

## Introduction to Mechanics

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| Course number:       | 6316                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Hours per week:      | 4 (lecture) + 2 (practice sessions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| ECTS:                | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Scheduled:           | Summer term                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Format:              | Lecture and team work                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Examination:         | Written exam (90 min)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Lecturer:            | Prof. Dr. Jochen Krieger                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Objectives:          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Contents:            | <p><b>Engineering Mechanics: Statics</b></p> <ul style="list-style-type: none"> <li>- Introduction Mechanics, Newton's laws</li> <li>- Statics of particles</li> <li>- Rigid Bodies and Equivalent Systems</li> <li>- Equilibrium of Rigid Bodies</li> <li>- Friction</li> <li>- Analysis of Structures</li> <li>- Distributed Forces, Centroids and Center of Mass</li> <li>- Forces in Beams</li> </ul> <p><b>Mechanics of Materials</b></p> <ul style="list-style-type: none"> <li>- Concept of Stress</li> <li>- Stress and Strain: Axial Loading</li> <li>- Deflection of Beams</li> </ul> |
| Pre-requisites       | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Recommended Reading: | <p>Vector Mechanics for Engineers: Statics by Ferdinand Beer , Wiley</p> <p>Engineering Mechanics: Statics by J. L. Meriam, Wiley</p> <p>Mechanics of Materials by Ferdinand Beer, Wiley</p> <p>(all books in current edition)</p>                                                                                                                                                                                                                                                                                                                                                              |