

MAE Master Program Expected Learning Outcomes (ELOs)



	Short Form	Number	Detailed description
Generic ELOs (this wording directly applicable in resp. courses)	Competence in the definition and solving of technical tasks	GELO1	Ability to define a technical task or problem, to analyze/structure it and formulate a strategy to solve it
	Awareness of engineering responsibility	GELO2	Awareness and sensitivity towards an engineer's responsibility for sustainability and aspects such as lifecycle costs, reliability, safety, engineering's impact on society and nature etc.
	Report writing skills	GELO3	Ability to write a professional-quality report on a research or problem-solving project
	Ability to work as team member	GELO4	Ability to conduct a project as a team member, to take responsibility for contents and schedule, to deliver the results on time
	Competence in literature research and summary	GELO5	Ability to independently conduct a literature study on a given topic, identify and acquire relevant sources, extract and sum up the essence in writing.
	Presentation skills	GELO6	Ability to present a project in front of a professional audience
	Project management and team leadership skills	GELO7	Ability to manage a project as a team lead, to structure content and schedule, assign responsibilities, to follow up on progress and take measures to prevent delays, to act as the communication channel for the complete team
	Self-Guided Learning (Lifelong Learning)	GELO8	Ability to enhance and deepen one's knowledge and skills without specific instructions or pre-selected materials
$Specific \ ELOs \\ (applicable to specific field/contents of resp. courses, worded specifically in course descriptions)$	Knowledge and understanding methodology of simulation and design	SELO1	Knowledge and understanding of principles, techniques and methodology of simulation and design
	Knowledge and understanding of scientific fundamentals of technical systems	SELO2	Knowledge and understanding of scientific fundamentals relevant for the understanding of the behavior of solid bodies, structures, mechanisms and fluids in engineering applications
	Knowledge of technical systems and technologies in the field	SELO3	Knowledge of the State-of-the-Art of technical systems and technologies in the field
	. Competence in analysis and modelling of technical scenarios	SELO4	Ability to transform an actual technical scenario into a valid model that can be used for a simulation or design
	Skills of using commercial software for simulation in engineering applications	SELO5	Ability to use commercial software to simulate the bahavior of solid bodies and/or fluids relevant for engineering applications
	Skills of using commercial software for design in engineering applications	SELO6	Ability to apply methodology and commercial CAD software to design and reverse engineer mechanical components/systems and consumer goods
	. Knowledge of engineering materials, failure modes and production techniques	SELO7	Knowledge of engineering materials, modes of failure and degradation as well as applicable production techniques
	Knowledge of appliccable laws, guidelines, regulations	SELO8	Knowledge of appliccable laws, guidelines, regulations
	Knowledge, understanding and ability to consider the human body in simulation and design	SELO9	Knowledge, understanding and ability to consider the human body in simulation and design