

Responsible-Design@Grenoble

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



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School

of Industrial Engineering



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



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
 v1-2020 for your international office



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

V1-2008-09-05



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 reseach 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 I**NP**

Grenoble Institute of Technoloy



International @ Génie industriel

A priority for the global economy

20 nationalities

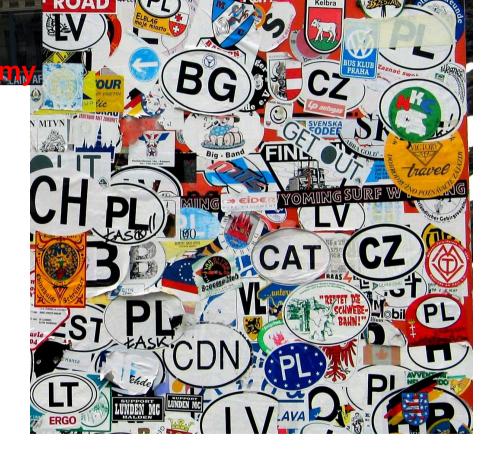
80 international students

74 university partners in

32 countries

12 international students in double diploma programs

1 office for international students

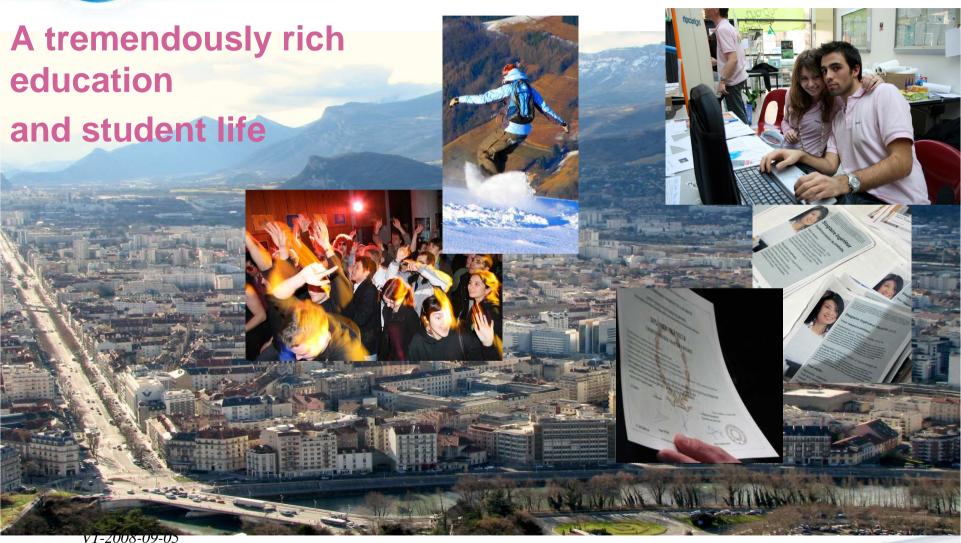


Grenoble organizes the Spring Council 2009 of ESTIEM (April 2009)

V1-2008-09-05



Génie industriel in the heart of the French Alps





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

French Language and Culture

Business and Responsible Seminars

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

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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