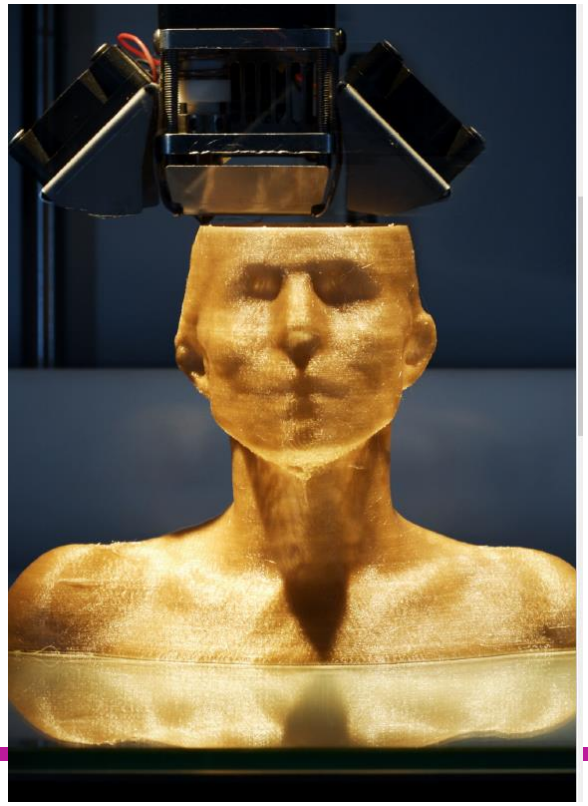
FiTech Summer Boost 2019

Additive Manufacturing and 3D-Printing

FITECH SUMMER BOOST 2019!

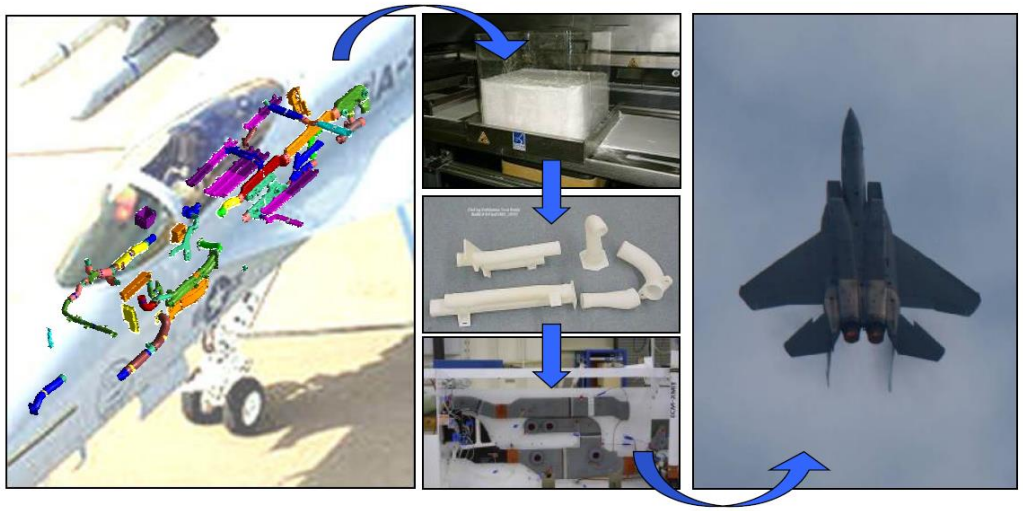


FiTech Summer Boost 2019

Additive Manufacturing and 3D-Printing

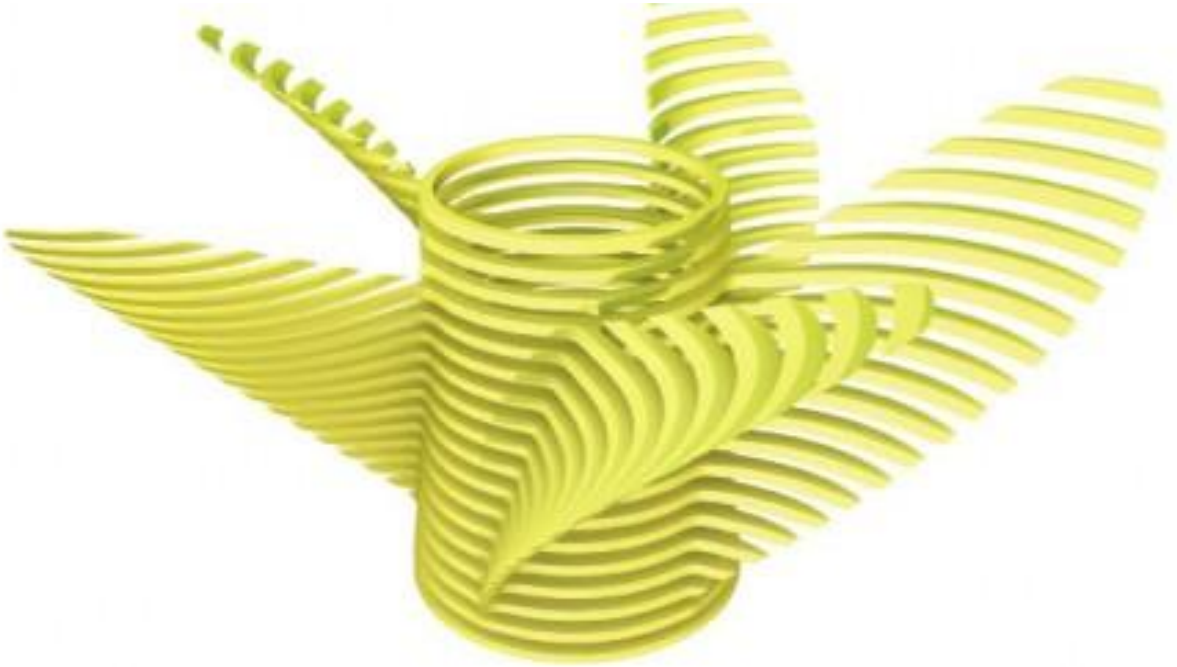
Prof. Jouni Partanen Aalto University

The Boeing company has been utilizing SLS for flight hardware in regular production since 2002, for both military[2] and commercial[3] programs



3D-Printing – objects are made out of slices

- Stacking up 2D images you can make 3D objects
- Conceptually simple process – great for automation



Course Structure

05/2019

The first part of the course presents widely AM and 3D printing technologies and design aspects that are deepen by weekly group assignments. The assignments are presented before next week lecture in a miniseminar.

- 5 x 3 h lectures
- 4 x weekly group assignments
- 4 x miniseminars before the lecture

06–07/2019

In the second part, students will run a project in AM.

- Project: groups of five identify the problem, innovate AM solution, design AM model and print AM prototypes.
- Lecturers direct and support the project development in 3–5 appointments in Turku.
- Groups select one person, five in total, to take part in **Nottingham conference** (www.additiveinternational.com/about/).

08/2019

Third part is for dissemination of project results.

- Groups evaluate group activity
- Groups present their project in a "Shark Tank" 16th of August 2019

Place:

Turun AMK, ICT-City, Joukahaisenkatu 3 A, room C2034

Time:

12-15 (Please arrive at 12 o'clock not 12:15)

Schedule:

WEEK	M	Weekly events
Fri 17th	MAY	**1st lecture: Introduction to AM and 3D printing**
		Project assignment
Fri 24th		**2nd lecture: Concept creation and Design**
wed 29th		**3rd lecture: Redesign of components**
		1st support appointment
Fri 7th	JUNE	**4th lecture: Business opportunities and IPR**
Fri 14th		**5th lecture: 3D printing clinic**
Tue 25th		2nd support appointment
Fri 5th		3rd support appointment
Fri 19th		4th support appointment
Fri 2nd	AUG	5th support appointment
		3D printing of final parts
Fri 16		"Shark Tank"

Teaching Staff

Kimmo K. Mäkelä • 1st

Postdoctoral researcher (tutkijatohtori) on 3D manufacturing (printing) metals, Univ. of Oulu

Meri Kuikka, Aalto Univ, School of Business

Dr. Hossein Mokhtarian
Tampere Univ, Mech Eng

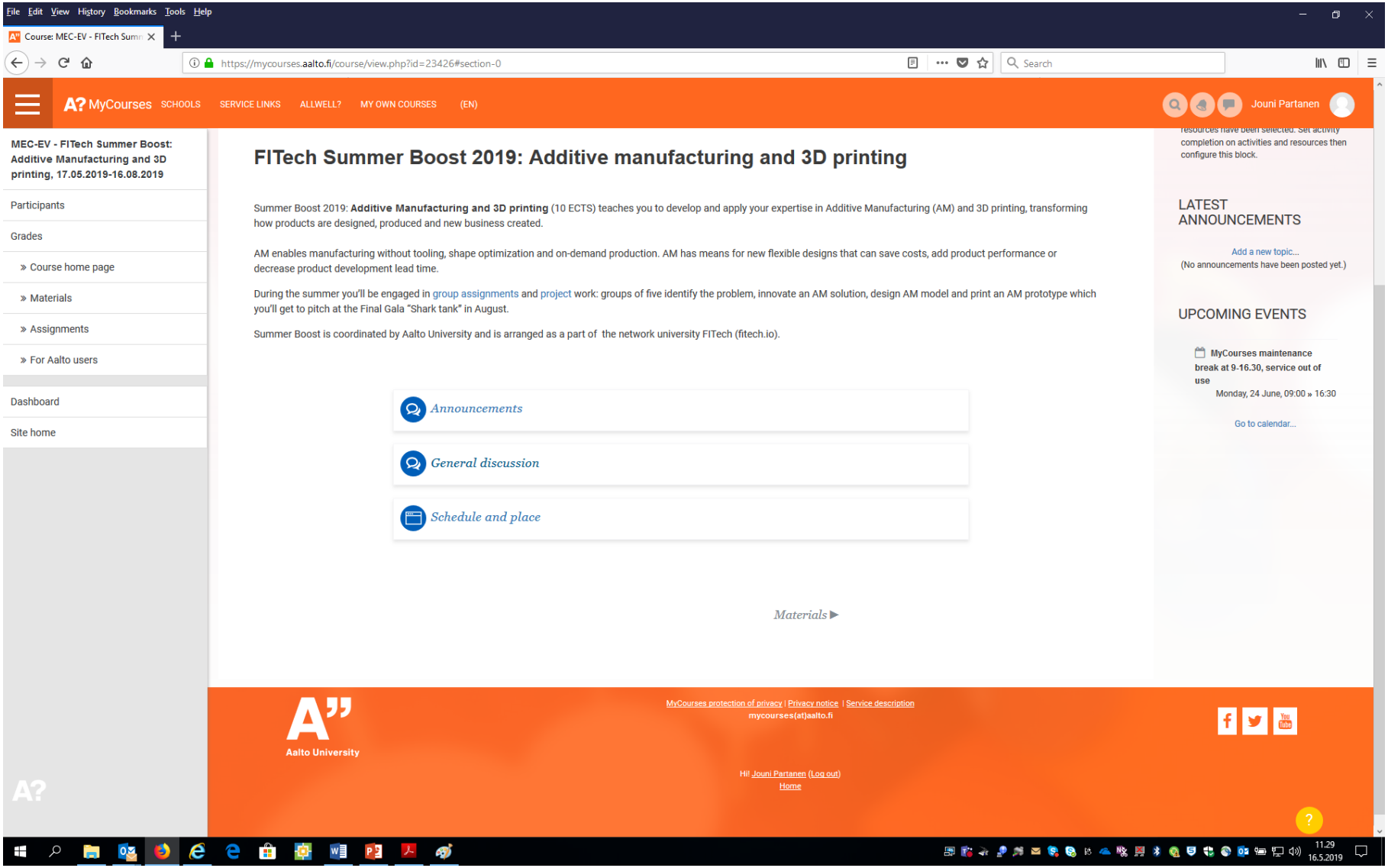
Teaching staff for the course

- Aalto University, ENG, SCI, BIS
- Lappeenranta University of Technology
- Tampere University
- University of Oulu
- University of Vaasa
- University of Lappland

Shark Tank

- EOS Finland
- Nokia, DIMECC
- Benefon, Business Finland

https://mycourses.aalto.fi/course/view.php?id=23426#section-0



https://www.additiveinternational.com/about/

Assessment Methods and Criteria:

Weekly activity in lectures: weight 10%, scale 1-5

Grade from home assignments : weight 30%, scale 1-5

Grade from final Project : weight 60%, scale 1-5

Thank you!

Jouni Partanen

Aalto University

Dept of Mechanical Engineering

jouni.partanen@aalto.fi, tel. +358 50 576 9804