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: 90h
Type of examination/parentformance 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


Educational media

Computer/beamer, blackboard, videos

Literature

Contemporary technical articles, conference contributions and textbooks