Course Schedule

THE DESIGN FOR ADDITIVE MANUFACTURING (AM) COURSE IS DIVIDED INTO MORNING AND AFTERNOON SESSIONS, WITH THE MORNING COVERING THEORETICAL ASPECTS OF AM AND DESIGN FOR AM (DFAM). HANDS–ON EXERCISES WILL PUT THE THEORY INTO PRACTICE. TIMING OF THE PRESENTATIONS HANDS–ON WILL BE FLEXIBLE, DEPENDING ON THE KNOWLEDGE AND EXPERIENCE OF THE PARTICIPANTS.

LUND UNIVERSITY
Commissioned Education

DAY 1	MORNING SESSION		AFTERNOON SESSION	
Topic	Details		Topic	Details
Intro to AM, the State of the industry and DfAM.	Recent AM growth trends and developments around the world. Benefits of AM, in the context of DfAM, how AM is being applied, and how certain parts can be designed for AM.		Intro to DfAM. Design for mass-customization exercise.	Examination of existing company parts to see how they might be improved for AM. Hands-on exercise to design a custom product using a combination of CAD, 3D scanning, and STL editing software.

DAY 2	MORNING SESSION		AFTERNOON SESSION	
Topic	Details		Topic	Details
AM process: from CAD to part. Designing for Metal AM.	Complete AM process chain, from CAD part creation, to part production. Popular AM technologies, file formats, and working with Magics. Specific issues and guidelines around designing for metal AM, including anisotropy, process constraints, and material properties.		Topology optimization and mesh structures.	Hands-on session on designing parts for additive manufacturing. Optimizing the strength-to-weight ratio of selected company parts using Inspire from solidThinking and netfabb from Autodesk for lattice/mesh structures.

DAY 3	MORNING SESSION		AFTERNOON SESSION	
Topic	Details		Topic	Details
Designing for other AM processes, and metal AM. Tooling and indirect AM production methods. Part consolidation.	Specific issues and design guidelines surrounding polymer (LS, SL, etc.), and metal AM, including support structures for heat transfer and anchoring. Design guidelines. Post-processing. Tips and tricks for using AM for injection molding tools, sheet metal forming tools, etc. Implications of part consolidation for AM. Hands-on exercises in part consolidation.		AM in the near future and wrap-up.	Looking at where AM and design software tools are headed in the near future, and the implications on DfAM.