OSTBAYERISCHE TECHNISCHE HOCHSCHULE REGENSBURG
MASCHINENBAU

MECHANICAL ENGINEERING FAKULTY
Prof. Dr. Wolfram Wörner
International Co-ordinator

Regensburg, July 9th 2020

Translated copy of the official study module handbook, edition 2019

Administrative Details

Released at 30. 03. 2020:	Ostbayerische Technische Hochschule Regensburg
Name of the course of study:	Master Industrial Engineering (PO: 20192)
Module type:	Subject-specific elective modules

Sub-module name:	Advanced Materials and Manufacturing Processes
Sub-module abbreviation:	AMP
Responsible person:	Prof. Dr. Wolfram Wörner
Faculty:	Mechanical engineering
Teaching staff / lecturers:	Prof. Dr. Wolfram Wörner
Supply frequency:	Only in the summer semester
Form of instruction:	Seminaristic instruction
Semester according to the curriculum:	1st. or 2nd
Volume of teaching:	4 hours per week
Teaching language:	English
Workload, [ECTS credits]	5
Time required:	On-campus studies: 60h Self-study: 90 h

Type of examination/performance evaluation: 2 Study papers, 2000 words each

Content and qualification objectives

- Targeted optimisation of materials; e. g. for more efficient production, lightweight construction, high-temperature use, corrosion applications, etc. ·
- Manufacturing processes for materials with optimized properties
- Mechanisms and processes for the optimization of material properties
- Working with modern materials based on current examples

Learning objectives: professional competence

After successful completion of the sub-module, students are able to:

- Describe the interaction between material properties and manufacturing parameters (1) and apply it to optimisation processes (3)
- To assess the optimisation of material applications under the influence of design, manufacturing process, material and operating conditions (3).

Learning objectives: personal competence

After successful completion of the sub-module, students are able to:

- Realistically assess their own level of knowledge in relation to the subject area (3)
- To evaluate materials in their life cycle (extraction - application - recycling) (3)
- Describe the consequences of material selection for humans and the environment (1)

Teaching materials offered

Specialist articles, Textbooks, List of literature, Standards, Script, Software, Exercises; E-Learning: GRIPS, https://elearning. uni-regensburg. de/course/view. php?id=5867

Educational media

Computer/beamer, blackboard, videos

Literature

Contemporary technical articles, conference contributions and textbooks