

Module name / title	Plant Engineering
Type of module	compulsory-elective
Competencies gained Learning Outcome	<p>Specialist competency (knowledge and understanding) Students are able to ...:</p> <ul style="list-style-type: none"> differentiate between the phases of a process plant asset life cycle. define and interpret requirements of the different phases of a process plant life cycle. define interfaces between the different phases of a process plant life cycle. select methods for the evaluation of the safety of processes and process plants. define measures to ensure safe processes and process plants. <p>Methodological competency (use, application and generation of knowledge) Students are able to ...:</p> <ul style="list-style-type: none"> structure and plan process plant engineering and construction projects. execute projects along the asset life cycle. design safe processes and to build and operate safe plants. <p>Social competency (communication and cooperation) Students are able to ...:</p> <ul style="list-style-type: none"> discuss and elaborate solutions in interdisciplinary teams. represent their own point of view. give presentations. write papers. <p>Self-competency (scientific self-image, professionalism) Students are able to ...:</p> <ul style="list-style-type: none"> justify their own professional actions with theoretical and methodological knowledge and reflect on alternative designs.
Content of the module	<ul style="list-style-type: none"> Projects: phases, execution structures, involved parties Technology development Preliminary planning, feasibility study Basic and detail engineering, FEED Procurement, expediting and inspection Civil and construction Commissioning and operation Maintenance/inspection
Learning and teaching types / methods / media types	Taught Seminar (computer with projector, blackboard, overhead and problem sheets)
Language	English

Module manual M.Sc. Wirtschaftsingenieurwesen

<p>Module prerequisites Requirements for participation (previous knowledge)</p>	<p>Recommended:</p> <ul style="list-style-type: none"> • Basic knowledge about process engineering/design and process plants
<p>Applicability of the module</p>	<p>This module mainly covers the phases of the asset life cycle of process plants. As such, it is associated with the modules</p> <ul style="list-style-type: none"> • Digital Plant Design • Optimization • Plant Operation and • the non-technical module business skills • Project Work • Master Thesis
<p>Requirements for the award of credit points (Study and exam requirements)</p>	<p>Regular examination type for Plant Engineering: oral presentation (PL) Further possible examination type: home project, written exam, portfolio examination</p> <p>Regular examination type for Process and Plant Safety: written exam (PL) Further possible examination types: home project, oral presentation, oral examination</p> <p>Where more than one possible examination type is used in the course, the examination type to be used is to made known by the responsible lecturer at the start of the course</p>
<p>Workload / Credits</p>	<p>2,5 CP / 2 SHW</p> <p>In-class lecture: 2 SHW x 18 weeks = 36 h</p> <p>Self-study: 75 h –36 h = 39 h</p>
<p>Duration of the module semester / frequency</p>	<p>One semester / winter semester / every other semester</p>
<p>Literature</p>	<ul style="list-style-type: none"> • Helmus, F. P.: Process Plant Design – Project Management from Inquiry to Acceptance. WILEY-VCH Verlag, Weinheim, 2008. • Moran, Sean: An applied guide to process and plant design. Butterworth-Heinemann, Oxford 2015 • Mosberger, E.: Chemical Plant Design and Construction, Ulmann's Encyclopedia of Industrial Chemistry. WILEY-VCH Verlag, Weinheim, 1992, 5th, p 477-558. • Peters, M. et al.: Plant Design and Economics for Chemical Engineers. McGraw-Hill Professional, 2003. • Sattler, K., Kasper, W.: Verfahrenstechnische Anlagen – Planung, Bau und Betrieb, Band 1 und 2. WILEY-VCH Verlag, Weinheim, 2000. • Bernecker, G.: Planung und Bau verfahrenstechnischer Anlagen. Springer Verlag, Berlin, 2001.