# Course Syllabus

| Destructive tests | Non-destructive tests | Experimental mechanics of materials | Factor of Safety | Internal forces, stresses, strains, stress-strain relations, stress concentrations, optimized choice of materials | Statically indeterminate structures, problems with temperature changes, shear strain, stress-strain distribution, torsion, simple bending, asymmetric bending, transverse loading, stresses under combined loading, stress transformations, Mohr cycles, elastic curve of loaded beams, energy methods |

## Course Information

**Code:** MECH 201  
**Course:** Engineering Mechanics – Strength of Materials

**Mandatory:** X  
**Elective:**  
**Specialization:**

**Semester:** F X S  
**Teaching Units:** 4  
**ECTS:** 6

**Teaching Hours per week:**

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**Instructors:** K. Providakis (School ARCHMECH)

**Textbooks (Eudoxus):**

1. Βιβλίο [22693328]: Μηχανική των Υλικών, 6η Έκδοση, Beer Ferdinand P., Johnston Russell E.
2. Βιβλίο [18548695]: Αντοχή των υλικών, Παπαμίχος Ευρυπίδης, Χαραλαμπάκης Νικόλαος

**Other recommended books:**

**Notes:** E-class (Presentations – Notes – Solved problems)

**Labs:**

- **# of lab exercises:** 4
- **Individual Reports:** 4
- **Team Reports:** 0
- **Lab final written exam:** 0
- **% of Final Lab Grade:** 0

**Final Grade:**

- **Final Exam:** 70%
- **Project:** 0%
- **Labs:** 10%
- **Other (Projects):** 20%

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**Course Syllabus:**

Destructive tests, Non-destructive tests, Experimental mechanics of materials, Factor of Safety, Internal forces, stresses, Strains, Stress-strain relations, Stress concentrations, Optimized choice of materials, Statically indeterminate structures, Problems with temperature changes, Shear strain, Stress-strain distribution, Torsion, Simple bending, Asymmetric bending, Transverse loading, Stresses under combined loading, Stress transformations, Mohr cycles, Elastic curve of loaded beams, Energy methods.