

Izmir Institute of Technology / Department of Civil Engineering

CE 244 – Materials of Construction

2025-2026 Spring Semester

Instructor:

Dr. Yunus Seyrek

Teaching Assistant:

Res. Asst. Bora Dođarođlu

Course Time and Location:

Mondays 09:45-12:30 and 15:30-17:15

B212

Laboratory classes will be announced in advance.

Course Description:

The objective of this course is to teach the internal structures, physical and mechanical properties, production techniques, and standard testing methods of fundamental construction materials (metals, aggregates, binders, concrete, timber, etc.) used in civil engineering. Students will gain core competencies in material selection and application principles.

Textbook and References:

- T.Y. Erdođan, Materials of Construction, METU Press, 2002.
- A.M. Neville, Properties of Concrete, Harlow, England; New York: Prentice Hall/Pearson Education, 2006.
- C. Hornbostel, Construction Materials: Types, Uses and Applications, New York: John Wiley & Sons, 1991.
- B. Baradan, H. Yazıcı, S. Aydın, Beton, Dokuz Eylül Üniversitesi Mühendislik Fakültesi Yayınları.
- E. Allen and J. Iano, Fundamentals of Building Construction: Materials and Methods, N.J.: J. Wiley & Sons, 2004.

Grading:

- Midterm I: 20%
- Midterm II: 20%
- Laboratory Reports: 20%
- Final Exam: %40

Course Content:

- Introduction
- Pozzolans
- Portland Cement
- Cement Characteristics and Testing
- Aggregates
- Introduction to Concrete and Fresh Concrete
- Concrete Production and Admixtures
- Properties of Hardened Concrete
- Durability
- Quality Control and Statistical Approach
- Wood and Metals
- Plastic and Polymers