

Course Book for EPS Autumn Semester 2022

Update 5.9.2022



The EPS-group from Spring 2022

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These guidelines, based on general principles within the European Project Semester Network, are written by Roger Nylund and Mikael Ehre at Novia UAS 2016. Updated in October 2021 with the help of Philip Hollins.

1. INTRODUCTION

Globalization and the integration within the EU are factors that bring new opportunities, sometimes also demands on young professionals to work in different settings. Many go abroad to work, but even those who get a job in a “local” company can often find themselves on missions abroad or working in international teams, sometimes virtual teams. Therefore, we believe that a future-proofed career in engineering requires the development of competences in both the core area of expertise and the acquisition of further meta-skills such as cross-cultural communication, team building, problem-solving, project management and conflict management. Undertaking a project semester abroad in a multicultural team is a great opportunity to enhance these kinds of skills.

In this course-book, we have gathered the most essential information for our EPS-students. Of course, you are always welcome to discuss any questions or issues with your supervisor or with the EPS Coordinator at Novia UAS, currently Roger Nylund.

1.1 What is European Project Semester?

The EPS is a one semester-long programme, which is designed to train and prepare engineering students to work in international teams. The semester consists of:

- **Short courses** in different topics such as
 - Teambuilding (1 cr)
 - Project Management, including lectures, practical training within the project and guidance throughout the semester. (2 cr)
 - English, academic writing and cross-cultural communication skills. (3 cr)

- Local language, Swedish. (2 cr)
 - More information about the courses can be found on pages 6 and 7.
-
- A **project** performed by a multi-national, multi-disciplinary team of 3 to 6 students. This is *the main content of the semester*. At the beginning of the semester, the available projects are presented after which the students are given the opportunity to give their preferences for which project they want to participate in. The students are then divided into teams based on their own preferences, major studies, and nationality. The aim is to have a good mix of both nationalities and competences in each team.
The EPS-projects at Novia UAS are typically in the fields of renewable energy, energy-saving, robotics and “cleantec” but other topics can occur. The students should note that the aim in EPS is not only to have multidisciplinary teams, but also multidisciplinary projects. This means that one project typically requires different competencies.

EPS is a recognized 30-credit unit course according to the ECTS Qualitative Scale System. The language for all oral and written communication during the semester is English. ***We also expect our EPS students to use the English language whenever working together in their teams.***

The main objective is to train students from different countries and different disciplines to work together in multi-cultural and multi-disciplinary groups. The students work together to execute an integrated engineering, design and business project, focusing on:

- The development of personal competences, especially the ability to work and communicate within cross-cultural groups.

- The interrelated work of several disciplines like mechanical & electrical engineering, information technology, business & management, etc.

The EPS concept was developed in 1995 at Ingeniørhøjskolen i København (IHK), Department of Export Engineering, in Denmark. At Novia UAS, we started EPS in 2010 and have since that had 299 incoming EPS-students of 25 different nationalities. General information about EPS and links to other organisations can be found at europeanprojectsemester.eu. More information about EPS at Novia and examples of earlier projects is found at eps.novia.fi.

1.2 Prerequisites

Problem Based Learning (PBL) is the method used, so an acceptance of this is important. Earlier experience from PBL is not a prerequisite as long as the student has a willingness to learn and adopt the method. The prerequisites for successful studies within EPS are:

- Studying in the field of engineering, software development, product design, industrial management, leadership, business or economics.
- Highly motivated to take part in the EPS program and not (only) to be abroad and because other alternatives are not available.
- Students should be *proactive and highly independent* since it is often a big challenge for the team to define their project in a meaningful way.
- Sufficient proficiency in English, preferably real practical B2 level.
- Preparing for a BSc degree.
- In the 3rd or 4th year of their studies.
- Students will present his/hers accredited grade list together with the EPS application.
- Students must take satisfaction in working as a team on a project.
- Students should be open-minded and ready to work in a wide range of engineering subjects and be able and prepared to achieve an added value

to the project from his/her own study background, interest and perspective.

- Furthermore, all other international student exchange requirements in terms of “a learning agreement” and such should be fulfilled. Please refer to the specifics at the website of Novia University of Applied Science.

1.3 Competencies

During the EPS semester, we expect the students to work on developing the following competencies. The team coaches and teachers will of course guide the students in the process.

Working in a team

Indicators:

- Take responsibility for the results the team is trying to achieve
- Communicate with team members and coaches
- Contribute to meetings (chairman, secretary, member)
- Give and receive constructive feedback
- Willingness to work based on other team members' ideas
- Willingness and ability to find solutions to possible conflicts within the team

Project management and execution

Indicators:

- Analyse and describe the project assignment
- Analyse a complex problem
- Formulate client requirements
- Create innovative solutions
- Structure the project
- Manage time, people, finances, and means

- Ability to update plans and adapt to changing circumstances

Working on a multidisciplinary problem

Indicators:

- Analyse a complex multi-disciplinary problem
- Create innovative multidisciplinary solutions to problems
- Evaluate solutions from the multidisciplinary perspective
- Integrate knowledge from various disciplines

Communication

Indicators:

- Write a report
- Improved skills in spoken English (and Swedish).
- Give an oral presentation using multi-media

Professional development

Indicators:

- Acquire new knowledge and skills
- Reflect on experiences

Some of the competences are assessed for the group as a whole, assuming equal contribution of each team member. The individual assignments for each student will allow differentiating between students. See also chapter 4 “Assessment of the students’ performance”.

2. COURSES

2.1 Teambuilding (Roger Nylund) (1 cr)

This course is given at the beginning of the semester. The aim of the course is to get the students to know each other, to highlight challenges and opportunities with the EPS way of working and to help the students to a better level of self-awareness. Communication, successful teamwork practices and time management issues are also discussed. The course consists mainly of activities, games and hands-on practical learning.

The course is graded with a passed/failed based on participation.

2.2 Project Management (Mikael Ehrs or Phil Hollins) (2 cr)

This course consists of lectures once a week for the first part of the semester and practical tasks throughout the semester. The course is deeply integrated with the project work. The course is graded together with the project.

Content:

Basic terminology in PM, PM knowledge areas (PMBok), basic documentation for a project.

Learning outcome:

The student knows Basic Project Management terminology and knowledge areas. Furthermore, the student is familiar with central documents and elements required in project management, such as a project plan, time schedule, budget and a risk assessment matrix. The student understands the basic principles of and knowledge areas in project management.

Litterature:

PMI: *A guide to the Project Management Body of Knowledge*,

ISO SFS standard 21500,

Fundamentals in Project Management, available on ebrary with Novia access-codes.

Other possible literature recommended by the teacher.

Mode of delivery/planned learning activities and teaching methods:

Varying methods, lectures, group work, written assignments individually and in groups. Discussions in class or in MS-Teams.

2.3 English and Cross-Cultural Communication, (Hanna Kuusisto) (3 cr)

The English course will be designed especially for the EPS group with a focus on communication skills and academic writing. It is held in Teams by the English teacher at Novia. The team supervisors will also guide the teams in academic writing.

2.4 Swedish, local language (2 cr)

In EPS a course in the local language is mandatory. In Vaasa we have two local languages. Swedish is the language of Novia and the minority language along the Finnish coastline. Finnish is of course the main language in Finland. The EPS students are automatically registered to the course in Swedish arranged by Åbo Akademi University and Novia UAS so there will be other exchange students participating as well.

3. WAY OF WORKING IN THE PROJECTS

We expect the participants in Novia EPS to take responsibility for themselves and to support each other in the team but also in the whole EPS group. The supervisors provide the team with a schedule concerning activities required by the UAS for at least two weeks ahead. *The project team is responsible for making their own schedules for each project.* In the first few weeks we focus on the courses, later focus is on the project. The courseschedules are found in Peppi (more instructions on intranet <https://intra.novia.fi/studies/students-from-another-uas/peppi-en-us/>) and Tuudo (<https://intra.novia.fi/studies/students-from-another-uas/tuudo-app/>).

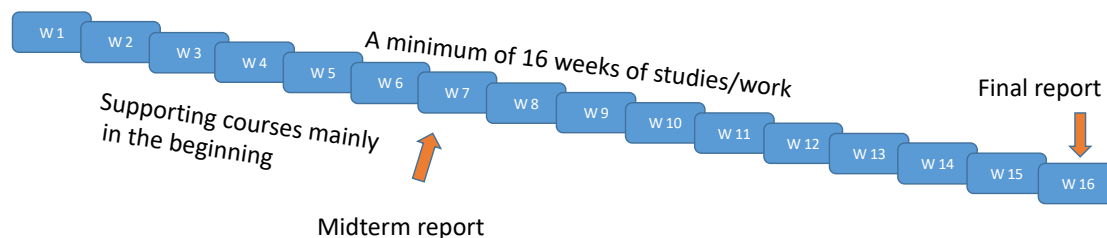
During the first week, the projects are presented where after the students can give their preferences for which project they want to participate in. The division into teams is made by the supervisors based on three criteria:

- Preferences given by the students
- Nationality (with the aim to mix nationalities)
- Field of study (with the aim to mix competences)

The project descriptions are usually quite open. This means that one of the first tasks for the team is to build an understanding of what should be done. Each team has their own team-coach/supervisor. The work during the semester is divided into three phases:

1. Definition of the project and creating alternatives. This takes approximately one-third of the time.
2. Decision about which alternative to develop before the midterm report. After that the team continues the work with the chosen solution. This takes most of the time.
3. Finalizing the report, one to two last weeks. ***Note that the final document should be ready for the supervisors at least 3 days before the final presentation!***

The list of phases outlined above is indicative. Depending on the nature of each project, the phases can vary. Below is an illustration of the structure of an EPS-semester at Novia.



Each project group should choose a *chairman* and a *secretary* among themselves. These are elected separately for the first half of the semester, until the midterm report, and for the second part from the midterm report until the end of the semester.

3.1 Weekly meetings

One important tool in working with the project is having weekly meetings. Each group regularly has at least one weekly meeting with their supervisor. The supervisor is not the chairman but a participant acting as an external advisor for the project team. For the meetings, there should be an agenda distributed at least 24 hours in advance. The chairman and the secretary agree on the agenda. Standard issues on the agenda are the following:

1. opening the meeting
2. last weeks MoM (to go through and check that everything decided on has been done)
3. time follow up for each team member. (Hours worked and on which task.)
4. work to be done and other plans for the coming week
5. specific issues about the project to decide or inform about
6. other issues (Issues initiated by the chairman or the secretary not included in the distributed agenda)
7. other issues initiated in the meeting (by any of the participants)

8. next meeting, date and time
9. closing the meeting

From each weekly meeting there should be formally documented ***minutes of meeting*** with information about at least the following:

- Name of the project group
- Meeting number and date, time and place for the meeting
- Participants & absentees
- The issues decided about numbered in the same order as in the agenda. The preferred way of numbering is by running numbers from the first meeting until the last one. This specifies each issue with no risk of misunderstandings when later referring to it. Another option is to number the issues for each meeting separately.
- For each issue on the agenda, there should be clearly stated what was decided, responsible person(s) and a deadline.

3.2 Midterm report

In the middle of the semester the students are to present their progress to the supervisors and the customers in a mid-term report. The written report is essentially a first draft of the final report but *focussing more on the process* than on the actual results. The oral presentation should take no more than 40 minutes and all the team members are expected to participate in the presentation on equal terms. After each presentation, the team should be prepared to answer questions about their work. The mid-term report should include a description of the process, ways of working and preliminary results of the work. In cases where preliminary studies have resulted in *alternative solutions* for the project task, these solutions should be clearly explained with recommendations from the project team for which alternative to continue working on. We recommend starting by giving the “big picture” of your project by answering questions like why, how and what. A slide with inclusion and exclusion, basically how you limit your project is also good

to have. Remember also basics like font size and contrasts in your presentation. It is always a good idea to test a presentation beforehand with the actual equipment if possible. When you use numbers, remember to make them meaningful. If for example, you have made huge assumptions at the start, do not use too many significant numbers in your calculations. Also, consider comparing your numbers to something that makes them understandable to the audience. For each slide in your presentation, ask yourselves why do we present this? The supervisors give more instructions if requested.

After the presentations each student has to give five bullet point-comments to each team as follows:

What could have been done better (in the presentation or the work up to the Midterm Presentations)?

- Five short comments

What was good

- Five short points

What could we in our team learn and/or adapt from this presentation?

- Five short points

3.3 Final report

At the end of the semester, there should be a written final report from each team. The content of this report should be more like an ordinary scientific report describing the problem area, aims with the project, methods, theory and results of the project. Remember also to frame the theoretical part by stating to which scientific field or “discussion” your project report is contributing to.

The final report should be written according to Novia UAS guidelines for academic writing which can be found on the Novia-intranet. We recommend the students to read earlier reports already at the beginning of the semester to get an idea of how to structure your report and also about the expected academic level of your report. The supervisors can recommend good reports to read. Each student will get a

printed version of the final report. The report should be handed to the supervisors at least 3 working days before the presentations. In the final presentation, which should take **no longer** than 40 minutes per team, all the team members are expected to participate on equal terms. The content of the presentation should follow the same logic as in the written report. It can in example be structured as follows: task, limitations => goals => methods => results => lessons learned. After each presentation, the team should be prepared to answer questions about their work. A team of supervisors and teachers evaluates the final report and presentation according to EPS guidelines (see appendix).

3.4 Code of Conduct

Each team is asked to agree on a Code of Conduct (CoC) for the team. We expect students to work independently with their projects. A part, but only a part of the project work can be made outside the University Campus. Most of the work is to be done in the EPS-room or at the working space in the Tritonia Library. ***Every team should produce an individual time follow up for each student to present to the supervisor in the weekly meetings.*** The student's workload should be roughly the standard 37,5 hrs per week. The time spent on supporting courses and other activities arranged by the UAS should be included in the time follow up and included in your workload. Your supervisor will give you more instructions.

One of the main objectives with EPS is to practice teamwork. This usually also means conflict management from time to time. The team should always do their best to solve any possible issues between themselves in a constructive manner. In case of issues that the team is not able to solve between themselves, you can always contact either the team supervisor or the EPS-responsible person, Roger Nylund.

3.5 Sick Leave and Absenteeism

In case of illness (or any other reason for absence), you must notify your team supervisor and the EPS administration (Mr Roger Nylund) immediately.

In case of longer-term sickness (more than five days), it is no longer possible to earn the full 30 ECTS credits for the project semester. For every week of sickness leave (5 working days) during the project, 1,5 ECTS will be reduced from the total.

In case of illness or any other reason of absence during the supporting courses, the respective teacher of the course will decide upon a specific course of action, which may entail failing the course, having to perform an additional individual assignment or otherwise.

The students are encouraged to take part in some of the trips within Finland arranged by the students' union. Such trips, with a duration of max. 5 days, are not counted as an absence and is to be included in your time-follow up. The local Student's winter holiday is not for EPS¹. For other trips, abroad or in Finland the student **should always ask the permission** from their team supervisor. The rule for reduction of ECTS credits for sick leave described above is applied also for these.

3.6 Video presentation and project-website

Each team should make a short (max. 3 to 4 minutes, rather less than 2 minutes) video presentation about your stay in Vaasa to market Novia-EPS. It can include anything you choose, as long as it is publishable on the Novia website ☺. Use your creativity, humour is allowed! The aim of these videos is twofold. For you as students to learn how to present something in a good way as marketing. For the UAS to develop promotional material to show potential new students.

¹ You are still free to plan your trip for this week, but the holiday does not add up to the permission to be away for 5 days on a trip.

In addition to this, each team is requested to do a short video postcard to new incoming students. This should be more about your project, what challenges you had and what you would do differently if you were given a second chance. One could call it a “lessons learned” postcard.

For each project, the team should create a visual identity with logotype, forms etc. This profile should be used when creating a professional website for your project during the semester. In this task, you get to practice your skills to present your work in a favourable manner.

4. ASSESSMENT OF THE STUDENTS' PERFORMANCE

The students are assessed as individuals and as teams. In the short courses, the teachers for each course do the assessment.

For the project and the entire semester, we follow the recommendations within the EPS-network. This means that the students are continuously assessed by their team coaches. After the midterm report, the supervisors give feedback to the teams and suggestions for how to improve their work. Before the final report, each supervisor gives feedback to his/her team about their performance and their report. On the presentation day, the focus is on the presentation itself together with other supervisor's comments on the project.

4.1 Certificate

After successfully completing the EPS program, a certificate will be issued. A grade sheet, listing the grades for the supporting courses, and for the project, will accompany the certificate. The grade sheet will also mention the number of ECTS credits received. The Transcript of Records is either given to the students before the end of the semester or is sent to the individual student's home address within a month after the end of the project semester. A Letter of Confirmation showing the start and end dates for the studies, is always given to the students at the end of the semester.

4.2 The European Credit Transfer System

The ECTS was created to improve the transparency of curricula and student's learning achievements throughout Europe, which in turn facilitates academic recognition. Credits are allocated to course units to describe the student workload required to complete them. They reflect the quantity of work each course requires in relation to the total quantity of work required to complete a full year of

academic study at the institution, that is, lectures, practical work, seminars, private work (in the laboratory, library or at home) and examinations or other assessment activities.

In ECTS, 60 credits represent one year of study (in terms of workload); normally 30 credits are given for a semester, and 20 credits for a term (a trimester). ECTS credits are allocated to courses and projects and are awarded to students who successfully complete those courses and/or projects by passing the examinations or other assessments.

Examination and assessment results are usually expressed in grades. There are many different grading systems in Europe. To help institutions translate the grades, the ECTS grading scale has been developed. This scale provides additional information on the student's performance to that provided by the institution's grade but does not replace the local grade. Universities make their own decisions on how to apply the ECTS grading scale to their own system.

In the ECTS grading scale, the grades A, B, C, D, E, Fx, and F are used. This correlates to the Finnish grading system as follows:

- 5 = Excellent (A)
- 4 = Very good (B)
- 3 = Good (C)
- 2 = Fair (D)
- 1 = Pass (E)
- 0 = Not approved (F)
- GK = Approved
- G = Good

5. EVALUATION OF THE EPS PROGRAM

To further improve the EPS program at Novia UAS, we ask for the student's opinion about the quality of the courses and the project.

Project evaluation procedure

At the end of the EPS semester, students will receive an e-mail with the request to do an individual report about the Novia-EPS experience.

Filling in the evaluation forms is obligatory. Please fill in these forms as clear and honest as possible. **Any critical remarks will not be held against you!**

APPENDICES

a) Ten Golden Rules for EPS

- 1) English is the working language of EPS.
- 2) EPS is multinational, with a group size of min. 3 and max. 6 students, being 4-5 the ideal number; min. 3 nationalities must be represented in an EPS group.
- 3) Ideally, but not necessarily, an EPS project is multidisciplinary
- 4) An EPS semester is 30 ECTS, the duration of which is not less than 15 weeks.
- 5) An EPS project is min. 20 ECTS and the subjects between 5 and 10 ECTS.
- 6) The main focus of EPS is on teamwork.
- 7) The subjects included in EPS must be project supportive; English and a basic crash course in the local language must be an option.
- 8) The subjects must include Teambuilding at the very beginning and Project Management at the beginning of an EPS semester.
- 9) Project supervision/coaching must focus on the process as well as the product.
- 10) EPS must have continuous assessment including an Interim Report and a Final Report.

b) Assessment Procedure

Overview over grading elements.

element	EPS examination	Total Mark %	Supervisor	External Examiner	Student
PERSONAL	1. Oral presentation	15	X	X	
PRODUCT	Report 50 %				
	1. Professional content 2. Communication value	35 15	X X	X X	
PROCESS	Teamwork	35	X		X Point distribution. Self and peer assessment of project performance
	Total	100			

A monthly peer evaluation is made within each team in order to help the supervisors to detect possible hidden problems in the team.

Novia EPS 2013

Monthly **self** and **peer** assessment to be handed in to the supervisor

Team: _____ Student: _____

Date: _____

The assesment has the following elements:

individual contribution to the group report, the **documentation** submitted (questions 1 and 2)

individual contribution to the teamwork, the **process performed** (questions 3, 4, 5, 6, 7)

		poor				Excellent
	Give your evaluation like this (example):	1	2	3	4	5
1.	Technical contribution (quality)	1	2	3	4	5
2.	Technical contribution (quantity)	1	2	3	4	5
3.	Willingness to build on the ideas of others	1	2	3	4	5
4.	understanding of team process	1	2	3	4	5
5.	leadership at appropriate times	1	2	3	4	5
6.	positive attitude	1	2	3	4	5
7.	initiative shown	1	2	3	4	5

Evaluation type: Peer self

Team: _____ Student: _____

Date: _____

EPS Final Examination

EXAMPLE

Date:

Student Name: **John Malkovich**

Team: Future Film

	Oral presentation	Report	Report	Team Work
John M	0. Individual	Prof. Content	Comm. value	Process Perf.
Supervisor	80%	70%	80%	TWL: 70 %
Examiner	80%	60%	70%	
Mark	80%	65%	75%	TW: 84 %

Table 1

$$TW = TWL \times WF$$

Assessment of project performance

Team: Future Film

student name	a Students point distribution	Weight factor: WF= a/c	remarks
John	30	1,2	
Jim	20	0,8	
Jill	25	1	
Justin	25	1	
Average c =	25		

Table 2.

Student name:

	Assessment	% from table 1	Final mark (%)
0	Oral presentation, individual	80 x 0,15	12
1	professional content	65 x 0,35	22,75
2	communication value	75 x 0,15	11,25
TW	process performance	84 x 0,35	29,4
Table 3.		Sum:	75,4
		ECTS Mark:	C

Finnish Marking Scale

Scale	Percent >	ECTS
5	92	A
4	80	B
3	69	C
2	56	D
1	50	E
0		F