Zurich University
of Applied Sciences

School of
Engineering

# t.LT2 - Light-Weight Construction Technology 2

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| **Person responsible for the course:** | Hanfried Hesselbarth, hsbh |
| **Credits:** | 4 |
| **Valid for:** | 2009/2010 |
| **Last saved:** | 23.08.2010 17:51 |

**Learning objectives:**

-Systematic development of lightweight load-bearing structures of mechanical products, especially in the automotive domain: vehicles for road, for rail and for flight, furthermore load bearing structures for apparatuses and vessels,
-understanding of lightweight elements and modes of construction as well as the corresponding background of statics, materials, production and economy.

**Course content:**

Lecture:
-design of stiffened panels.
-analysis of statically indeterminate structures.
-optimal design.
-materials and lightweight design parameters.
-plastic bending.
-fatigue of materials and structural parts.

Exercises and practice:
The exercises correspond to the lectures subjects

Lab work:
In the laboratory the load bearing behaviour until collapse of an interesting structural part will be tested. The preparation includes theoretical analysis and a test proposal. Interpretation of the results is an important part of the test report.

Self study - lecture:
Repeating of the lectures subjects, connecting it with the corresponding subjects from mechanics, material sciences, and product development.
Finalizing of the exercises started during the lessons.

Self study - practice:
Evaluation of the lab work and writing of a report.

**Previous knowledge:**

basics of statics and strenght

**Teaching method:**

| Type of lesson: | Number of lessons per week: |
|---|---|
| Lecture | 14*4 |
| Tutorial/Practicum | included |
| Group teaching | |
| Block instruction | |
| Seminar | |

**Assessment:**

According to the table or as specified in writing by the lecture at the beginning of the semester!

| Number | Type | Weighting |
|---|---|---|
| 1 | End of term exam | 50% |
| 1 | Exam during the semester | 40% |
| 1 | Further assessments | 10% |

**Language of instruction:**

German

**Instruction material:**

handouts

**Comments:**

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