



2SL5000 – "Engineering Skills" Workshops

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Department: DÉPARTEMENT DÉVELOPPEMENT PROFESSIONNEL ET MÉTIERS DE L'INGÉNIEUR

Language of instruction: FRANCAIS

Campus: CAMPUS DE METZ, CAMPUS DE RENNES, CAMPUS DE PARIS - SACLAY

Workload (HEE): 40

On-site hours (HPE): 21,00

Description

This course is the continuation of 1SL5000. The objective is to continue exploring and developing the skills expected from a CentraleSupélec engineer: teamwork, project management, communication, complex problem solving, creativity, leadership, ethics, multicultural awareness.

Quarter number

ST5, SG6, ST7 and SG8

Prerequisites (in terms of CS courses)

It is highly recommended to have taken the 1SL500 course.

Because the workshops are held in French and are highly interactive, a good command of spoken French is recommended. Homework and reports may be written in English.

Syllabus

Key skills of the engineer:

- teamwork: organize, decide, lead in a team; different roles of team members; influence of the personality on the performance of the team
- oral communication: develop impactful oral communication, speak in public, structure a synthesis, build a presentation
- approach to solving complex problems: analyze the issues, make robust assumptions, use relevant orders of magnitude, manage risk and uncertainty
- creativity: understand group creativity methods
- leadership and self-knowledge
- multicultural: open to others, understand how to adjust to a different environment
- ethics: act ethically, understand the consequences of one's choices

API 8: Ethics

API 9: 2-Tons workshop, then project review



API 10: Leadership
API 11: Multicultural awareness
API 12: Project Coaching
API 13: Project Coaching
API 14: Project Coaching

Class components (lecture, labs, etc.)

- Case studies in groups
- Practical applications
- High student participation
- Application of the skills seen in the workshops to a real project
- Homework

Grading

Attendance at the workshops is mandatory because any absence penalizes the learning of the student and handicaps the group.

The participation of each student during the workshops is graded because it is a necessary condition for learning skills.

Individual or team work requested during workshops or between workshops is graded. The respect of the deadlines intervenes in the evaluation.

The team work gives rise to a collective grade for the team (except in the obvious case of withdrawal of the team).

The individual essays are given full credit if they are turned in on time and show sufficient quality of the personal reflection, without judgment on the opinions expressed when they are argumented.

Mini-quizzes may be given at the beginning of some of the workshop, on the content of previous workshops,. The quizzes are then graded.

The grade of each semester will be based on:

- Productions in the group work
- Individual and team homework (TIA)
- Quality of individual participation
- Result of the mini-quizz if any

An unjustified absence (ABI) leads to a penalty of 2 points per half-day of absence

At the end of each semester, validation of some steps of the relevant competencies.

Resources

Workshops in groups of 30 to 40 students, led by two professors

Practical engineering cases

Films and videos



Exchanges with other students and invited professionals

Conferences

Close link between the workshops and the second year team project of S8

Learning outcomes covered on the course

At the end of this course, the student will have understood the basics of:

- teamwork
- oral scientific communication
- problem solving
- creativity techniques
- leadership
- working in a multicultural environment
- ethics in engineering

Description of the skills acquired at the end of the course

At the end of the course, the student will have continued to progress in the following skills:

- solving complex problems (C1)
- be proactive, take initiatives, propose new solutions (C3)
- think customer and know how to identify the value brought (C4)
- familiarization with intercultural (C5)
- know how to convince (C7)
- lead a project and work in a team (C8)
- act ethically (C9)