Budapest University of Technology and Economics
Faculty of Transportation Engineering and Vehicle Enginee

1. Subject name	**Ship hydrodynamics**				
2. Subject name in Hungarian	Hajó-hidrodinamikai számítások				
3. Code	**BMEKOVRM626**	**4. Evaluation type**	**mid-term grade**	**5. Credits**	**4**
6. Weekly contact hours	**1 (4) Lecture**	**1 (5) Practice**	**1 (5) Lab**		
7. Curriculum	**Vehicle Engineering MSc (J)**	**8. Role**	**Specialization (sp) at Vehicle Engineering MSc (J)**		
9. Working hours for fulfilling the requirements of the subject					**120**
Contact hours	42	**Preparation for seminars**	13	**Homework**	23
Reading written materials	42	**Midterm preparation**	0	**Exam preparation**	0
10. Department	**Department of Aeronautics and Naval Architectures**				
11. Responsible lecturer	Dr. Hargitai L. Csaba				
12. Lecturers	Dr. Simongáti Győző, Dr. Hargitai L. Csaba				
13. Prerequisites					

14. Description of lectures

Introduction of numerical and analytical calculation methods for determining of hull resistance, wave, speed and pressure field around the hull. Basics of ship specific numerical fluid dynamics calculations, international recommendations for calculation parameters and methods. The method of propeller design and defining propeller open water characteristics.

15. Description of practices

In the exercises, the students practice the ship hydrodynamic calculations.

16. Description of labortory practices

In laboratory practice, students are trained to determine ship resistance and rudder forces using computer programs.

17. Learning outcomes

A. Knowledge
- Knows the basics of numerical and analytical flow calculation techniques to determine hull resistance, waveform, and vessel velocity and pressure field.
- He/She is familiar with basics of ship specific numerical fluid dynamics calculations, international recommendations for calculation parameters and methods.
- He/She knows method of propeller design and defining propeller open water characteristics.

B. Skills
- Able to use ship specific parameters in a finite element program, in determining the hull resistance and the rudder forces.

C. Attitudes
- Interested, responsive, independent, take care for the deadlines.

D. Autonomy and Responsibility
- Pro-activity in professional work, the self-standing selection of the relevant solution methods.
- Making decision circumspectly.

18. Requirements, way to determine a grade (obtain a signature)

Mid-term requirement: preparing 1 semestrial home work
Final grade: 1 exam (measuring the theoretical knowledge), 1 semestrial home work, the final grade is the average of the parts second exam and delayed submission of the homework

19. Opportunity for repeat/retake and delayed completion

Delayed submission of the homework

20. Learning materials

Dr. Kovács A.-Dr. Benedek Z.: A hajók elmélete
Volker Bertram: Practical ship hydrodynamics

Effective date	10 October 2019	**This Subject Datasheet is valid for**	Inactive courses