Phd in Mechanical Engineering

Manufacturing Specialization
elective subject

SUBJECT DATA SHEET AND REQUIREMENTS

last modified: 26th January 2015

MANUFACTURING ACCESSORY DEVICES I. BMEGEGT9004

Gyártóeszközök I.

1	Code	Semester nr. or fall/spring	Contact hours/week (lect.+semin.+lab.)	Requirements p / e / s	Credit	Language
	BMEGEGT9004	**spring**	**1+1**	**p**	**3**	**English**

2. Subject's responsible:

Name:	Title:	Affiliation (Department):
Dr. Sándor Markos	Senior lecturer	Dept. of Manufacturing Science and Technology

3. Lecturer:

Name:	Title:	Affiliation (Department):
Dr. Sándor Markos	Senior lecturer	Dept. of Manufacturing Science and Technology
Dr. Gyula Mátyási	Associate Professor	Dept. of Manufacturing Science and Technology

4. Thematic background of the subject:
The subject extends the tool design knowledge to the manufacturing science oriented PhD students.

5. Compulsory / suggested prerequisites:
Suggested: Advanced Manufacturing (BMEGEGTMW01)

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

This course is about the advanced tooling design and manufacturing. Hierarchy of manufacturing accessory devices planning, material removal and shaping, functional analysis. It would focus on the applied tool materials and geometry, the cutting and mold tool manufacturing methods, characterization, and applications. Different types of production tooling will be presented, that can influence the mechanical, thermal, electrical, effects onto the application processes. The major manufacturing methods these tooling will be discussed.

7. Method of education:
Lecture 1 h/w, seminar 0 h/w, laboratory 1 h/w, 1 homework

8. Detailed thematic description of the subject:

Week	Lecture	Lab.
1	Homework projects	Homework projects
2-3.	Cutting and die tool materials. Cutting tool edge geometry.	Edge geometry analysis
4-5	Machinability of the workpiece materials. Cutting ability of the tools.	Case studies
5-6.	Tool surface engineering, surface coating and engraving. Measuring of the tools.	Surface geometry analysis
6-8.	Mold tool and insert design and manufacturing.	Tool path planning

9-12.	Mold insert manufacturing by EDM operation . Machining in hard condition.	Case studies
13-14.	Mold tool cost calculation theory and practice	Cost calculation examples, software
14	Tool design documentation	Presentation of the homework.

9. Requirements and grading

a) in term-period

One must participate in at least 70% of the lab classes 1 obligatory homework must be worked out and submitted until the deadline. The homework must reach at least 40% of the maximum points. Late submitted homework can reach maximum 80%.

b) in examination period

N.A.

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

The following students are subject to disciplinary measures.

1. Those students who apply unauthorized means (book, lecture notes, infocommunication means, tools for storing and forwarding electronic information, etc.), different from those listed in the course requirements or adopted by the lecturer in charge of the course assessment, in the written *mid-term exams* taken, or invite or accept any assistance of fellow students, with the exception of borrowing authorized means, will be disqualified from taking further mid-term exams in the very semester as a consequence of their action. Further to this, all of their results gained in the very semester will be void, can get no term-end signatures, and will have no access to Late Submission option. Final term-end results in courses with practical mark will automatically become Fail (1), the ones with exam requirements will be labelled Refused Admission to Exams.
2. Those students whose *homework* verifiably proves to be of foreign extraction, or alternatively, evident results or work of a third party, are referred to as their own, will be disqualified from taking further assessment sessions in the very semester as a consequence of their action. Further to this, all of their results gained in the very semester will be void, can get no term-end signatures, and will have no access to Late Submission options. Final term-end results in courses with practical mark will automatically become Fail (1), ones with exam requirements will be labelled Refused Admission to Exams.
3. Those students who apply unauthorized means (books, lecture notes, infocommunication means, tools for storing and forwarding electronic information, etc.), different from those listed in the course requirements or adopted by the lecturer in charge of the course assessment, in the written *term-end exams* taken, or invite or accept any assistance of fellow students, with the exception of borrowing authorized means, will immediately be disqualified from taking the term-end exam any further as a consequence of their action, and will be inhibited with an automatic Fail (1) in the exam. No further options to sit for the same exam can be accessed in the respective exam period.
4. Those students who alter, or make an attempt to alter the already corrected, evaluated, and distributed test or exercise/problem,
    i. as a consequence of their action, will be disqualified from further assessments in the respective semester. Further to this, all of their results gained in the very semester will be void, can get no term-end signatures, and will have no access to Late Submission options. Final term-end results in courses with practical mark will automatically become Fail (1), ones with exam requirements will be labelled Refused Admission to Exams;
    ii. and will immediately be inhibited with an automatic Fail (1) in the exam. No further options to sit for the same exam can be accessed in the very same exam period.

10. Retake and repeat

N.A

11. Consulting opportunities:

1 hr/week upon appointment by e-mail

12. Reference literature (recommended):

Markos S..: Manufacturing Accessory Devices - Online lecture notes.

13. Home study required to pass the subject:

Contact hours	28	h/semester
Home study for the courses	14	h/semester
Preparation of mid-semester homework	10	h/homework
Total:	**52**	**h/semester**

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

Name:	Title:	Affiliation (Department):
Dr. Sándor Markos	Senior lecturer	Dept. of Manufacturing Science and Technology