## ME-231(b) Structural mechanics for SV

Fantner Georg				
Cursus	Sem.	Туре	Language of	English
Life Sciences Engineering	BA5, MA1, MA3	Opt.	teaching Credits Session Semester Exam Workload Weeks Hours Lecture Exercises Number of positions	4 Winter Fall Written 120h 14 <b>4 weekly</b> 3 weekly 1 weekly

#### Summary

This course aims to provide a concise understanding of how materials and structures react to loads. It covers the basics of stress and strain in multi dimensions, deformation and failure criteria. The course is tailored to problems students from life science might encounter.

### Content

- review of equilibrium ridged body mechanics
- strain & stress in one dimension
- strain & stress in higher dimensions
- stress concentrations
- torsion
- transformation of stress and strain
- stress and strain in beams (shear and bending moments)
- beam bending
- buckling

### **Learning Prerequisites**

Important concepts to start the course

- Introduction to physics: mechanics (statics)
- vector and tensor math

# Assessment methods written exam

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## Resources

Moodle Link

https://go.epfl.ch/ME-231\_b

