



University/Academy: Arab Academy for Science, Technology & Maritime Transport
Faculty/Institute: College of Engineering & Technology
Program: B.Sc. Architectural Engineering and Environmental Design

Form no. (12): Course Specification

1- Course Data

Course Code: AR 354	Course Title: Building Technology 4	Academic Year/Level: 3rd year / 6th semester
Specialization: Architecture	No. of Instructional Units Credit 3 Lecture 2 Tutorial 4	Prerequisite AR353

2- Course Aim

The course covers a wide range of finishing materials for both external envelopes and internal spaces of buildings. Facing, cladding and curtain walls for external walls as well as suspended ceilings, light partitions and internal wall treatments of internal spaces are the main topics of this course. These different topics are studied through both conventional and advanced materials and methods of construction.

The course aims to:

- Provide the student with the main knowledge to strengthen their vocabulary of both external and internal treatments and finishing through the use of different materials.
- Provide the student with the basics of sustainable practices and an endeavor to use sustainable materials and techniques.

3- Intended Learning Outcomes

a- Knowledge and Understanding	Through knowledge and understanding, students will be able to: <ul style="list-style-type: none"> • Select suitable treatments and appropriate finishing materials for both the external envelope and the internal spaces of a building according to its type and function.(K5) • Employ external and internal treatments and finishing materials. • Demonstrate the principles of building technologies in the use of materials, process assembly and consideration of environmental active treatments.(K8)
b- Intellectual Skills	Through intellectual skills, students will be able to: <ul style="list-style-type: none"> • Express his designs, the chosen materials and their different connections through elaborate execution drawings.(I10) • Apply sustainable concepts and use sustainable materials and techniques, both passive and active throughout their designs.(I2) • Design and solve the connections between different finishing materials both indoor and outdoor (I10)
c- Professional Skills	Through professional and practical skills, students will be able to: <ul style="list-style-type: none"> • Assess both techniques and materials for suitable use within the building.(P4) • Produce professional execution drawings using an appropriate range of methods. (P2)
d- General Skills	Through general and transferable skills, students will be able to: <ul style="list-style-type: none"> • Work in an interdisciplinary environment and elaborate with others.(G1) • Exercise initiative, original thought and independence, and to express personal opinions in oral, graphic and written forms (G3) • Demonstrate understanding of professional conduct and ethical responsibility.

4- Course Content

- Week No.1** Modular coordination & its application on internal floor finishing (floor pattern)
Design considerations, used materials and architectural treatments.
- Week No.2** Internal wall finishing material.
Plaster and paint. Design considerations, used materials and architectural treatments.
- Week No.3** Wood facing
Design considerations, used materials and architectural treatments.
- Week No.4** Internal light partition, Glass wood partition.
Design considerations, used materials and architectural treatments.
- Week No.5** Internal light partition, Marble toilet partition.
Design considerations, used materials and architectural treatments.
- Week No.6** Internal light partition, Gypsum board.
Design considerations, used materials and architectural treatments.
- Week No.7** False ceiling.
Metal lath, gypsum board
- Week No.8** Continuation of the previous lecture and evaluation.
- Week No.9** False ceiling.
Acoustic tiles
- Week No.10** External plaster. External facing (brick and stone). External facing (Marble).
- Week No.11** External facing (Composite Aluminum Panels)
- Week No.12** Continuation of the previous lecture and evaluation.
- Week No.13** Research presentations
- Week No.14** External Cladding (Materials, methods & techniques)
- Week No.15** Aluminum-glass curtain walls.

5- Teaching and Learning Methods

The course comprises a combination of:
Lectures, class activities, supervised group teaching, group research and discussion sessions.

6-Teaching and Learning Methods for Students with Special Needs

- Consulting with lecturer during office hours.
- Consulting with teaching assistant during office hours.
- Private sessions for redelivering the lecture contents.
- For handicapped accessibility, please refer to program specification.

7- Student Assessment

Students must present: One project per semester (consisting of the 9 assignments amalgamated at the end of the semester). Submission occurs at three 3 stages: 7th, 12th and final submission; the project is conducted under the supervision of the tutors. An assignment is submitted every section. A four-hour exam takes place in the 7th, 12th and 16th weeks. Students have to present the final project during the final jury which will demonstrate the learning outcomes throughout the academic semester in an appropriate form of documentation and presentation.

Asses No.	Procedures used		Start Week No.	Subm. Week No.	Weighting of Asses.
	Type	To assess			
1	(1): Revision	Knowledge and intellectual skills.	1	2	%
2	Drawing exercise (2): modular coordination	Knowledge and understanding.	2	2	%
3	(3): internal wood facing	Knowledge and understanding.	3	3	%
4	(4): Wood-glass partitions	Knowledge and understanding	4	4	%
5	(5): Toilet partitions	Knowledge and understanding.	5	5	%
6	(6): Gypsum board partitions Looking up plans & false ceiling det.	Knowledge and intellectual skills.	6	6	%
7	Exam + 1st project submission	Knowledge and understanding Knowledge and intellectual skills	8	8	30 % Inc. weekly assess.
8	(7): False ceiling, looking up plan & details	Knowledge and understanding.	9	9	%
9	(8): External finishing (Plaster & facing), External facing, brick & stone & marble	Knowledge and understanding.	10	10	%
10	(9): Composite aluminum panels	Knowledge and intellectual skills	11	11	%
11	+ 2 nd project submission	Knowledge and intellectual skills Practical skills	12	12	20%
12, 13	Group Research	Knowledge and understanding.	13	13	20%
14	(10): External finishing (Cladding)	Knowledge and intellectual skills.	14	14	%
15	(11): External finishing (Curtain wall)	Knowledge and intellectual skills.	15	15	%
	Weekly assessments		8	15	10%
16		Knowledge and intellectual skills Practical skills	-	-	20%
Total					100%

8- List of References:

a- Course Notes	Notes are handed out to the students throughout the semester.
b- Required Books (Textbooks)	• WATSON, D., <i>Time-Saver Standards for Building Materials & Systems: Design Criteria and Selection Data</i> , McGraw-Hill Professional, 1 st ed., 2000
c- Recommended Books	• CHING Francis D.K. - <i>Building Construction Illustrated</i> - Van Nostrand Reinhold- 1975. • ALLEN Edward - <i>Fundamentals of Building Construction: Materials and Methods</i> - John Wiley & Sons - 1990. • CHUDLEY R. - <i>Construction Technology</i> - Longman- 1974 - 1987. • MCKAY W.B. - <i>Building Construction (volume 1)</i> - Longman- 1963 -1970.
d- Periodicals, Web Sites, etc.	N/A