	2	14-18/11/2021	Midterm Exam
8	2	21-25/11/2021	Pipe fittings
9	2	28/11-2/12/2021	Hot water system design
10	2	5-9/12/2021	Hot water supply Applications Symbols used in plumbing systems
11	2	12-16/12/2021	Storage tanks sizing,
12	2	19-23/12/2021	applications Sewage system design
13	2	26-30/12/2021	Single pipe system and two pipe system
14	2	2-5/1/2022	Rain water system design Fire fighting systems types and applications
15	2	9-13/1/2022	Final Exam

| 16 | 2 | 16-20/1/2022 | Final Exam |

COURSE/STUDENT LEARNING OUTCOMES

1	To learn how to design plumbing system
2	To understand and design cold water and hot water systems
3	To learn septic and cesspool
4	To design rain water network system
5	To understand the airconditioning systems

COURSE'S CONTRIBUTION TO PROGRAM OUTCOMES
(Blank : no contribution, I: Introduction, P: Profecient, A: Advanced)

	Program Learning Outcomes	Cont.
1	Apply problem-solving skills in the architectural context.	P
2	Demonstrate knowledge of architectural history, theory, and practice in solving architectural design problems.	
3	Utilize freehand drawing, architectural graphics, and model building skills in solving architectural design problems.	A
4	Utilize the computer as a tool in a wide range of documentation and presentation applications, using CAD, 3-D visualization and rendering, electronic image composition and editing software.	A
5	Apply knowledge of mathematics, science, engineering and technology in solving architectural design problems.	A
6	Develop designs that meet desired needs within realistic economic, social, political, and cultural constraints.	
7	Develop designs that fulfill the environmental, health & safety, and sustainability considerations.	P
8	Demonstrate team-working skills and show the ability to work collaboratively with various design teams involved in the building industry, and collaborate and negotiate with clients.	A
9	Demonstrate the necessary knowledge for applying laws, codes, regulations, standards and practices in relation to building construction systems.	A
10	Show their ideas through high quality drawing skills and artistic sense.	
11	Utilize their skills to address professional and ethical responsibilities, diversity and commitment to the work field.	
12	Suggest solutions and techniques for engaging in life-long learning and knowledge about contemporary issues.	

Prerequisites (Course Reading List and References):	1- Building services handbook, by Roger Greeno and Fred hall. 2- Building engineering services by David Chadderton. 3- Introduction to building services by Curd and Howard.
Student's obligation (Special Requirements):	ACADEMIC HONESTY, Plagiarism and academic dishonesty of any kind are not tolerated. Students found cheating, or involved in any form of academic dishonesty will receive an F grade in the grade. Academic dishonesty is not limited to simply cheating on an exam or assignment. It also includes the following: • Facilitating acts of academic dishonesty to others, • Submitting someone-else work or work previously used in other courses, without informing the instructor. • Receiving outside assistance without instructor's permission. • Including ideas from external sources (such as on the web or in the library) without proper referencing. • Providing assistance to students during exam.
Course Book/Textbook:	1- Building services handbook, by Roger Greeno and Fred hall. 2- Building engineering services by David Chadderton. 3- Introduction to building services by Curd and Howard.
Other Course Materials/References:	1- Building services handbook, by Roger Greeno and Fred hall. 2- Building engineering services by David Chadderton. 3- Introduction to building services by Curd and Howard. Websites using internet
Teaching Methods (Forms of Teaching):	Lectures, Presentation, Project, Assignments, , ,

COURSE EVALUATION CRITERIA

Method	Quantity	Percentage (%)
Participation	1	5
Quiz	2	7.5
Project	1	20
Midterm Exam	1	20
Final Exam	1	40
Total		**100**

Examinations: Essay Questions, True-False, Fill in the Blanks, Multiple Choices, Short Answers, Matching, , ,

Extra Notes:

ECTS (ALLOCATED BASED ON STUDENT) WORKLOAD

Activities	Quantity	Workload Hours for 1 quantity*	Total Workload
Theoretical Hours	16	2	32
Practical Hours	16	0	0
Final Exam	1	20	20
Participation	1	1	1
Quiz	2	3	6
Project	1	32	32
Midterm Exam	1		0
Total Workload			**91**
ECTS Credit (Total workload/25)			**3.64**

Peer review

Signature: Signature: Signature:

Name: Name: Name:

Lecturer   Head of Department   Dean