

Realising a project with the Industrial Process and Energy Systems Engineering Group

Goals Rules, Contract

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Outline

1 Motivations

- Importance of projects in your curriculum
- What do we propose ?

2 A Pedagogical contract

- What can you expect from our side ?
- What is expected from your side ?

3 Workflow

- The project workflow ?

4 Evaluation

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Projects represent up to 50% of the master program

The projects have the goal of developing your skills in :

- Activating your knowledge for solving engineering problems
- Placing a problem in its context
- Managing a project and working in a team
- Activating your creativity for problems solving
- Producing and analysing results
- Communicating Science and Techniques

When proposing projects, we challenge YOU as future engineer in the field of energy ... there is no known solution

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What do we propose ?

Industrial Process and Energy systems Engineering group (IPESE) is proposing projects that are related with its research activities, where appropriate the projects are also linked with our partners (industry, universities,...).

We challenge you as young engineers that have to solve a practical problem

- The integration with our research project teams (project leader → Researcher → Master student)
- Timely problems from our research topics
- A pedagogical contract

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What can you expect from our side ?

Projects are realised under the supervision of LENI researchers and when possible in collaboration with LENI partners. We offer :

- Expertize
- Orientations and hints
- Feedback on received documents
- Support for using the tools
- Motivated and passionated team working environment (hopefully)

Team working

- Student are integrated in our research teams
 - Team working
 - Synergies between researchers and students
 - Constraints :(e.g. time, availability)
- Researchers will present their projects (context definition)
- Prepared documentation, materials, tools and experiments

Documents

Download at <http://ipese.epfl.ch> → Student projects

- How to write a report ?
 - Books R. Turton et al.
 - Student Summary (S Baumann)
- How to make an oral presentation ?
 - Documentation by craft.epfl.ch
- Project realisation directive
 - This presentation
 - Rules and guidelines
 - Some template documents
 - Self-evaluation Sheet (Quality control)

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What is expected from your side ?

We challenge **you** with a project and we expect your

- Enthousiasm and envolvement
- Professionalism and team working attitude
 - Autonomy
 - Creativity
 - Responsibility
 - Communication
- Time and quality control
- High quality report
- Follow project realisation rules and guidelines

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The project team

Projects are organised by thematics and the students are informed of the progress in their respective thematics
Project team is composed of at least 3 persons:

- The student
- The project leader (Assistant)
 - A project is allocated to an activity with several assistants
- The evaluator (another assistant)
- The professor

The project time line

Major Milestones and Deliverables

Milestone	Date	Deliverable
Goals and Work planning	Week 3	Blog report
Report content proposal	~ Week 7	Blog + pdf
Oral presentation	Week 11	Slides
Final report	10.01.2014	Report

Documents will receive feedback from the project leader

Define the goals & Context

From the definition of a challenge, you will be asked to define the project goals

- Define the context of the project
- Stating the problems to be solved
- Define the expected deliverables
 - Report, drawings, tables,...
 - Experimental set-up
 - Computer programs, data bases,...
- Identifying knowledge, methods and tools to be used
 - Define also the ressources needed (persons, computers, labs,...)

Work planning

- List and description of tasks
- Who is doing what ? What are the interactions with the others ?
- Gantt chart
- Define Milestones and deliverables
- Fix the intermediate meeting date (~ week 8)

Milestones and Deliverables

Del 1	Project objectives and planning	~ week 3
Chapter	Introduction and objective	~ week 7
Annex	Project schedule	end

Structure the information

- Bibliography search
 - Not only google !
- Definition of the required data
- Collection of the data
- Form of the required data
- Reporting of the data collection

Expected Deliverables

Chapter	Bibliography and references	~ end
Chapter	Annexes/data bases/documented programs	~ end

Solve the problem

- State the problem and installed the required tools/devices
- Document the tests and actions
- Prepare the data for reporting
- Be precise and rigourous

Expected Milestone

Del 2	Report structure	~ week 7
Chapter	Method and tools	~ end

Analyse and report the results

- Prepare graphics and tables
- Evaluate errors
- Sensitivity analysis
- Communicate the results to your supervisor
- Report your results
- Draw conclusions (synthesis and critics) and recommendations on future works

Expected Deliverables

Chapter	Results analysis	end
Chapter	Conclusion and recommendations	end

How is the project evaluated ?

- Project evaluation criteria
 - Adapted as a function of the project level
 - Defined in a evaluation grid
 - You will receive a feed back
- Auto-Evaluation
 - You are the first responsible of the quality control
 - Auto-evaluation grid (see supporting material)
- Project realisation
 - Working plan
 - Milestones
 - Results

Project evaluation Criteria

6 Criteria - 10 pts each

1 Problem statement

- Context, State of the art
- Goals formulation

2 Work realisation

- Autonomy - Creativity
- Tools and methods
- Quality

3 Quality of the results and results assessment

- Synthesis of the results
- Presentation (Graphs, drawings)
- Recommendations and critics

Project evaluation Criteria cont.

- 1 Report (external examiner)
 - Structure
 - Tables and Graphs
 - Bibliography
 - Clarity
- 2 Presentation (external examiner)
 - Oral presentation
 - Q&A
- 3 Personal Involvement in the work
 - Constancy
 - Effort

Final Remark

Project leaders are also doing research !

- Respect researchers work
- Support is time consuming
 - Use of <http://leniwiki.epfl.ch>
 - Fill leniwiki when you receive a "how-to" information
 - share your knowledge
- High density of researchers → discussion outside the office
- Do not hesitate to ask for meeting when needed (and prepare it)
- Follow administrative guidelines
- Keep your planning, i.e. start working now !

Thank you for your attention

Enjoy your project...

Any Questions ?