

**19 – 30 January 2015**

**KU Leuven**

**Train the trainer sessions.**

# **TEMPUS MMATENG.**

**“Modernization of two cycles (MA, BA) of competence-based curricula in material engineering according to the best experience of Bologna Process ”**

## Training program.

	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
	17jan	18jan	19jan	20jan	21jan	22jan	23jan
9.15-12.15	arrival	free time	welcome to trainingcourse		study visit to ENSCL	MCAD/CAE NX9	MCAD/CAE NX9 installation
			Peter Arras	JB Vogt	Lille	Hans Valkenaers	Jasper Cerneels
			campus tour				Matthias Faes
			Peter Arras/Jasper Cerneels				Eleonora Ferraris
12.15-13.15			lunch	lunch	lunch	lunch	lunch
13.15-16.00			Eleonora Ferraris		study visit to ENSCL	MCAD/CAE NX9	Jan Ivens
			Kurt Coppens	JB Vogt	Lille	Hans Valkenaers	basics of material sciences
			Jasper Cerneels	Chris Peeters			
	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
	24jan	25jan	26jan	27jan	28jan	29jan	30jan
9.15-12.15			CES workshop	CES workshop	visit to material science	ECTS workshop	Siemens NX workshop
			J. Ivens		departement in KU Leuven	Hilde Creten (KUL)	Christophe Vandevelde
			Granta Design	Granta Design	Martine Wevers	Ann Pittonvils (KUL)	(Siemens Industry software)
					Katleen Vallons	Jan Raymaekers (KUL)	
12.15-13.15			lunch	lunch	lunch	lunch	lunch
13.15-16.00			CES workshop	CES workshop	visit to Metallogic	project meeting	Siemens NX workshop
			J. Ivens		<a href="http://www.metallogic.be">www.metallogic.be</a>		Christophe Vandevelde
18:00-21:00			Granta Design	Granta Design		project dinner	(Siemens Industry software)
	Saturday	Sunday					
	31jan	1feb					
	free time	departure					

Courses are given at KU Leuven, technology campus De Nayer, room F114, room A203, room A209.

### 17.01.2015

- Arrival of training participants to Brussels airport
- Transfer to Antwerp/Mechelen by train

### 19.01.2015      KU Leuven technology campus De Nayer

Address of the venue. Jan Pieter De Nayerlaan 5, 2860 Sint Katelijne Waver, **room F114**.

- 09.15– 09.30              Registration of the **training participants**
- 09.30 – 12.30            Welcome by Peter Arras, coordinator
- Campus tour in 2 groups.
- 12.30 – 13.30            Lunch in student restaurant
- 13.30 – 14.15            Prof Eleonora Ferraris, “The noble cause of manufacturing”

**MMATENG Training course**  
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KU Leuven – technology campus De Nayer

14.15-14.35	ing Kurt Coppens. Aerosol Jet printing of bio- and conductive inks
14.35-14.55	ing- Jasper Cerneels. Extrusion based printing of thermoplastic and composites
15.00-15.35	Advanced Manufacturing Laboratory @ Campus De Nayer, Lab visit (visitors divided in 2 of 3 groups)

### **20.01.2015 Lectures**

9.15- 12.15	Prof Jean Bernard Vogt (ENSCL). Metallurgy and Metal Alloys.
13.15-16.00	Prof Jeremy Bouquerel (ENSCL). Microstructure investigation techniques.

### **21.01.2015 Study visit to ENSCL (France)**

The bus leaves the campus at 8.00 am , pick-up in Mechelen at 8.15 am.

### **22.01.2015 Lectures**

9.15 – 12.15	ing Hans Valkenaers. Siemens NX9, startup course.
13.15 – 16.00	ing Hans Valkenaers. Siemens NX9.

### **23.01.2015 Lectures**

9.15- 10.15	ing Jasper Cerneels. installation of Siemens NX9 software and license borrowing tool.
10.30-11.10	ing Matthias Faes. “Reliability of FDM and SLS pieces”
11.10-11.50	Prof Eleonora Ferraris. “Advanced Machining of ceramics “
13.15-16.00	Prof Jan Ivens. “Basics of Material Sciences, our approach.”

### **26.01.2015 CES Workshop on material properties and selection of materials.**

The workshop starts at 8.30 am till 5.30pm.

(see page 6 for details of the workshop programme)

### **27.01.2015 CES Workshop.**

The workshop starts at 9.00 am till 12.30pm.

The afternoon is devoted to self work on an assignment.

In the afternoon is a CES-user meeting (2-4pm) which can be attended by people who already are working with CES.

### **28.01.2015 Study visit to MTM and Metalogic company.**

The bus leaves the campus at 8.35 am , pick-up in Mechelen at 8.45 am.

Visit to different labs at MTM (<https://www.mtm.kuleuven.be/English/>) (Materials engineering department in KU Leuven main campus.

10.00	SEM (Tom)
10.15	AFM, chemical lab (Stijn/Gijs)
10.30	mechanical testing, fatigue, impact
10.45	thermodynamics, geopolymers (Yiannis)
11.00	composites production, natural fibres
11.15	NDT, embedded optical fibres (Helge)
11.30	XRD, ceramics (Kim)
11.45	X-ray (Oksana/Gregory)

Visit to Metalogic (<http://www.metalogic.be/default.aspx> ). company specialized in corrosion problems.

For this visit the groups is split in 2 groups.

**29.01.2015 Workshop on ECTS. (By KU Leuven department on university organization)**

9.30-11.00	Workshop on competence based learning. Case study. labs of material sciences, Ann Pittomvils and Chris Peeters (lab manager)
11.00 -11.15	pauze
11.15-12.15	Bologna/ECTS at KU Leuven by Jan Raeymaekers
14.00-17.00	Consortium meeting to discuss workplan of the project. Dr Arnold Sterenharz and Elena Eynhorn will participate.
18.00-21.00	Evening consortium dinner offered by the project.

**30.01.2015 Workshop by Siemens Industry Software.**

9.15- 16.00	Workshop all day on CFD and FLOW (numerical simulation techniques) in NX. (Christoph Vandeveld, CAE Product/Business Manager BeNeLux)
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### Training participants list.

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<b>26<sup>th</sup> of January 2015, TEMPUS MMATENG project, KU Leuven Belgium</b>	
Main Lecturer Dr Claes Fredriksson – Granta Design Education Division Granta Design UK Invited Speaker and Lecturer – Professor Jan Ivens KU Leuven Belgium Workshop Facilitator and Speaker – Dr Tatiana Vakhitova Education Division Granta Design UK	
8.30 am	Registration & refreshments
9.00 am	Welcome, Introductions and Agenda Review
9.10 am	<b>The Materials of Engineering</b>
9.50am	Hands-on exercises
10.10 am	<b>Material Property Charts. mapping the materials universe</b>
10.50 am	Hands-on exercises
11.00 am	<b>Coffee Break</b>
11.20 am	<b>Manipulating Properties. chemistry, microstructure, architecture</b>
12.00 pm	Hands-on exercises
12.30 pm	<b>Lunch</b>
1.30 pm	Summary of the morning
1.40 pm	<b>Materials Selection. translation, screening, documentation</b>
2.20 pm	Hands-on exercises
2.40 pm	<b>Selecting Processes. shaping joining and surface treatment</b>
3.20 pm	Hands-on exercises
3.30 pm	<b>Coffee Break</b>
3.50 pm	<b>Ranking. material indices Overview and a Case Study – Professor Jan Ivens</b>
5.00 pm	<b>Introduction to the Granta Teaching Resource Website – Dr Tatiana Vakhitova</b>
5.15 pm	Wrap up & discussion
<b>27<sup>th</sup> of January, 2015</b>	
09.00	Coffee & refreshments
09.30	<b>Workshop “Materials and Sustainability” Part I</b>
10.30	Coffee Break (Group Work)
10.45	<b>Workshop “Materials and Sustainability” Part II</b>
11.45	Wrap up & discussion