

# Engineering Projects Program

1	<b>Module number</b> MBB 3619	<b>Study program</b> MBB	<b>Semester</b> 4	<b>Start in</b> <input checked="" type="checkbox"/> WS <input checked="" type="checkbox"/> SS	<b>Duration</b> 1 semester	<b>Module type</b> ---	<b>Workload (h)</b> 150	<b>ECTS points</b> 5
2	<b>Courses</b>		<b>Teaching and learning form</b>		<b>Contact time</b>		<b>Self-study (h)</b>	<b>Language</b>
	a) Project		Project work		<b>(SWS)</b> 1	<b>(h)</b> 25	125	English
3	<p><b>Learning outcomes and competencies</b></p> <p>The Engineering Projects Program offers projects where students learn how to work on a concrete, practical and clearly time-limited task from a sub-field of mechanical engineering using the methods of project management. The projects are carried out in a group consisting of 3 or 4 students each. Deviations from the planned group size require the approval of the Dean of Studies. At the beginning of the semester, project management methods, techniques and tools as well as techniques for the presentation of work results are introduced by the project supervisor. This builds student teamwork skills, project management skills, and self-organization skills as part of the project implementation that then takes place. In addition, students begin to build their competencies to present and appropriately present work results in writing in a clearly organized, written, engineering paper that is understandable to professionals.</p> <p>The required information, data and documents for the processing of the respective tasks are obtained by the project teams themselves within the framework of the project processing. On a weekly basis, the students present the partial results achieved to the project groups in a meeting with the project supervisor. The respective project supervisor coaches the students of the project group in the context of these meetings with regard to project management and tasks.</p> <p>If the number of groups makes it technically and spatially possible, three presentations of the individual projects of increasing length will be given during the course of the project using suitable presentation techniques either to all project groups of the semester or to a limited number of project groups for technical reasons. As a rule, each project group member personally participates in these presentations of his or her own project. Attendance is compulsory for these presentations.</p> <p>The project results are documented in written report at the end of the project.</p> <p>After the project has been successfully completed, students within the thematic subject area of the project ...</p> <p><b>Knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>• ... explain the basic procedure for working on concrete practical tasks from a subfield of mechanical engineering in a team and understand the mechanical engineering/engineering interrelationships.</li> <li>• ... understand and explain the importance of project management and project management methods, techniques and tools.</li> <li>• ... understand and explain presentation techniques.</li> <li>• ... understand and describe mechanical engineering fundamentals from a subfield.</li> </ul> <p><b>Use, application and generation of knowledge</b></p> <p><i>Use and transfer</i></p> <ul style="list-style-type: none"> <li>• ... Write technical reports, prepare and conduct presentations.</li> <li>• ... Apply project management methods, techniques and tools in a goal-oriented manner.</li> <li>• ... work in a team.</li> <li>• ... familiarize themselves with new ideas and subject areas starting from basic knowledge.</li> <li>• ... recognize and classify technical correlations in subareas, analyze tasks, draw conclusions and derive or develop solutions.</li> </ul> <p><i>Scientific innovation</i></p> <ul style="list-style-type: none"> <li>• ... take different perspectives and points of view on an issue, weigh facts against each other and make an assessment.</li> <li>• ... apply methods and tools to gain new knowledge in mechanical engineering.</li> <li>• ... if required in the project, create new mechanical engineering models or independently develop approaches for new concepts and assess their suitability, set up hypothesis tests and optimize mechanical engineering systems.</li> </ul> <p><b>Communication and cooperation</b></p> <ul style="list-style-type: none"> <li>• ... actively collaborate/cooperate within a team/organization and obtain information by communicating in order to find adequate solutions for the set project task.</li> <li>• ... give theoretical and methodical reasons for the solution of the task.</li> </ul> <p><b>Scientific self-image/professionalism</b></p>							

	<ul style="list-style-type: none"> <li>• ... derive decision recommendations, also from a social and ethical perspective, on the basis of the analyses and assessments prepared for specific projects.</li> <li>• ... reflect and assess their own abilities in a team comparison.</li> </ul>
4	<p><b>Contents</b></p> <p>a) Independent work on a given individual project task in project teams (3 to 4 students) under the guidance of a supervisor.</p>
5	<p><b>Participation requirements</b></p> <p>obligatory: none recommended: none</p>
6	<p><b>Forms of examination and requirements for the award of credit points</b></p> <p>a) Technical report (graded) and project presentations (not graded).</p>
7	<p><b>Use of the module</b></p> <p>a) Bachelor Thesis</p>
8	<p><b>Person responsible for the module and full-time lecturers</b></p> <p>a) The Dean of Students is in charge of the framework concept "Engineering Projects Program". The supervision of the project work is carried out by the respective project supervisor (full-time lecturer) and if needed supported by additional laboratory staff.</p>
9	<p><b>Literature</b></p> <ul style="list-style-type: none"> <li>• Lecture notes and supplementary technical literature depending on the topic of the project work</li> <li>• Heike Hering: Technical Reports, 8th edition, Springer Vieweg Verlag, 2018, ISBN 978-3-658-23484-3 (eBook).</li> <li>• Nils Schulenburg: Exzellent präsentieren, 1st edition, Springer Gabler Verlag, 2018, ISBN 978-3-658-12303-1 (eBook).</li> <li>• Jürg Kuster [and eight others]: Handbook of Project Management, 4th edition, 2019, Springer Gabler Verlag, ISBN 978-3-662-57878-0 (eBook).</li> </ul>
10	<p><b>Last updated</b> 31.01.2023</p>