**EASTERN MEDITERRANEAN UNIVERSITY**

**DEPARTMENT OF CIVIL ENGINEERING**

CIVL685 Fiber Reinforced Concrete

Spring 2019-2020

# Outline (Tentative)

1. Concept of FRC
2. Fiber Types, Physical and Chemical Properties of Fibers
3. Properties of Freshly Mixed and Hardened Fiber Reinforced Concrete
4. Mix Proportioning of FRC
5. Mechanical Properties of FRC and High Strength FRC
6. Cost and Economical Benefits of FRC

***Instructor***: Prof. Dr. Khaled MARAR

***E-mail***: khaled.marar@emu.edu.tr

***Office***: CE Building, First Floor, office no CE132, Phone: 630-2027

***Grading System:***

Lectures will be delived in class by using slides. Slides will be available in web for use only in this lecture. Discussions will be encouraged in class. There will be one term project. Project titles for each graduate student will be given within first two weeks of lecture. Each student should present academic articles during the semester. Articles will be searched by students and approved by instructor. Final exam (written) will be at the end of semester within final exam period. Evaluation of each item is as given below:

 Paper presentations on related topic : 20%

 Term paper (project, team work) : 30%

Final Exam (all subjects) : 50%

* Any student who has poor interest in the course, poor attendance (less than 70%) and lack of exams (more than one) will be give NG (nil grade). Make-up exam will be given after final exam.

# Recommended References:

1. CIVL685 Lecture notes, Department of Civil Engineering, Eastern Mediterranean University, 2020.
2. J.M. Illston, Construction Materials, Their Nature and Behavior, E & FN Spon, 2010.
3. J.J. Beaudoin, Handbook of Fiber Reinforced Concrete: Principles, Properties, Developments and Applications, Noyes Publications, USA, 1990.
4. ACI Committee 544, State-of-the-art Report on Fiber Reinforced Concrete, ACI 544.1R.
5. ACI Committee 544, Measurements of Properties of Fiber Reinforced Concrete, ACI 544.2R.