# 4.462 SYLLABUS

**PROF. JOHN OCHSENDORF (JAO@MIT.EDU)**
**TA: DEMI FANG (DFANG@MIT.EDU)**
**OFFICE HOURS: BY APPOINTMENT**
**LEC: MW 9:30-11:00 AM, ROOM 3-333**
**LAB: W 7:00 PM - 9:00 PM, ROOM 5-134**

| | DATE | | SUBJECT |
|---|---|---|---|
| FEBRUARY | Mon | 6 | Introduction |
| | Wed | 8 | Compression structures |
| | Wed | 8 | LAB: Cables and arches |
| | Mon | 13 | Tension structures |
| | Wed | 15 | Designing for axial forces (Equilibrium HW due) |
| | Wed | 15 | LAB: Buckling and column project |
| | Tues | 21 | Truss design (Monday schedule) |
| | Wed | 22 | Forces and forms in beams |
| | Wed | 22 | LAB: Truss design/column project |
| | Mon | 27 | Beam design (Truss HW due) |
| MARCH | Wed | 1 | Forces and forms in frames |
| | Wed | 1 | LAB: Column testing (Built column due) |
| | Mon | 6 | Frame design |
| | Wed | 8 | Structural failures |
| | Wed | 8 | LAB: Beams and frames (Column report due) |
| | Mon | 13 | Stability and indeterminacy |
| | Wed | 15 | Indeterminate beams and frames (Beam HW due) |
| | Wed | 15 | LAB: Review |
| | Mon | 20 | Mid Review |
| | Wed | 22 | Mid Project |

| | DATE | | SUBJECT |
|---|---|---|---|
| MARCH | Wed | 22 | LAB: Beam project |
| | M-F | 27-31 | SPRING BREAK |
| APRIL | Mon | 3 | Indeterminate frames |
| | Wed | 5 | Lateral load systems |
| | Wed | 5 | LAB: Beam design |
| | Mon | 10 | Final project overview |
| | Wed | 12 | Structural computation |
| | Wed | 12 | LAB: Beam testing (built beam due) |
| | Mon | 17 | No class: Patriot's Day |
| | Wed | 19 | Guest Lecture |
| | Wed | 19 | LAB: Design project (Beam report due) |
| | Mon | 24 | Reinforced concrete design |
| | Wed | 26 | Steel and timber design |
| | Wed | 26 | LAB: Design project (Project proposal due) |
| MAY | Mon | 1 | Sustainable materials |
| | Wed | 3 | Sustainable structures |
| | Wed | 3 | LAB: Final project (Project preliminary calculations due) |
| | Mon | 8 | Design for strength and serviceability |
| | Wed | 10 | Course overview |
| | Wed | 10 | LAB: Final project |
| | Mon | 15 | Review |

Final grades will be calculated as follows:

| | |
|---|---|
| Participation | 5% |
| Homework | 20% |
| Lab reports | 30% |
| Mid Project | 15% |
| Final Project | 30% |

Required Text:

Allen, E. and Zalewski, W., *Form and Forces* (Wiley, 2009)