



Responsible-Design @ Grenoble

International semester project in Responsible Engineering Design @ Grenoble (France)



Your contact :
Nadia Dehemchi
nadia.dehemchi@grenoble-inp.fr



School
of Industrial Engineering

VI-2008-09-05



Responsible Design

- **Future Engineering Designers will face the challenge of considering the Lifelong impact of products and processes in their day to day practices**
- **This semester allows students to experience responsible design through an INTERNATIONAL INNOVATIVE PROJECT in collaboration with industry alongside with responsible design and business lectures**

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What is Responsible Design@Grenoble ?

- **Responsible-Design@grenoble is a full semester project in which International student teams have to design innovative concepts of responsible products to respond to industrial challenges**
 - Teams take projects all the way from defining design requirements to constructing numerical and functional prototypes ready for technical evaluation.
 - Teams have to define business plans for the innovative products.
 - » The language of communication is English.
 - » Students receive an international certificate upon successful completion of the project
 - » Students can obtain full credit (30 ECTS) according to the European Credit Transfer System, ECTS.
 - » The program starts in the Spring Semester 2009 (Feb-June)



Who can participate ?

- **The program is open to students that have a solid academic background in engineering.**
 - after their 1st Year of Masters degree in the European Bologna process
 - English speakers
- **Everybody may apply**
 - The program can be included in exchanges with the partners of Grenoble Institute of Technology (Grenoble INP) in European Erasmus programs
 - with E-MIRACLE partners
 - or members of the Cluster Network
- **To apply, contact the local administration advisor of your international office**

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Resources

- **The students have free access to the resources of GI-NOVA: the New Platform for innovation, Design and Prototyping**
 - Engineering software: CAE, PDM, CAD (ProE, Catia),
 - Physical prototyping facilities: Rapid Prototyping, Machining,
 - Design space
 - Remote collaborative engineering facilities
 - Video-conferencing system
 - Library
 - Project Management software
- **G-SCOP, Research Center in Integrated Design**
 - The project can use the resources of the research centre situated in the same building.
 - The Academic Staff members the project are also members of the research centre
 - Research areas of the centre are
 - Sustainable design, User centered design
 - Collaborative Engineering
 - Design for Manufacturing
 - Information Management
- **The facilities of the International Network of Grenoble – University of Innovation**



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Teaching Staff

- **The Staff is composed of Permanent Researchers and Teachers of Genie Industriel**
- **Affiliated Consultants are also involved in the coaching of the project**
- **Specific services from the other INP engineering schools can be made available upon request**
- **Staff in 2009**
 - Rodolphe Allera
 - Consulting (rab solutions)
 - Eric Blanco
 - collaborative Engineering, user-centred design
 - Pierre Marie Boitel
 - Simulation, mechatronics
 - Daniel Brissaud
 - Design For manufacturing, Eco-Design
 - Alain Didonato
 - Engineering, Technical Support
 - Michel Monier
 - Marketing, Business
 - Frederic Vignat
 - CAD, Prototyping



Génie industriel: The French reference in Industrial Engineering

430 students (+ 80 visiting students in exchange programs)

150 students graduate each year

2 curricula (Engineering Design and Supply Chain Management)

40 teachers are members of well known research labs

70 PhD students

1 technological platform dedicated to design, prototyping
and industrialisation

8 major companies involved in the industrial steering **committee**



One of the 6 « grandes écoles » of Grenoble INP



Grenoble Institute of Technology

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<http://genie-industriel.grenoble-inp.fr>



A priority for the global economy

80 international students

32 countries

1 office for international students



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Génie industriel in the heart of the French Alps

A tremendously rich
education
and student life



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Details of operations

**International semester project in
Responsible Engineering Design
@Grenoble (France)**



Operations

- **The project is organized as a Stage gate process with Heavy Miles Stones**
 - Requirements Review
 - Concepts Review
 - Preliminary Design Review
 - Final Review
- **Design reviews are planed with the staff weekly.**



Joint Seminars

- **Lectures are proposed offered each week with guest speakers from universities and companies**
 - Seminar in Responsible Design:
 - Assessment of environmental impact, eco-design principles, energy consumption analysis, European regulations and directives
 - Extended Producer Responsibility, ...
 - Industrial Design, Ergonomy, ...
 - Business Seminar : cost management, marketing, Business models, project management, operations.
 - French language and culture class



Program

Week 1	Team building Project launching Meeting with industrial partners
Week 2	First seminars Project Work
Week 3	Project Work
Week 4	Project Work Partner Workshop
Week 5	Requirement Review
Week 9	Concept Review
Week 12	Preliminary Design Review
W16	Final Design Review

French Language and Culture

**Business and Responsible
Design Seminars**

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Deliverables

- **Requirements list**
 - Need and value analysis
 - Functional requirements
 - Project planning
- **Concepts proposal**
 - At least three documented concepts
 - Cost target
 - Product strategy
 - Competitor and patent analysis
 - Market analysis
- **Final report**
 - Numerical models, drawings, analysis, prototypes
 - Specifications for product development
 - Business plan
 - Responsible Design assessment
- **Poster for design exhibition**



Staff role

- **Academic Staff**
 - Project Supervisor
 - Each group has a Project Supervisor
 - Support Staff
 - Support Staff aims at helping students use technical resources and tools.
- **Company Staff**
 - Company Contact
 - The person that facilitates contact with the internal skills, knowledge and resources of the company
 - Company Sponsor
 - The person who will accept or refuse the deliverable



Group members role

- **Project Manager**

- Each team chooses a Project Manager at the end of the First Week.
 - Responsible for the Project Book

- **Librarian**

- Each team identifies a Librarian who is in charge of information management and capitalization in the project.
 - Responsible for the Documents Book



Project Documents

- **Project Book**
 - Managed by the project manager weekly, it contains :
 - Data of the project
 - Track Design Rationale
 - Project schedule
- **Documents Book**
 - Managed by the Librarian, it contains :
 - Links to the data of the project
 - Bibliography, resources links and references
- **Personal Notebook**



Assessment

- **Group evaluation**
 - Technical assessment results, innovation,
 - Responsible Design assessment
 - Business assessment
 - Information and Knowledge Management
 - Presentation of the work.
- **Personal evaluation**
 - Contribution to the group :
 - Personal Notebook
 - Participation, involvement, input
 - Peer assessment