

Project Guide Innovation Internships

Postgraduate Programme in Innovation and Entrepreneurship

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Content

1	Introduction.....	2
2	Overview of roles.....	3
2.1	Coach.....	3
2.2	Student.....	3
2.3	Mentor.....	3
3	Expectations per role.....	3
3.1	Coach.....	3
3.2	Student.....	4
3.3	Mentor.....	4
	Timetable and deliverables.....	5
3.4	Short project.....	5
3.5	Long project.....	5
4	Practical information.....	6
4.1	Project length.....	6
4.2	Internship agreement.....	6
4.3	Insurance.....	6
4.4	Required meetings.....	7
4.5	Blogs.....	7
4.6	Absence.....	8
4.7	Expenses.....	8

4.8	Evaluation	8
5	Best practices	9
5.1	Coach	9
5.2	Student	9
5.3	Mentor.....	9
	Attachment 1 – learning outcomes innovation project.....	10

1 Introduction

The innovation project is the most important part of the Postgraduate Programme in Innovation and Entrepreneurship in Engineering. For most students it is a first chance to apply their engineering theory and knowledge to help solve a ‘real’ problem. For others, this may be their first ‘real’ interaction with the engineering industry.

Three parties are involved during the innovation project, namely:

- The coach: representative of the university
- The student: engineering student
- The mentor: representative of the organisation.

There are three types of innovation projects, namely:

- In-company projects: an internship within an external organisation. An in-company project can be done by one of two students and lasts one semester or one academic year.
- Team projects: an internship on one of the campuses. A team project is done by a group of students and lasts one academic year.
- Start-up projects: enterprising students can write, during an entire academic year, a business plan around their own idea with a view to start a company.

This guide is a compass for all three parties during the innovation project. If you miss information in this guide or have further questions, please contact the VUB coordinator:

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We wish all the coaches, students and mentors a challenging and interesting period.

2 Overview of roles

2.1 Coach

“Coaching is a designed alliance between a coach and a student for the purpose of fostering success skills in an educational or professional environment. It is an individualized process that facilitates goal clarification and achievement. The purpose of coaching is to stimulate and motivate students toward their scholastic and professional goals by providing structure, support and feedback.”

- Sandy Maynard -

The coach is a university member, alumni or relation and will be assisting the student personally and process-wise during the whole length of the postgraduate programme. The coach provides personal advice to support the students learning process.

During the innovation project the coach is involved only **process-wise** and not - contrary to a Master's thesis – in a technical manner or regarding the content. A coach **stimulates innovation** and enlarges the students' capability to be creative and innovative. The aim of coaching is to **enlarge the personal effectiveness** of the student. A coach is also an evaluator (together with a mentor).

2.2 Student

The student conducts one or more innovative projects within an external organisation. A student is personally guided and evaluated by a coach and a mentor.

2.3 Mentor

The mentor is an experienced engineer or professional who is responsible for guiding the student on the innovation project. The mentor keeps the student **focussed on the project goals**

“Mentoring is a term generally used to describe a relationship between a less experienced individual, known as a student, and a more experienced individual known as a mentor. Innovation mentors are professionals who work with individuals or teams to execute innovative projects. A mentor may share with a student information about his or her own career path, as well as provide guidance, motivation, resources, knowledge and role modeling.”

- University of Washington -

and is a technical entrepreneurial. He or she provides **technical supervision** during the innovation project. The students look to the mentor as a role model. The mentor plays a vital role in both the successful completion of the project and in the development of students into workforce-ready professionals. A mentor is also an evaluator (together with a coach).

3 Expectations per role

3.1 Coach

- Takes part in the required meetings with the student
- Ensures the student meets the academic and personal goals of the project
- Assists the student process-wise
- Assists the student in identifying the process and next steps
- Questions and challenges the student
- Responds to student emails; note that students should try to consolidate email requests so that the coach is not flooded with requests
- Reviews deliverables produced by the student and provides timely feedback
- Tracks and notifies issues, actions, risks and bugs

- Provides feedback on possible dissatisfaction of the mentor on the students' performance to the student
- Is enthusiastic and inspires productivity of the student
- Offers constructive and individual criticism during the entire length of the internship
- Assigns an internship grade together with feedback from the mentor.

3.2 Student

- Makes sure all parties receive an original and signed internship agreement and HSE-form
- Makes agreements with the mentor on presence
- Informs coach and mentor immediately in case of absence or work-related accidents
- Coordinates, prepares and takes part in a weekly meeting with the mentor
- Writes a biweekly blog post about the internship (at least available for coach and mentor)
- Coordinates, prepares and takes part in the required meetings with coach and mentor
- Provides agendas for meetings at least 36h in advance of the meeting
- Communicates often and clear with mentor as well as coach
- Provides drafts to mentor and coach in advance for review
- Acts as a co-worker within the organisation
- Reports issues, actions, risks and bugs in time to coach and mentor
- Bears in mind the key-objectives and project goals during the entire length of the internship
- Has a clear, up-to-date and feasible plan and schedule for achieving objectives, goals and deliverables on time and of the highest quality
- Acts and behaves conform the organisational ethics and regulations (clothing, use of facilities, language, confidentiality, ...)
- Makes sure all parties receive the agreed deliverables by the end of the internship
- Keeps the progress and content of the innovation project strictly confidential.

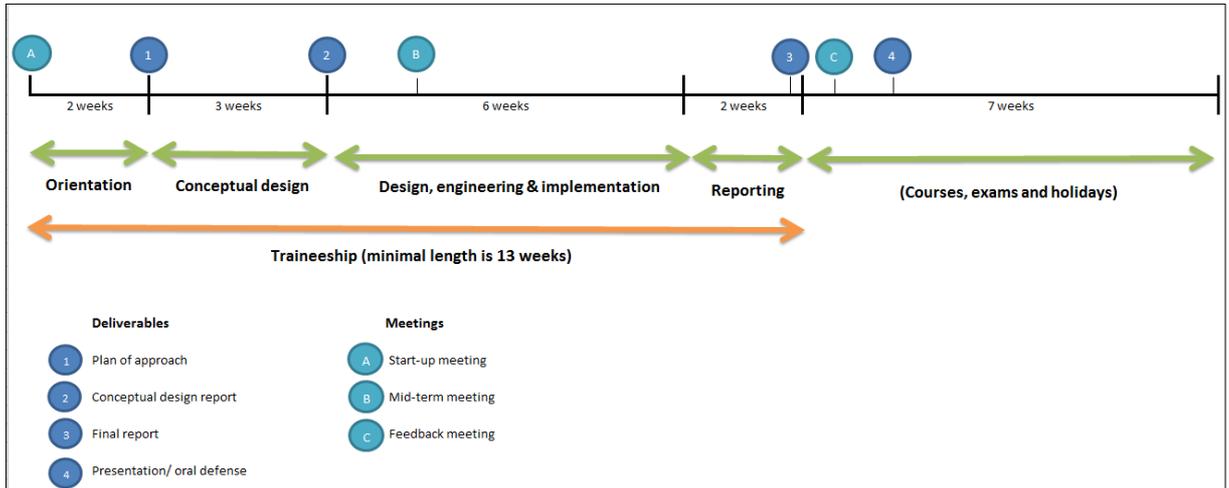
3.3 Mentor

- Introduces the student to the organisation
- Agrees with the student on the deliverables they have to provide during and by the end of the innovation internship
- Coordinates with HR for signing the internship agreement and HSE-form
- Devotes minimal one hour per week to the student
- Gives the student personal feedback weekly
- Identifies a backup if he or she is unable to support the student
- Treats the student as a professional
- Responds to student emails; note that students should try to consolidate email requests so that the mentor is not flooded with requests
- Reviews deliverables produced by the student and provides timely feedback
- Assists the student content-wise and provide technical feedback; find the feedback in your organisation if you don't personally have to knowledge
- Assists the student in obtaining support items and resources
- Facilitates the equipment for the duration of the internship or the use of the company's facilities
- Directs the student to preferred suppliers and provides assistance when suppliers are unresponsive to student requests
- Critiques and sanitizes design review presentations as required prior to public design reviews
- Reinforces the importance of the project (if it is important to you, it will be important to the students)
- Voices concerns with the coach privately if he or she is unhappy with the students' performance.

Timetable and deliverables

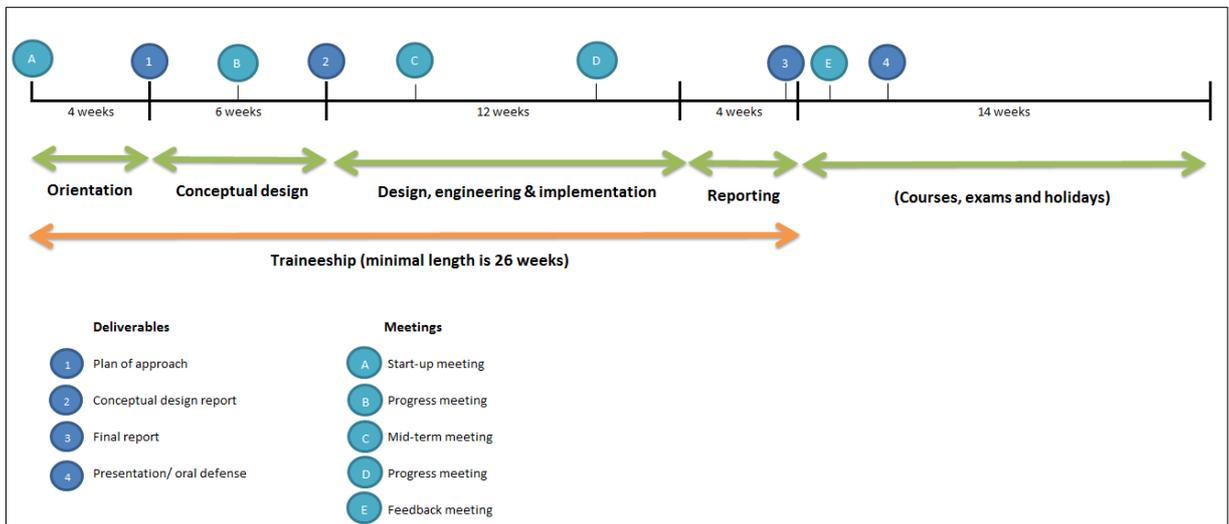
3.4 Short project

Below you find a global overview of the most important phases, deliverables and meetings during an project of **one semester**.



3.5 Long project

Below you find a global overview of the most important phases, deliverables and meetings during a project of **one academic year**.



4 Practical information

4.1 Project length

Innovation projects are circa 5 or 10 months long but during this period the student also takes a (limited number) of courses for which he or she has to do exams. We strongly advise to **make clear agreements** with student, coach and mentor on the length of the internship, holidays, working days and times **before the start of the project**. The student has to be present at the project providing organisation at least 12 or 24 weeks in total (depending on the length of the internship). Since the student has to follow courses and do exams, he or she will not necessarily be present 12 or 24 weeks in a row or fulltime.

4.2 Internship agreement

When organisation, student and coach have reached an agreement, the innovation project is officially made up in the internship agreement. The student makes sure the internship agreement is made up in three original sets. The three original sets are being signed by the student, the responsible organisation officer and the representative of the university.

You can find a sample of the internship agreement: www.innoverendondernemen.be/innovatiestages/praktisch/stagedocumenten

<http://www.innoverendondernemen.be/innovatiestages/praktisch/stagedocumenten>

Important notes for the student:

- each of the involved parties should receive an original and signed internship agreement outward **one week before the start of the innovation internship**. Under no circumstances an innovation internship can start before the internship agreement is signed by all parties.
- bear in mind that the signatures of the coach and organisation can keep you waiting so arrange everything on time
- don't forget to give a fully signed set of the internship agreement to the responsible organisation officer before starting the innovation internship.

Important note for the organisation:

- We realise the content of the innovation projects often is confidential. That is why we emphasise that the technical guidance is always conducted by the organisation. This means the intellectual property on established products, materials and research always remains at the organisation offering the internship. This is explicitly mentioned in the internship agreement.

4.3 Insurance

During the Internship the student shall be insured under the Vrije Universiteit Brussel policies against the following risks:

- Bodily injury occurred during the course of his or her internship as well as while commuting to and from the locations of the internship;
- Civil liability incurred personally by the student during the internship, but only in respect of activities concerning the courses taken and in accordance with the university programme.

4.4 Required meetings

Depending on the length of the project there are minimum three or five official meetings between student, coach and mentor:

- **Start-up meeting:** goal of this meeting is to determine the course of the project, the goals, the conditions and appointments.
- **Progress meeting (only if long project):** the purpose this meeting is to discuss and review all pertinent project information so all parties take a broad view of the planned and actual progress over the project activities.
- **Mid-term meeting:** the purpose this meeting is to discuss and review all pertinent project information so all parties take a broad view of planned and actual progress over the project activities.
- **Progress meeting (only if long project):** the purpose this meeting is to discuss and review all pertinent project information so all parties take a broad view of planned and actual progress over the project activities.
- **Feedback meeting:** goal of this meeting is to evaluate the student deliverables, goals and skills. Mentor and coach evaluate the total learning progress of the student.

Important note for students: view chapter 4 for the timing and planning of these meetings. It is advisory to schedule all applicable meetings at the start of the project in consultation with your mentor and coach. **Additional meetings** are always possible but these have to be initiated on initiative of the student.

4.5 Blogs

Creating an online blog is mandatory for all in-company and start-up projects and is an essential part of the evaluation process.

At the end of every two weeks the student posts a message with the summary of the activities that are conducted. The student also evaluates how satisfied he or she is with the result of each activity. Evaluation and feedback moments with coach and mentor should also be described. Next to this opportunities for improvement are described and planned.

In short the biweekly progress post consists of a description of the:

- conducted activities
- level of satisfaction on all the described activities
- evaluations and feedback moments with coach and/or mentor
- explicit opportunities for improvement
- planning for the coming activities

“The best way to deal with the dual roles of an evaluator and coach is to create an atmosphere of trust.”

- University of Florida -

Always verify with the company who gets access to the blog.

4.6 Absence

In case of sickness or a work accident the student immediately informs the mentor and coach. The student delivers an official doctor's note to the coach. The days the student is absent should be compensated.

Important note:

- When the student needs to catch up internship days which are not mentioned in the internship agreement the term on the internship agreement should be adjusted (otherwise the student is not insured). An internship duration change form can be obtained from the coordinator.

4.7 Expenses

An innovation internship is **unpaid** but if a student needs to use or purchase specific materials or machines it is expected these facilities are provided or expenses are reimbursed. Project expenses **always need to be approved by the mentor** before any purchases are made. In case a student needs to travel to other locations on behalf of his or her innovation internship travel expenses should be reimbursed.

4.8 Evaluation

Because this is an educational programme, evaluation is done differently than would be typical of industry. To keep an appropriate focus on the educational aspects of the experience, students will be evaluated by both coach and mentor in agreement. Together they will not only evaluate the students performance and outcome of the internship but also their performance and growth personally and process-wise.

A student is evaluated on (a selection of) the learning outcomes in attachment 1 of this guide. The obliged learning outcomes should always be evaluated.

During the start-up meeting the student, mentor and coach determine the weight distribution for the evaluation of the learning outcomes, depending on the focus of the project:

	Learning outcome Entrepreneurship	Learning outcome Design & development and implementation	Learning outcome Lifelong learning	Learning outcome Communication & collaboration
Focus on entrepreneurship	40%	20%	20%	20%
Focus on (technical) design, development and implementation	20%	40%	20%	20%
Focus on lifelong learning	20%	20%	40%	20%
Focus on communication & collaboration	20%	20%	20%	40%
Equal focus on all aspects	25%	25%	25%	25%

The decision on the weight distribution is formalised in the portfolio. In the portfolio the student, mentor and coach also determine which will be the deliverables that have to be produced during the project.

There are two official evaluation moments:

- **Mid-term evaluation:** halfway the innovation project a student receives feedback from coach and mentor on the products and working process so far. Before the start of the project, a student agrees with coach and mentor on the deliverables he or she will be evaluated on during the mid-term evaluation. A student is evaluated by a pass/fail system. A fail is only given in case of unsolvable issues or problems. In the case a student receives a fail, he or she has to quit the project immediately.

- **Final evaluation:** at the end of the innovation project a student receives feedback on all the produced deliverables and his working process during the entire internship. The evaluation is provided by the mentor, the coach and a jury.

An innovation project can only be interrupted or discontinued in close consultation with coach and mentor. None of the parties can interrupt or discontinue the innovation project on own initiative.

Best practices

4.9 Coach

- Is enthusiastic and inspires productivity of the student
- Challenges the student
- Responds in a timely fashion to requests
- Offers constructive criticism early in the internship
- Provides additional help with unique knowledge and skills
- Trains the student the broader scope of innovation and out-of-the-box thinking
- Gives positive feedback as well as constructive criticism
- Has regular face-to-face meetings with the student
- Gets to know the student; take the student out for a meal.

4.10 Student

- Expresses interest in the project and organisation and is enthusiastic
- Takes initiative and asks questions within the organisation
- Does not let important decisions be deferred until later
- Starts with existing expectations documents
- Organizes schedule in the beginning of the internship
- Is aware of the importance of meeting the schedule
- Works hard and shows the qualities that are expected of a Master engineering student.

4.11 Mentor

- Acts as a manager of the student and sets clear expectations
- Treats members as co-workers (honesty and respect)
- Is enthusiastic and inspires productivity of the student
- Challenges the student
- Responds in a timely fashion to requests
- Ensures that organisation-specific deliverables are included in the project
- Offers constructive criticism early in the internship
- Is aware of when to escalate issues to the coach
- Communicates on regular basis with the coach
- Involves additional help (from experienced engineers) with unique knowledge and skills
- Gives positive feedback as well as constructive criticism
- Has regular face-to-face meetings with the student
- Gets to know the student; take them out for a meal
- Is a champion of the innovation project (and duty was not only imposed from above)
- Expresses his or her interest in recruiting after graduating

Attachment 1 – learning outcomes innovation project

Learning outcomes	Obligated or Optional
Entrepreneurship	
Critical reflection of all ideas within all project involved sections	Obligated
Develop a vision and strategy for a product (USP)	Optional
Project management (planning, time management, ...)	Obligated
Take responsibility for reaching the project aims and learn how to make decisions	Obligated
Determine market value, cost-benefit analysis (and if possible business plan and budget control)	Obligated
Draw a follow-up trajectory (vision long-term opportunities in research as well as organisation)	Obligated
Change management (conduct and induce change)	Optional
Recognise opportunities (looking for opportunities actively)	Optional
Design & Develop and Implement (bio)technical systems	
Innovative (new for the organisation)	Obligated
Realistic (feasible, critical on the appliance, deal with uncertainty, usage of the right materials, make design compromises)	Obligated
Multidisciplinary (in an organisational context)	Obligated
Creative	Obligated
Social (and ethical) considered	Obligated
Systematical and holistic (select methods, logical sequence of steps and if possible iteration/ improvement)	Obligated
Quality-focused (verification strategy, test plan)	Obligated
Safe	Obligated
Lifelong learning *	

Learning outcomes	Obligated or Optional
Obtain knowledge independently	
Obtain higher knowledge skills (critical analyses, synergy and evaluation)	
Self reflection (personal development)	
Flexibility	
Efficiency	
Social consciousness	
Perseverance	
Manage and control information flows	
Communication and collaboration	
Convincing, goal-oriented and efficient communication tuned to the stakeholder (written and spoken)	Obligated
Meet and negotiate	Obligated
Collaborate in a multidisciplinary context	Obligated
Build up a social network	Optional

* At least 2 learning outcomes in the category lifelong learning should be chosen in consultation with student and coach.