

PROJECT



30 January 2019

Phelma
semester (2nd)

30 January 2019
23 May 2019

“Engineering
package”

Intitulé des Unités d'enseignement	details ECTS	Details	Evaluation	Professor in charge
UE Microtechnolgy				
CAD for microsystems	2	28	written 2h+ report	Libor RUFER
Microsystems II	2	20	written 1h	Matteo COCUZZA
Optoelectronics	2	20	written 2h	Jean-Emmanuel BROQUIN
UE Microelectronics				
Analogic circuits design	2	20	written 2h	Davide BUCCI
TP : Micro and nanosystems	4	40	report	Y. MORFOULI, M. BADEWIN, A. KUHN, C. WINKELMANN
UE Nanophysics and Nanostructures				
Advanced CMOS devices	1,5	16	written 2h	Quentin RAFHAY
Nanostructures : physics and transports	2,5	28	written 3h	Thierry OUISSE
Nanostructures for optical and magnetic applications	2	20	written 2h	Liliana PREJBEANU Laurent MONTES
UE Speciality courses				
Advanced microscopy	2	20	written 2h	Clemens WILKELMANN Hermann SELLIER
Advanced lithography	1	12	written 1h	Bertrand LE GRATIET
Integrated digital circuits design	2	20	written 2h	Lorena ANGHEL
Molecule of Life	1	12	written 1h	Marianne WEIDENHAUPT
UE SHS / SME				
Strategy & Finance	2	20	report	Alexandre ETUY
Project	3	32	viva+report	Liliana PREJBEANU
Communication at work	1	16	round table	Laurence PIERRET
UE REX				
REX	1	4	round table + report	Liliana PREJBEANU
TOTAL SEMESTRE 4		328		

“Engineering package”

- ❑ **Strategy & Finance** (20h, Alexandre Etuy)
- ❑ **Communication at work** (16h, Laurence Perret)
- ❑ **PROJECT**

Project Management (8h+9h+6h)

Technical Project (3 sessions)

Project Management

Gilles Sanfilippo , Pierre Chèvrier, Didier Bernard

- The objective of this module is to help students in the project. By focusing on the management aspect of this project, we want to help them implement a real strategy to complete their project and maximize their chances of success.
- As the number of start-ups continues to grow, and technological advances are faster and faster, it becomes crucial for any engineer to understand the set of processes that allow the creation, the development and the marketing of a product or service, from a technical point of view but also from a managerial point of view.
- The diffusion of new management tools resulting from Activity Based Methods or the use of Design To Cost methods in the industry since the beginning of the 2000s show that this course can be interesting for a young engineer wishing to start a business but also for a graduate wishing to integrate quickly design project teams.

Project Management Basics



Gilles Sanfilippo

gilles.sanfilippo@univ-grenoble-alpes.fr



Didier Bernard

didier.bernard@grenoble-iae.fr

Project tasks, Timeline, Gant Analysis

– 8 hours

Project Cost control Tools

Marketing

New Financing tools for innovative projects

Lean Research & Development

Pierre Chevrier pierre.chevrier@grenoble-inp.fr



First Lecture – 3 hours

Lean Introduction

Value Stream Mapping study case + VSM inputs

13 principles of Lean Development

Second Lecture – 3 hours

Serious Game: 1st round Silo Story

Theoretical input :

Multitasking & Time-management

Fast-Feed-Back & Best-Practices

Serious Game: 2nd round Silo Story

Debriefing

Third Lecture – 3 hours

Serious Game: 1st round Valu Story

Debriefing – Keep – Drop – Start

Flash back on Lean Development and Project Management essentials

Serious Game: 2nd round Value Story

Debriefing

Students groups Supervision - 3 courses x 2 hours

Technical PROJECT



**Maryline
BAWEDIN**



**Davide
BUCCI**



**Anne
KAMINSKI**



**Laurent
MONTES**



**Liliana
PREJBEANU**

Free slots to work for the Project

LABS schedule

			G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	G11										
Wed	06/02/19	AM					S1	AK	S1	AK	S1	AK	T1	DB	T1	LM							
Wed	06/02/19	PM	S1	AK	S1	AK	S1	AK	S1	AK	N1	CW	T2	DB	T2	LM							
Thurs	07/02/19	PM	S2	AK	S2	AK	S2	AK	S2	AK	N2	CW	T3	JEB	T3	LM							
Wed	13/02/19	AM	T1	DB	T1	JEB	N1	CW			S2	AK	S2	AK	S2	AK							
Wed	13/02/19	PM	T2	DB	T2	JEB	N2	CW	Communication at work														
Thurs	14/02/19	PM	S3	LR	S3	LR	S3	LR	S3	LR	Communication at work							T4	JEB	T4	LM		
Mon	18/02/19	PM	S4	LR	S4	LR	S4	LR	S4	LR	Project		Project			C1	MB	C2	MB				
Wed	20/02/19	AM	T3	DB	T3	JEB	Project		S3	LR	S3	LR	S3	LR	S3	LR	Project	C2	MB	C1	MB		
Wed	20/02/19	PM	T4	DB	T4	JEB	Project		S4	LR	S4	LR	S4	LR	S4	LR	Project	N1	CW	Project			
Wed	06/03/19	AM	C1	MB	C2	MB	T1	JEB	T1	LM	Project		N2	TO	Project	S1	AK	S1	AK	S1	AK		
Wed	06/03/19	PM	C2	MB	C1	MB	T2	JEB	T2	LM	Project		N1	CW	Project	S2	AK	S2	AK	S2	AK		
Mon	11/03/19	AM	Project		Project		T1	MB	T1	JEB	Project				S3	LR	S3	LR	S3	LR			
Mon	11/03/19	PM	Project		Project		T2	MB	T2	JEB	Project				S4	LR	S4	LR	S4	LR			
Wed	13/03/19	AM	Project		T3	AK	T3	LM	Communication at work							N2	CW						
Wed	13/03/19	PM	N1	SLD	Project	T4	AK	T4	LM	Project		Project		Project			Project			Project			
Wed	20/03/19	AM	Project	N1	SLD	C1	TK	C2	TK	T3	AK	T3	DB	Project		Project	Project	Project	Project				
Wed	20/03/19	PM	N2	TO	Project	C2	TK	C1	TK	T4	AK	T4	DB	Project		Project	Project	Project	Project				
Wed	27/03/19	AM	Project		Project		Communication at work							Project	N1	CW							
Wed	27/03/19	PM	Project	N2	TO	Project	Communication at work							Project									
Wed	03/04/19	AM	Project		Project		C1	TK	C2	TK	T1	AK	T1	JEB	Project	Project	Project	N2	CW				
Wed	03/04/19	PM	Communication at work							C2	TK	C1	TK	T2	AK	T2	JEB	Project	Communication at work				
Wed	10/04/19	AM	Communication at work							Project		T3	MB	T3	JEB	N1	SLD	Communication at work					
Wed	10/04/19	PM	Project		Project		Project		T4	MB	T4	JEB	N2	JC	Project								
Wed	17/04/19	AM	Communication at work							Project	N1	SLD	C1	TK	C2	TK	T1	MB	Communication at work				
Wed	17/04/19	PM	Communication at work							N2	JC	C2	TK	C1	TK	T2	MB	Project					
Mon	29/04/19	AM	Communication at work							N1	SLD	Project		Project		T3	MB	Communication at work					
Mon	29/04/19	PM	Communication at work							N2	JC	Project		Project		T4	MB	Communication at work					
Wed	15/05/19	AM	Communication at work							Communication at work							N1	SLD	C2	MB	Communication at work		
Wed	15/05/19	PM	Communication at work							Communication at work							N2	JC	C1	MB	Communication at work		
Thurs	16/05/19	AM	Communication at work																				
Thurs	16/05/19	PM	Communication at work																				

Project objectives

- ✓ Promote team work
- ✓ Initiation to project management
- ✓ Closing the gap between theory and practice

Approach selected:

- 8 students teams
- Call for projects in pre-defined areas
 - Phase I State of Art → 5 March
 - Phase II Product Specification → 8 April
 - Phase III Product Development → 23 May

Topics

1. Microstructured photovoltaic devices
2. Displacement sensor in integrated optics
3. Lidar systems for flight positioning
4. Dielectrophoresis
5. Micromotors
6. Pressure sensors
7. Micropumps
8. Energy harvesting
9. Biometric sensors
10. Electronic nose
11. Electronic tongue
12. Electronic ear
13. Electronics eye
14. Bio-chemical detection with MOS-like devices
15. Field sensors
16. ... open list for your own proposals

Technical expertise

Maryline Bawedin: microelectronics devices, TCAD simulations

maryline.bawedin@phelma.grenoble-inp.fr

Davide Bucci : analog electronics, photonics, measuring systems

davide.bucci@phelma.grenoble-inp.fr

Anne Kaminski : photovoltaic, technology, Silvaco simulations

anne.kaminski@phelma.grenoble-inp.fr

Laurent Montes : optical application, simulation, MEMS, technology

laurent.montes@phelma.grenoble-inp.fr

Liliana Prejbeanu : multiphysical modelling, magnetic devices, spintronics

liliana.prejbeanu@phelma.grenoble-inp.fr

Organization

Phase I: State of Art

Tasks: listing of the existing solutions, physical principles, laboratories/companies

Tuesday, March 5th, 13:30-17:45

10 min talk + 20 min discussion (designation of 2 tutors)

Phase II: Product Specification

Tasks: Market analysis + product specifications + define building blocks of the product architecture + schedule (Gantt diagram)

Monday, April 8th, 13h30-17h45

10 min talk + 20 min discussion

Written hand-out (10 pages maximum)

due on Thursday 4th April 12:00

Phase III: Final Product Development

Oral Examination: Thursday, May 23rd

25 min talk + 30 min discussion

End-of-project report (20 pages maximum)

due on Monday, May 20th, 12:00

Evaluation

Score 1: 0-20 for the documents (Written hand-out and End-of-Project report)
(average between the evaluation of both Phelma tutor)

Score 2: 0-20 given by the jury (5 Phelma professors) for the oral presentations

(Score1+Score2)/2 counts for 75% of the final score

25% of the final score is the evaluation of theoretical part

Constraints for groups formation

Same groups for labs and for projects

Groups for labs = 4 students/group 3 students/ group
G1, G2, G3, G4, G5, G6, G7, G8, G9, G10, G11

Teams for projects = 2 lab groups (with consecutive numbers)

Project 1 : G1 + G2 + 1G11

Project 2 : G3 + G4 + 1G11

Project 3 : G5 + G6 + 1G11

Project 4 : G7 + G8

Project 5 : G9 + G10

Mixed groups: nationalities, genders, expertise, skills,...

Constraints for groups formation

Friday 1st of February:

- email with the members of each group G_i
one email / group received until 12h00

Monday 4th of February:

- list of 3 choices (preference order)/Team Project
one email / project received between 7h00 and 18h00

Tuesday 5th of February:

- confirmation of the project topic of each group

Use only one single email address: liliana.prejbeanu@phelma.grenoble-inp.fr