College of Engineering
Civil Engineering Dept.

كليـــة الهندســـــــة
قسم الهندسة المدنيـــة

Course Description وصــف مقــرر دراســي

رقم ورمز المقرر Course Code	اســـــــم المقـــــــرر Course Title	الساعات CR	نظري LT	عملي LB	تمارين TU	متطلب سابق Pre-Req	متطلب متزامن Co-Req.
401 همد CE 401	تكنولوجيا الخرسانة Concrete Technology	3	3	0	1	203 همد CE 203	

محتويات المقرر :

هذا المقرر يمثل دراسات متقدمه فى تكنولوجيا الخرسانه. يتضمن المقرر خواص وتفاعلات الأسمنت، مكونات وخصائص الخلطات الأسمنتيه، دراسات مواد الركام، تصميم وخصائص الخلطه الخرسانيه، إنتاج الخرسانه ومراقبة جودتها، بعض الأنواع الخاصه من الخلطه الخرسانيه مثل الخرسانه المخلوطه بالفيبر، والبوليمر،.....مشاكل متانة الخرسانه فى المناخ والبيئه الخاصه بمنطقة الخليج والمعالجات الاستباقيه لها.

In-depth study of composition, characteristics and hydration of cements; structure and properties of hardened cement paste; local aggregates; workability, strength, volume changes and permeability of concrete; failure mechanisms of plain concrete; production, handling and quality control of concrete; mix design; special concretes such as fiber reinforced concrete, ferrocement and polymer impregnated; durability problems of concrete in the Gulf environment; preventive measures, specifications and construction techniques for local conditions

Course Objectives:

The main objective of the course is to undertake a detailed overview of the composition, characteristics, chemical reactivity and properties of cement, aggregates and concrete. Exhaustive treatment of issues related to the fresh and hardened concrete including workability, strength, volume changes and permeability of concrete; failure mechanisms of plain concrete; production, handling and quality control of concrete; mix design; special concretes such as fiber reinforced concrete, ferrocement and polymer impregnated concrete, durability problems of concrete in the Gulf environment, admixtures etc. will be undertaken. The specifications for the concrete and the construction techniques for the local conditions will also be discussed.

Evaluation Methods:

1. Midterm exams
2. Assignments
3. Quizzes
4. Final exam

Text Book and References:

Textbook: P.K. Mehta and P.J.M. Monteiro, Concrete: Structure, Properties, and Materials, 2nd Edition,
References: 1-Steven H. Kosmatica and William C. Panavese, Design and Control of Concrete Mixtures, Fourteenth Edition, Portland Cement Association.
2.- A.M. Neville, Properties of Concrete, 4th edition, A. Pitman International Text.Prentice-Hall, New Jersey, 1993.

توقيع رئيس القسم: توقيع عميد الكلية: