

SUBJECT DATA SHEET AND REQUIREMENTS
(TANTÁRGY ADATLAP ÉS TANTÁRGYKÖVETELMÉNYEK)
Last modified / Utolsó módosítás: 2012.06.13.

Aerodynamics and its Application for Vehicles (Aerodinamika és alkalmazása járművekre)

<i>I.</i>	<i>Code (kód)</i>	<i>Semester (szemeszter)</i>	<i>Requirements (követelmények)</i>	<i>Credit (kredit)</i>	<i>Language (nyelv)</i>
	BMEGEÁTMW09	4.	lect./sem./lab. (exam / pract. / signat.) 2/0/0 (p)	3	English (angol)

2. Responsible person and department (A tantárgyfelelős személy és tanszék):

<i>Name (név):</i>	<i>Status (beosztás):</i>	<i>Department (tanszék):</i>
Prof. Tamás LAJOS	professor	Dept. Fluid Mechanics

3. Lecturer (A tantárgy előadója):

<i>Name (név):</i>	<i>Status (beosztás):</i>	<i>Department (tanszék):</i>
Prof. Tamás LAJOS	professor	Dept. Fluid Mechanics
Eszter LUKÁCS	research fellow	Dept. Fluid Mechanics

4. Thematic background of the subject (A tantárgy az alábbi témakörök ismeretére épít):

Basics of Fluid Mechanics

5. Compulsory / suggested pre-requisites (Kötelező/ajánlott előtanulmányi rend):

	<i>Subject name (tárgynév)</i>	<i>Code (tárgykód)</i>
Compulsory pre-requisites:	-	-
Suggested pre-requisites:	-	-

6. Main objectives of the subject (A tantárgy célkitűzései):

To extend the knowledge of students in ground vehicle aerodynamics in particular as well as to contribute to development of skills of students in practical use of theoretical knowledge.

7. Detailed thematic description of the subject (A tantárgy részletes tematikája):

1. Introduction, bluff body aerodynamics,
2. Characteristics of atmospheric boundary layer.
3. Basics of car design (in co-operation with Moholy-Nagy University of Art)
4. Aerodynamics of automobiles
4. Aerodynamics of buses and trucks,
5. Aerodynamics of racing cars
6. Wind tunnels and their use for vehicle aerodynamics
7. Definition of projects, forming groups of students
8. Measurement of car models evaluation of car bodies from aerodynamic and design point of view. (in co-operation with Moholy-Nagy University of Art)
9. Presentations of groups.

8. Mode of education of the subject (A tantárgy oktatásának módja):

Lectures, measurement in wind tunnel laboratory, students' presentation of individual work and material of knowledge based on literature survey.

9. Requirements (Követelmények):

Successful accomplishment of 2 mid-term exams (7. and 14. week) report and presentation on wind tunnel measurement and/or numerical simulation, presentation based on a literature survey) during the semester.

10. Consulting opportunities (Konzultációs lehetőségek):

Lecturer of the subject is available weekly in a agreed time.

11. Reference literature (Jegyzet, tankönyv, felhasználható irodalom):

– Website of the subject: <http://www.ara.bme.hu/oktatas/tantargy/NEPTUN/BMEGEATMW09>

1. A.M. Keuthe, C-Y Chow: Foundations of Aerodynamics. John Wiley & Sons, Inc. 1998. ISBN 0-471-12919-4
2. W. H. Hucho: Aerodynamics of Road Vehicles SAE International, 1999.
3. T. Lajos: Az áramlástan alapjai (2008) ISBN: 9789630663823
4. Web page: www.aerodyn.org
5. Web page: <http://www.aeromech.usyd.edu.au/aero/aerodyn.html>

12. Home study required to pass the subject (A tantárgy elvégzéséhez szükséges tanulmányi munka):

2×10 hours preparation for 2 mid-term exams and 40 hours work to prepare the study and the presentations

13. The data sheet and the requirements are prepared by (A tantárgy tematikáját kidolgozta):

<i>Name (név):</i>	<i>Status (beosztás):</i>	<i>Department (Tanszék):</i>
Prof. Tamás LAJOS	professor	Dept. Fluid Mechanics