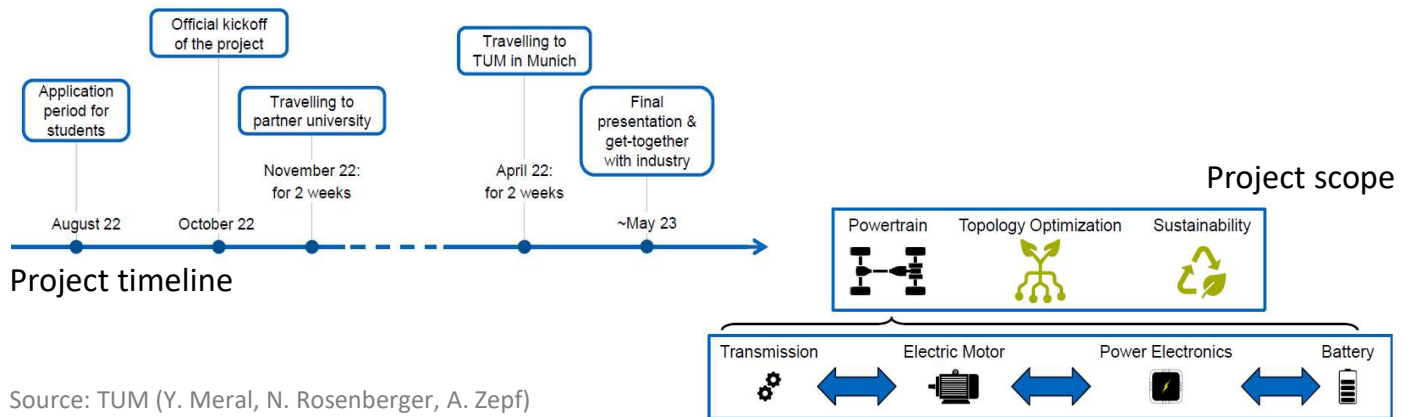


Open Master Thesis



globalDrive 2023 - International Student Project on Electric Powertrain



Source: TUM (Y. Meral, N. Rosenberger, A. Zepf)

global Drive is an international student research project that is organized by TU Munich in cooperation with TU Graz. Target is the design of an electric powertrain, including battery system, power electronics, e-motor and transmission – an that in a group of 8-12 students from different universities. During the project work, there will be several onsite- and online meetings.

The concrete master thesis topic within this project will be defined according to the actual master student's interests in discussion with the supervising professor, e.g. with focus on vehicle integration, electric motor design, battery design, topology optimization, sustainability aspects.

Research Objectives:

- Holistic system approach
- Time-efficient concept to itemize in design phase
- Early consideration of interdependencies
- Identify crucial vehicle and component parameters

Challenges to be addressed:

- Keep accuracy while reducing simulation time
- Multidisciplinary design in early phase
- Create transparency between departments
- Enhance development process with new technologies

Requirements:

- Master study mechanical engineering, electrical engineering, informatics, or similar
- Basic knowledge of automotive technology and propulsion systems
- Self-organized working skills, open for working in an international team

Timeline: October 2022 – May 2023

Working locations: TU Graz, Institute of Automotive Engineering (Assoc. Prof. Hirz) & TU Munich, Institute of Automotive Technology (Prof. Lienkamp) & TU Munich, Institute of Sustainable Mobile Drivetrains (Prof. Jaensch)

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