教學目標：
1. Provide students with a solid grounding in the principle of fiber reinforced cementitious composites.
2. It covers fundamentals of composite materials, ferrocement, laminated cementitious composites, fiber reinforced cementitious composites, methods of analysis, functionalities, and other topics.
3. Equip students with a fundamental knowledge of mechanical characteristics, analysis principles, practice advantages, and a demonstrated ability of FRC.

教學綱要
1. Ferrocement
2. Laminated cementitious composites
3. Constituent Materials
4. Theoretical Background
5. Experimental Studies
6. Field Practice Demonstrations

教科書
自編教材

參考書：

教學進度：
1. Introduction: the Role of Materials in Advanced Infrastructure Systems
2. Mechanical Properties of Ferrocement as Observed from Test
3. Modeling the Tensile Response of Ferrocement and Other Brittle Matrix Composites with Continuous Fibers
4. Analysis and Design of Ferrocement in Bending
5. Practical Design Guideline
6. Construction – Fabrication of Ferrocement
7. Testing for Reinforcement and Composite Properties
8. Advanced Materials and Concepts

9. **Mid-Term Exam**
10. Bendable Concrete: Constituent Materials and Design Methodology
11. Unique Properties of FRC
12. Experimental FRC Structural Studies
13. Integrated Structures and Materials Design via FRC Technology
14. Durability of FRC Structures
15. Sustainable Infrastructure via Material Engineering
16. Micromechanicals-based Material Engineering of Ultra Ductile Concrete Material for Protective Structures
17. FRC Repair Durability and Field Experiences

18. **Final Exam**

成績評定：
作業：30%、平時表現（出席率、上課秩序）：10%、期中考：30%、期末考：30%

課堂要求：
依照校規與系所規定
作業一律於隔週上課時繳交
作業抄襲、遲交一律以零分計算
考試作弊一律以零分計算