

## MATERIALS SCIENCE AND ENGINEERING (COURSE 3)

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### Summer Session Representative

Rebecca Shepardson ([bshep@mit.edu](mailto:bshep@mit.edu))

Room 6-107A

617-258-5816

Current MIT students can take arranged-unit subjects such as UROP, Special Studies, Special Subjects, Research, Internship, Industrial Practice, Co-op, Independent Study, Thesis Preparation, or Thesis during the Summer Session by prior arrangement with a faculty member.

The following internship track and pre-thesis research subjects have subsidized tuition:

- 3.930 Internship Program
- 3.931 Internship Program
- 3.932 Industrial Practice
- 3.THG Graduate Thesis

See Tuition (<https://catalog.mit.edu/summer/tuition-financial-aid>) for details of the policy concerning the above subjects.

### 3.371[[ Structural Materials

Same subject as 2.821[[

Prereq: Permission of instructor

G (Fall, Summer)

3-0-9 units

Credit cannot also be received for 3.171

06/09/2025–08/14/2025, M, Th 8:30 - 9:30 AM, 4-145

Examines theoretical and practical aspects of structural materials by discussing mechanical properties of materials and manufacturing processes used to convert raw materials into high performance and reliable components for particular applications. Discusses specific types of steel, aluminum, titanium, ceramics, cement, polymer,s and composites in context of commercially available product designations and specifications. Examines manufacturing processes used for exemplar products of each type of material, such as heat treatments, sintering, and injection molding, among others. Considers established methods of metallurgical failure analysis and fractography through product failure case studies in order to prepare students to determine root causes of component failures in the real world. Students taking graduate version submit additional work. Meets with 3.171 when offered concurrently.

Summer: D. Baskin