Minor Smart Product Development
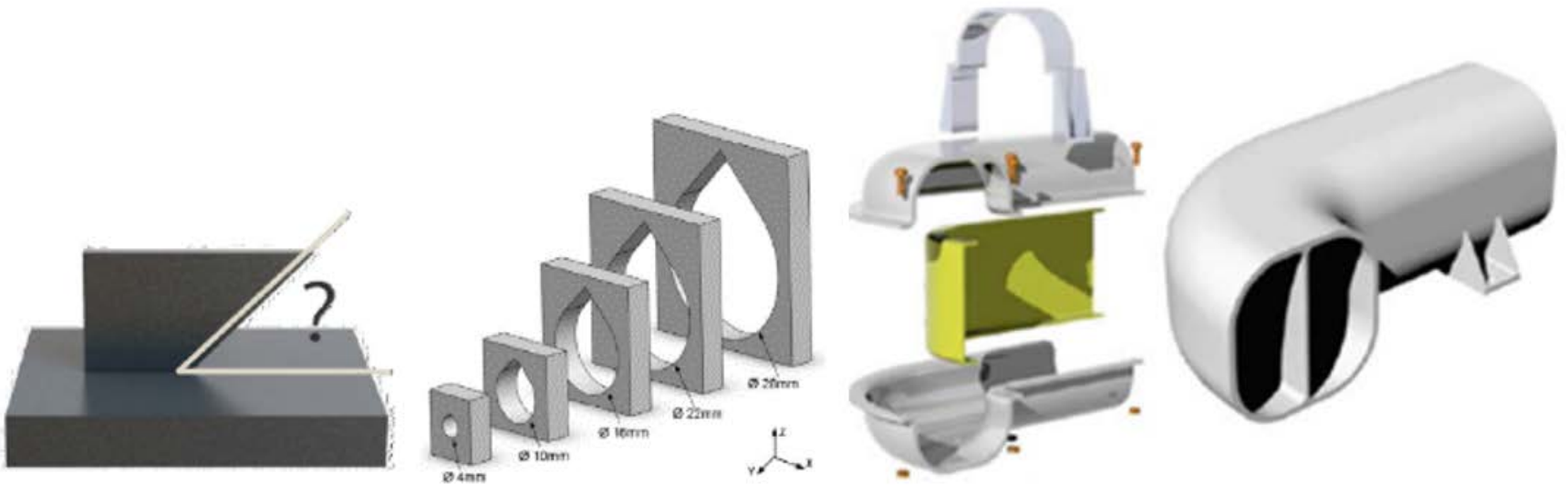# with Additive Manufacturing (SPDAM)

In-depth technical minor on Additive Manufacturing (AM) also known as 3D-printing.

Entry requirements: technical bachelor study, e.g. Mechanical engineering, Mechatronics, Automotive, Applied Physics, or a comparable study.
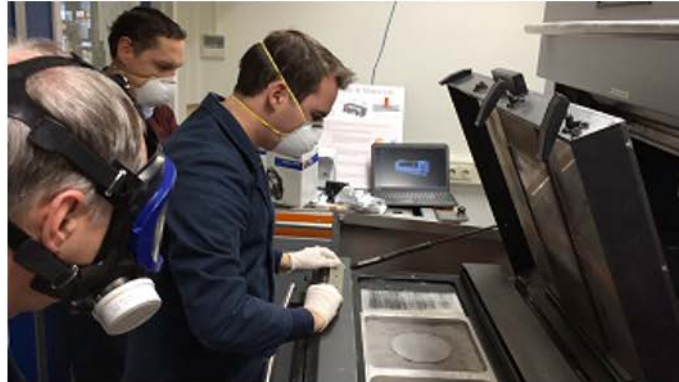
English study materials, and in case of participating international students the lectures will be English spoken.

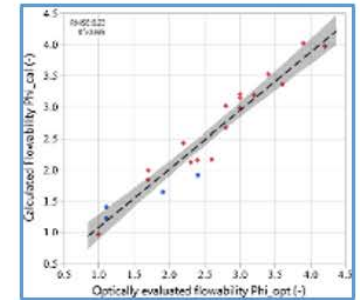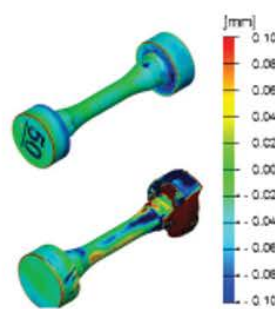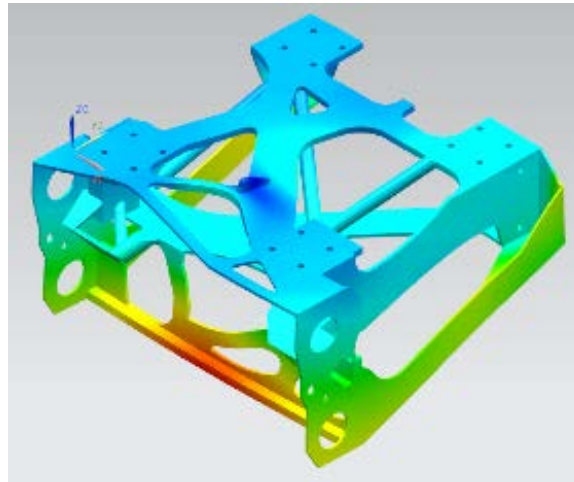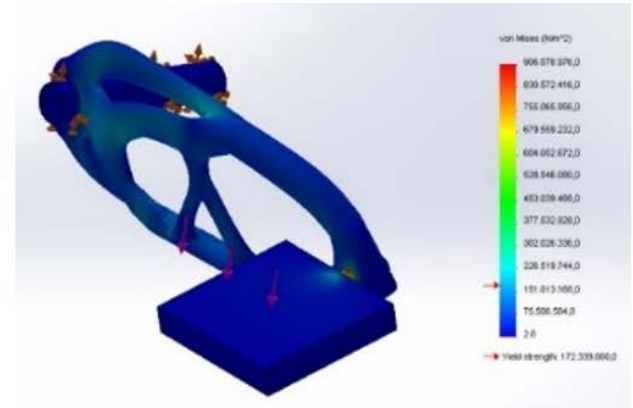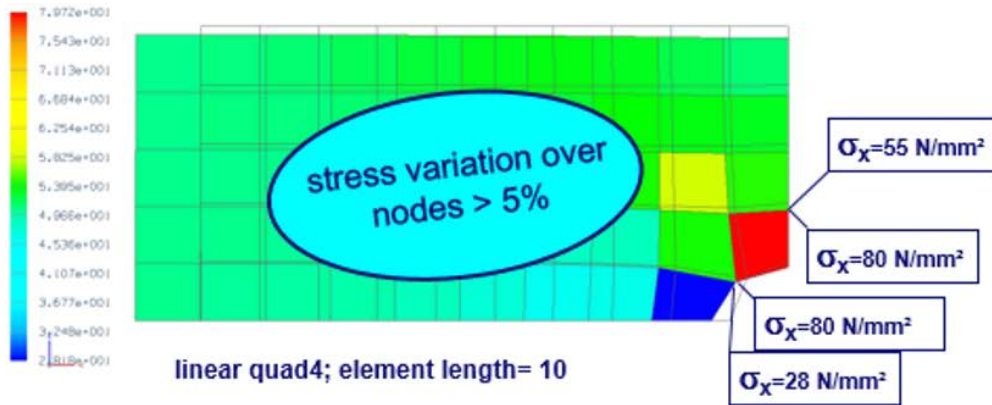| Program	Contents
DFAM Theory (4 EC)	**Design for Additive Manufacturing** • Quarter 1: Design guidelines, economic aspects, case study • Quarter 2: Killer application identification (project)
PSAM Practicals (4 EC)	**Practical Skills for Additive Manufacturing** • Production preparation & Safety • Post processing • Reverse engineering & Testing
PM11 Theory (4 EC)	**Production technology and Materials** • Properties of materials • Heat treatment • Testing of materials
CM11 Theory & Computer Lab (4 EC)	**Stress analysis and Optimization** • FEM theory and background • Topology optimization
EP11 Theory & Computer Lab (4 EC)	**Heat and Flow analysis** • Principles of heat & flow transfer • FEM for heat & flow modeling (practice)
IPDAM Project (10 EC)	**Project Integrated Product Development with AM**

DFAM   Design for Additive Manufacturing

PSAM   Practical Skills for Additive Manufacturing

PM11 Production technology and Materials

stress variation over nodes > 5%

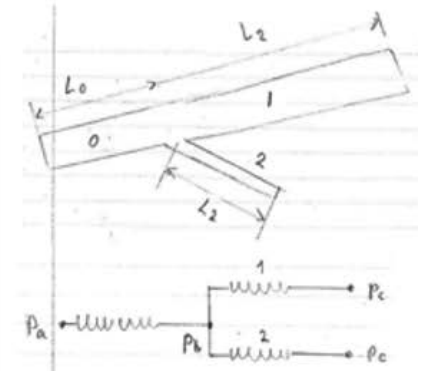σ_x=55 N/mm²
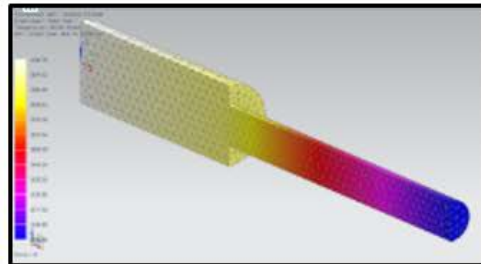
σ_x=80 N/mm²

σ_x=80 N/mm²

σ_x=28 N/mm²

linear quad4; element length= 10
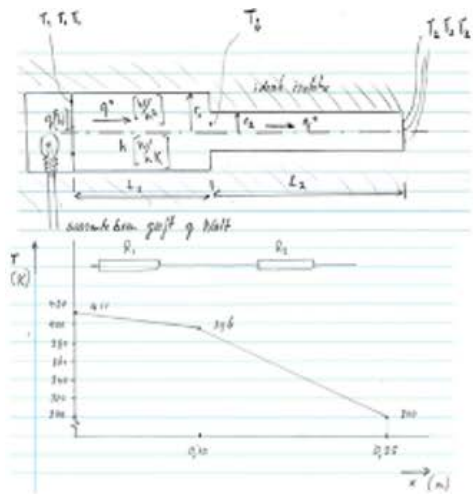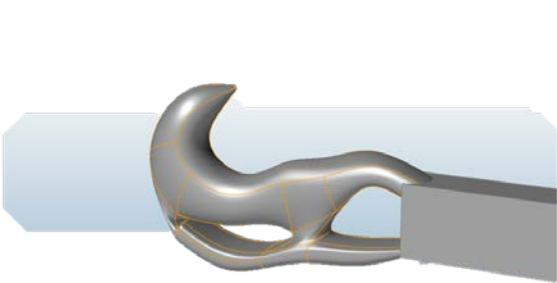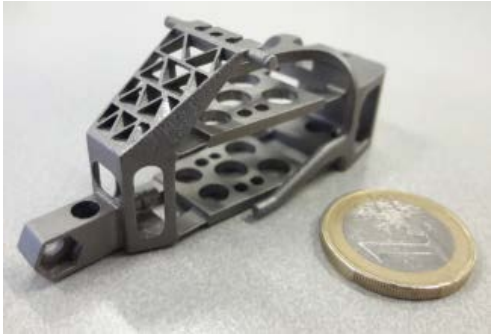
EP11   Heat and Flow analysis

IDAM   Project Integrated Product Development for Additive Manufacturing

Location:
Fontys University of Applied Sciences, School of Engineering,
Rachelsmolen 1, 5612 MA Eindhoven, 08850-77333.

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Enrollment:
- Fontys students [ProgRESS](#)
- External students [KiesOpMaat](#)

http://tinyurl.com/spdam-video