

Department of Civil Engineering			
Construction Materials (61205)			
Total Credits	2		
major compulsory			
Prerequisites	P1 : Introduction to Engineering (61100) OR Intro. To Eng. Ethics (60100) OR Introduction to Eng. & Eng. Ethics (64100) P11Synch. : Introduction to Eng. & Eng. Ethics (64100) OR Intro. To Eng. Ethics (60100)		
Course Contents			
A study of properties and behavior of building materials used in civil engineering, such as cement, concrete, metals, and wood. Students will also learn the standard specifications and testing methods associated with the production and quality control methods, and workplace safety procedures			
Intended Learning Outcomes (ILO's)		Student Outcomes (SO's)	Contribution
1	Understand the origin of raw construction materials, their production and main physical, chemical and mechanical properties.	A	40 %
2	An ability to design experiments and interpret data related to construction materials.	B	20 %
3	Identify, formulate and solve engineering problems related to the use of different construction materials.	E	30 %
4	A knowledge of contemporary issues in the area of construction materials.	J	10 %
Textbook and/ or References			
A.M. Neville. Properties of Concrete G.D. Taylor. Materials in Construction H. Atkins. Highway Materials, Soils and Concrete			
Assessment Criteria		Percent (%)	
First Exam		20 %	
Second Exam		20 %	
Quizzes		5 %	
Homeworks		5 %	
Final Exam		50 %	
Course Plan			
Week	Topic		
1	Introduction: Construction materials: definition, classification, main physical and mechanical properties.		
2,3, &4	Aggregates: Sources of aggregates, Terms and types, Properties, Specifications, Sampling and testing, Blending, Test procedures.		
5,6,7,8, &9	Concrete: Portland cement, Properties and concrete, Materials, Design criteria, Basic tests, Concrete mix design, Quality control of concrete, Curing and construction practices, Special concretes.		
10 &11	Concrete blocks, pipes and curbstone		
12	Tiles for flooring and paving. Types and main properties		
13	Building stone. Types and main properties		
14	Metals. Steel types used in construction. General applications of metals in construction		
15	Timber. Types and main properties		