Course: Project Prototype — credits: 10

Course code	WBVP26PP
Name	Project Prototype
Study year	2026-2027
ECTS credits	10
Language	English
Coordinator	H.J. Grijpstra
Modes of delivery	Education
Assessments	Professional skills - Assignment Project Prototype - Assignment

Learning outcomes

The student:

- can define the problem statement, objectives and client's requirements for a business project in which a machine or tool will be designed, engineered and built
- creates a new design in the context of a business project by applying tools and methods accepted in practice
- in the context of a business project, the student can further elaborate the result from the design phase into a fully dimensioned product and subsequently realize a prototype of this product by applying tools and methods accepted in practice
- for a monodisciplinary project, the student can draw up a plan or approach with which the content of the project is determined and structured and with which the workload and task distribution of the project members is determined and adjusted where necessary
- communicates effectively with a client regarding technical issues in a manner accepted in the professional field
- works in a self-chosen role with colleagues to achieve project objectives and evaluates the results achieved in the light of the set goals

Content

This course offers a hands-on learning experience concentrated around the design and construction of an electric motor-driven mechanical solution.
Students will engage in creating a device with moving components such as shafts and bearings, addressing mechanical challenges like strength, bending, shear, and fatigue. The course emphasizes practical problem-solving, with students developing a proof of concept through techniques like welding, machining, and forming, culminating in a design review presentation.
Throughout the semester, the project will evolve in tandem with modules teaching technical and social skills relevant to each phase. Workshop techniques, including turning, milling, waterjet cutting, sheet metal forming, and welding, will be integral to the curriculum, especially in the later weeks. The course includes mandatory activities like project meetings, design and engineering reviews, prototype demonstrations, workshop training, and skill development classes. The students, as a group, will start with analysing the chosen technical problem using the "Methodical design method". During this period, information regarding topics such as the plan of approach, project organization, workshop skills, and portfolio making will be acquired. During the design and engineering stage, the student presents solutions and practices skills by advising an actual client. Ultimately, the client will give a "Go-No-go" decision to a proposed solution.
Although the project is a group effort with a common goal, individual roles will also be assigned. These roles may include project manager, chairman, minute taker, planner, and mechanical lead engineer. It's up to the group to divide the roles and evenly distribute the workload amongst each other regarding the project tasks.
Overall, the project aims to provide a comprehensive learning experience that combines theoretical knowledge with practical skills, allowing students to develop their personal and professional competencies.

Included in programme(s)

Mechanical Engineering VWO a 3-year variant

School(s)

Engineering, Life Sciences & ICT

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