BSc in Chemical 4N-A2/4NAA2
and Biochemical Engineering 4N-A5

Chemical and Biochemical Engineering
compulsory subject

SUBJECT DATA SHEET AND REQUIREMENTS

last modified: October 2019

CHEMICAL ENGINEERING FUNDAMENTALS

(Vegyipari géptan)

1	Code	Semester Nr. or fall/spring	Contact hours/week (lect.+semin.+lab.)	Requirements p / e / s	Credit	Language
	BMEGEVGAV03	**f**	**2+0+0**	**e**	**2**	**English**

2. Subject's responsible:

Name:	Position:	Affiliation (Department):
György Paál, PhD	Associate professor	Dept. of Hydrodynamic Systems

3. Lecturer:

Name:	Position:	Affiliation (Department):
Csaba Hős, PhD	Associate professor	Dept. of Hydrodynamic Systems
Kálmán Klapcsik	contact lecturer	Dept. of Hydrodynamic Systems

4. Thematic background of the subject:

The course covers the basics of mechanical engineering and prepares students for further engineering courses.

5. Compulsory / recommended prerequisites:

Compulsory: -
Suggested: -

6. Main aims and objectives, learning outcomes of the subject:

Upon finishing the course, the students will be familiar with the basic concepts of physics and engineering needed for latter engineering studies such as linear and angular velocity and acceleration, force, torque, power, energy, efficiency, dimensional conversion, pressure, fluid velocity etc. They will have experience on how to solve and handle engineering problems.

7. Method of education:

lecture: 2h/w
seminar: -
laboratory: -
homework: -

8. Detailed thematic description of the subject (by topic, min. 800 character):

Some definitions for machines. Basic and derived quantities. Transmission of mechanical work. Losses and efficiency. Uniformly accelerated motion of machines. Motion graphs. Absolute and gauge pressure. Bernoulli's equation. Venturi meter. Linear and rotational analogues. Thermal energy. Balance machines. Orifice and volume meter tank. Measuring pressure, fluid velocity.

9. Requirements and grading

a) in term-period

Optional attendance at two mid-term tests. (Based on the test results final grade can be offered.)

b) in examination period

Exam result >49%

c) Disciplinary Measures Against the Application of Unauthorized Means at Mid-Terms, Term-End Exams and Homework

According to the Code of Studies (Rector's Order № 7 of 2017 (6 November 2017) with the amendments of Rector's Order № 3 of 2018 (30 August 2018)), available at: https://gpk.bme.hu/downloads/en/BME_Code_of_Studies.pdf

d) grade

The final grade is based on the exam result as shown in the table below.

grade ● [ECTS]	**points**
jeles(5) ● Excellent [5]	above 88%
jó(4) ● Good [4]	76–88%
közepes(3) ● Satisfactory [3]	62–76%
elégséges(2) ● Pass [2]	50–62%
elégtelen(1) ● Fail [1]	under 50%

10. Retake and repeat

According to the Code of Studies.

11. Consulting opportunities:

Consultation hours: by email appointments

12. Reference literature (compulsory, recommended):

- Lecture notes
- Downloadable materials: www.hds.bme.hu

13. Home study required to pass the subject:

Contact hours	28	h/semester
Home study for the courses	0	h/semester
Home study for the mid-semester checks	8 x 2	h/check
Preparation of mid-semester homework	0	h/homework
Home study of the allotted written notes	0	h/semester
Home study for the exam	18	h/semester
Totally:	**=30×2=60**	**h/semester**

14. The data sheet and the requirements are prepared by:

Name:	Title:	Affiliation (Department):
György Paál, PhD	Associate professor	Dept. of Hydrodynamic Systems

15. Contact person for administrative questions:

Kálmán Klapcsik, kklapcsik@hds.bme.hu