



Module (Construction Materials) Catalogue

2023-2024

College/ Institute	Technology Institute of Erbil	
Department	Road Construction Department	
Module Name	Construction Materials	
Module Code	COM205	
Degree	Technical Diploma <input type="checkbox"/>	Bachelor <input type="checkbox"/>
	High Diploma <input type="checkbox"/>	Master <input checked="" type="checkbox"/>
		PhD <input type="checkbox"/>
Semester	2	
Qualification	MSc.	
Scientific Title	Assistant lecturer	
ECTS (Credits)	6	
Module type	Prerequisite <input type="checkbox"/>	Core <input type="checkbox"/> Assist. <input type="checkbox"/>
Weekly hours	4 hrs.	
Weekly hours (Theory)	(2)hr Class	(162)Total hrs Workload
Weekly hours (Practical)	(2)hr Class	(162)Total hrs Workload
Number of Weeks	12	
Lecturer (Theory)	Hozan Khalil yaba	
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Lecturer (Practical)	Hozan Khalil yaba	
E-Mail & Mobile NO.	07504618166	
Websites		

Course Book

Course Description	<p>This is an entry-level course for first stage students of road construction departments to introduce them the materials that mostly used in construction especially those used in road construction. The course consists of two hours theory and 3 hours laboratory tests on asphalt and other construction material.</p> <p>Students will learn how to write a report and manage it with test data's', organize information in tables, perform calculations on data, create graphs and charts.</p> <p>Today, employers across most industries and fields expect candidates to have Microsoft Office skills, as it is the most universally utilized software in business. Having these skills, even at a basic level, will help with job prospects and increase the chance to be considered for most roles.</p>
Course objectives	<ol style="list-style-type: none">1. Introduce students with Materials in detail and the importance of this material, its advantages and disadvantages and how to use in construction.2. Introduce students with other construction materials in general and those used in road construction in detail, their advantages and disadvantages and how to use them in construction.3. Introduce students with construction material through the use of theoretical lectures, standard laboratory tests according to the S.O.R.B standard and site visits.
Student's obligation	<ol style="list-style-type: none">1. Student should attend lectures (theory part) and practicing tests in material laboratories.2. Student should attend exams during the course.3. Home works4. Quizzes5. Assignments6. Report and seminars.7. Work as a team
Required Learning Materials	<ol style="list-style-type: none">1. Lecture notes will be handled to the students at the beginning of each part to facilitate easier understanding of books and also to read references.2. Power point presentation for parts of the course as required.

	3. White board will be used to explain program commands, draw sketches and solve problems in the lab.				
Evaluation	Task	Weight (Marks)	Due Week	Relevant Learning Outcome	
	Paper Review				
	Assignments	Homework	5%	2	
		Class Activity	2%		
		Report		1	
		Seminar	10%	1	
		Essay			
		Project			
	Quiz		8%	4	
	Lab.		10%	6	
	Midterm Exam		25%	1	
	Final Exam		40%	1	
Total		100			
Specific learning outcome:	At the end of the course students are expected to have a comprehensive knowledge on different construction materials and standard tests required for each construction work and how to choose a suitable and economic material for different construction works especially road construction.				
Course References:	<p>1. S.O.R.B.IRQ.1979/ (الطرق القياسية المواصفات) (.S.O.R. B</p> <p>2. James G. Speight. Asphalt Materials Science and Technology. 1 st Edition, 2016, Elsevier.</p> <p>3. Patrick Lavin. Asphalt Pavements: A Practical Guide to Design, Production and Maintenance for Engineers and Architects. 1 st Edition, 2003, Spon Press.</p> <p>4. Athanassios Nikolaidis. Highway Engineering: Pavements, Materials and Control of Quality. 1st Edition, 2015, CRC Press.</p> <p>5. J.M. Illston and P.L.J. Domone. Construction Materials: Their Nature and Behaviour. 3 rd Edition, 2001, Spon Press/ (الطرق القياسية المواصفات) (.S.O.R. B</p>				

Course topics (Theory)	Week	Learning Outcome
Introduction and Historical background of Roads Evolution of Paved Roads.	1	
Classification of Roads and Their Details.	2	
Construction Materials and their Characteristics	3	
Binder Materials	4	
Cement, Physical properties	5	
Concrete, Properties and Applications	6	
Aggregates for concrete	7	
Gypsum, Physical properties	8	
Bricks, Properties and Applications	9	
Tiles, Properties and Applications	10	
Timber, Structure of Timber and the Presence of Moisture	11	
Paints and their Applications in Construction	12	
Admixtures	13	
Mid Term Exam	14	
Practical Topics	Week	Learning Outcome
Aggregate Abrasion Value Test	1	
Aggregate Crushing Value Test	2	
Water Absorption Test of Brick	3	
Efflorescence Test of Brick	4	
Specific Gravity Test of Brick	5	
Test for Compressive Strength of Bricks	6	

Breaking Strength Test of Tile	7	
Gypsum Setting Time Test	8	
Gypsum Setting Time Test	9	
Tensile Strength Test of Timber	10	

Questions Example Design

1. Compositional:

In this type of exam, the questions usually start with Explain how, what are the reasons for...? Why...? How....?

Example

Q\Define (5) Of the following terms in brief (with Sketches when necessary)? Green Brick, Fine aggregate, Portland cement, Gypsum plaster...

Answer\

Green Brick:

the green bricks (not solidified yet!), are then stacked with care to allow sufficient airspace between them to create even colouring and uniform strength during drying and firing

2. Write a comparison for:

Example

Write a comparison of Flooring; hard finish plaster and hard wall plaster (In 1. Setting time, 2. Uses)

Answer\

1. Flooring, hard finish plaster:

1. Setting time ~1-16 h
2. Can be used for producing prefabricated units, masonry
3. bricks & blocks & flooring & pavement bricks & tiles.

2. Hard wall plaster

- 1. Flooring finish plaster: 1. Setting time ~1 hr
- 2. Can be used for plastering walls

3. Fill the following blanks properly?

Example

1. Bricks can be used for; 1. _____, 2. _____, 3. _____, 4. _____

Answer

1. Facing,
- 2.Paving,
3. Sewer,
- 4.Fire place

4. Explain the following questions accurately?

Example:

Q\ Admixtures have a great effect on Gypsum properties.

Answer:

Admixtures result in increased plasticity & setting time & reduced shrinkage.

Extra notes:

I have no notification

External Evaluator