

Dear Colleagues,

You will sit your 2nd test at 24th of November in the first hour of your Laboratory. You can sit the facultative 3rd test – to improve your mark – on 8th of December during the Laboratory.

The subjects of the 2nd test are the following:

1. Wind flow around single high rise and wide and lower buildings (flow structures) with especial regard to wind comfort.
2. Effect of passages on the pedestrian wind comfort (passage in a building, between buildings).
3. Wind tunnels (points of view of classification), most frequent wind tunnel types, advantage, disadvantages.
4. Construction (main parts) of a recirculating wind tunnel with open test section.
5. Interaction of main beams of a bridge and rows of building.
6. Method and main considerations of wind tunnel measurement of a building model.
7. Evaluation of the result of wind tunnel measurements (qualitative: flow visualization and quantitative: pressure coefficient distribution) of a model of a large hall.
8. Flow past cylinders, dependence of critical Reynolds number from the flow turbulence and surface roughness. Reynolds number ranges, drag and side force coefficients and characteristics, belonging to sub- super- and transcritical flow past cylinder (this course material was not lectured because of the holiday, but its underlying content belongs to basic fluid mechanics).
9. What are the main steps of modeling traffic induced pollution? Explain them in a few words.
10. What are the differences between modeling traffic induced pollution in MISCAM and Fluent based on your laboratory experiences?
11. What is validation, and why is it important?
12. What can the results of a dispersion study be used for?
13. What kind of wind tunnel techniques are used for determining the critical wind speed for a bridge structure? (section models, full aeroelastic models) Please make drawings if possible!
14. What is the main idea of the forced vibration method? (Forced vibration, flutter derivatives, analytical approach)

Relevant course materials on the Internet:

Wind comfort studies Questions 1 and 2,

<http://www-htgl.stanford.edu/bradshaw/tunnel/index.html> Questions 3 and 4

Interaction of main beams Question 5

Épületek körüli áramlás (4<sup>th</sup> and 5<sup>th</sup> slides). Question 5

Wind Tunnel Inv.Steetley Questions 6 and 7

Telecommmast06pres\_3 Question 8

Master\_Thesis\_Avasar.pdf, Questions 13, 14.