

Construction Technology Module				
Course Title	Construction Materials			
Course Number	CEng2101			
Program	B.Sc in Water Resources and Irrigation Engineering			
Module Coordinator	Name: Office location Mobile:; e-mail: Consultation Hours: _____			
Instructor Name	Name: Office location Mobile:; e-mail: Consultation Hours: _____			
Course Information	Academic Year : Year: II Semester : II Meeting Day: To be arranged at the beginning of the semester Meeting Time: To be arranged at the beginning of the semester Meeting Location: To be arranged at the beginning of the semester			
ECTS	3 ECTS			
Students' work load in hrs	Lecture	Tutorial	Lab	Home study
	1	1	2	1
Course Objectives and Competences Acquired	- The student is required to understand the property of materials for construction under different conditions. In addition they must know the production process of some construction materials, have basic skill on how to mix and produce concrete. - At the end the student acquired the Management of construction equipment, operation, maintenance, finance and safety of equipment			
Course Description	Classification of construction materials; Mechanical properties of construction materials: nature and performance of materials under load; Cementing materials: production and use of lime, gypsum and cement; Types and properties of cement; Mortar; Concrete: concrete making materials, mix design, fresh and hardened concrete properties, curing techniques; concrete admixtures; Metals in constructions; Properties of steel and aluminum alloys; Timber and timber products; Clay and clay products; Building blocks; Building stones. Selection of Construction Equipment. Earth Construction: Methods of Borrow, Handling and Placement of Earth Materials; Soil Stabilization and Compaction; Equipment for Earthwork: Excavating, Conveying and Compacting Equipment; Tractors and Related Equipment. Construction Dewatering. Compressors, equipment for foundation works. Pile-Driving Equipment. Crushers. Concreting: Mixers; Concrete hauling equipment and mobile trucks. Vibrators. Cranes. Pipe layers. Tunneling in soft ground, rock tunneling, tunneling machines for soft ground and rock, rock blasting. Labor intensive technology, mixed technology. Management of construction equipment, operation, maintenance, finance and safety of equipment			
Pre-requisite	None			

Course status		Compulsory	
Schedule/ syllabus			
Week	Topics and contact hours (Lecture, Tutorial, lab/practical time allocation)	Required Reference with pages	
To be prepared by Civil and Urban/Civil Engineering Department			
Summary of Teaching and Learning Method	Lecture, tutorials, practical/laboratory		
Assignments	At the end of each session assignment will be given.		
Assessment	Percentage mark and type of assessment	Chapter or topics and date	
Course Expectation	Preparedness and participation: both students and the teacher should be prepared since education is an interactive process. Students should be active participants in the teaching-learning process. They should be interested to the course and come to class with the necessary materials such as exercise books and pen. In addition, they should to take responsibility in their education. Teachers are also expected be prepared and interested to the course, which they are offering. They have to consult the essential materials ahead of time and try share their knowledge in an efficient and effective manner. Material availability: reference materials are expected to be available in the library nearest to respective faculties.		
Policy	Attendance: students should attend at least 85% Lecture and 100% laboratory or practical. Assignments: all students must do all the assignments given Tests/quizzes: all students must site/take all tests/quizzes given Cheating/plagiarism: cheating/plagiarism is strictly forbidden. It will result in disqualification of the course.		
Reference	• Marotta, Theodore, W. (2005). Basic Construction Materials, Pearson Prentice Hall. • William P. Spencer. (2006). Construction Materials, Methods and Techniques. Thomson Delmar Learning, 2nd Edition • Illston J.M. , Taylor & Francis (2001). Construction Materials: Their Nature and Behaviour,, 3rd edition, • Tebege N. (1995). Structural Use of Concrete Addis Ababa • Singh Surendra (1987). Engineering Materials: 5th Edition , Delhi • Higgins, R.A (1997). Materials for Engineering Technicians: 3rd Edition, Oxford • Charles S. (1997). Selection and Use of Engineering Materials, Oxford • Moffatt Will (1964). The Structures and Properties of Materials: Volume-I , New Delhi • Ralls, K. M. (1976) Introduction to Material Science and Engineering, New Delhi • Rose (1966). The Structural and Properties of Materials, New Delhi		

