Experimental methods

Basic input information

Experimental methods

Annotation:

The course is focused on knowledge improvement in the area of industrial products testing and experimental work.

Lesson

- ~~Building L, -1.floor (first underground floor)~~
- ~~Laboratory of applied mechanics~~

only the „virtual lab“ here on the e-learning

Teacher

- Aleš Lufinka
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What you need:

- **USB flash drive**
  for the experiment data storage
- **PC, notebook, etc.**
  - **MS Office Excel or Open Office Calc**
    for data processing
  - **MS Office Word or Open Office Writer**
    for drafting test reports

- Some camera (mobile phone, tablet, etc. with a camera)
  for experiment documentation – only if you want

Materials for lessons

- **all materials, photo documentations and videos from experiments and measured data will be here on the e-learning**

List of lessons

1. Basic input information, work safety prescription, excursion to the lab
2. Task 1: Measurement of a rubber part stiffness
3. Task 2: Tensile testing of a steel specimen
4. Task 3: Measurement of a liquid damper characteristics
5. Task 4: Vibration Frequency Analysis
6. Task 5: Measurement of amplitude frequency transmission characteristic
7. Task 6: Measurement of the resonance frequency using the Dirac pulse method
8. Task 7: The measurement device settings, measurement of the calibration curve
9. Task 8: Measurement of a part mechanical stress during operation
10. Task 9: Measurement of the scooter's beam deflection during riding
11. Task 10: Crash test
12. Students' work presentation, the course finishing

EXPM subject organization

- Lessons will not follow the schedule. On-line broadcasting of the experiment from the laboratory is not technically feasible. So, every week I will do an experiment in the laboratory according to the schedule of tasks. I will record the course of the experiment on video. I will place a description of the experiment, a video and measured data on e-learning. Your task will be to process the data according to the instructions - usually you will make a simple graph from the measured data and send it to me by e-mail. This can be at any time, so the lesson does not have to be on schedule. Every week I will provide e-learning materials and you will send the processed results.

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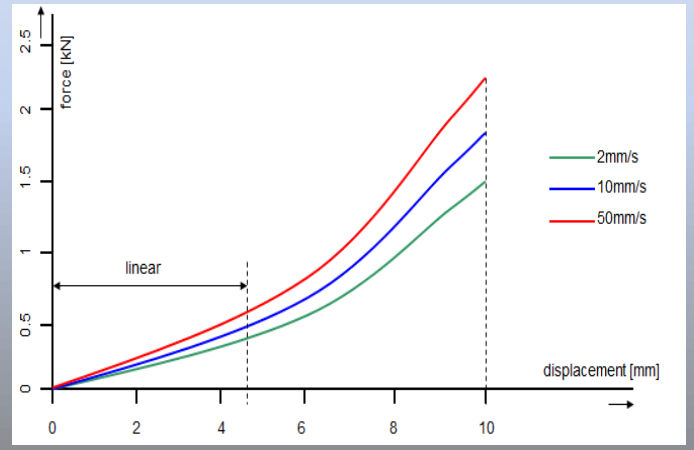

Conditions for passing the course

- **Credit**
  - simple data processing from all experiments
  - continuously during the semester - **every week, send the processed data of the experiment by e-mail, enter EXPM in the subject of the e-mail**

- **Exam**
  - **2 complete test reports from 2 experiments**
    you can choose 2 arbitrary tasks and make two complete measurement reports
    (NO PAPER, only file - pdf, ms office, open office format)

  - **Short presentation of your test reports**
    - 5 – 10 minutes for one test report
    - presentation at the last lesson - **we will use an online meeting**