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# INTEGRATED DESIGN

Implementing the ID methodology or its elements in the curriculum/ other existing courses -
set of recommendations, tips, and reflections

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# **INTEGRATED DESIGN** - Implementing the ID methodology or its elements in the curriculum/ other existing courses - set of recommendations, tips, and reflections (English language version)


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## Team-building activities

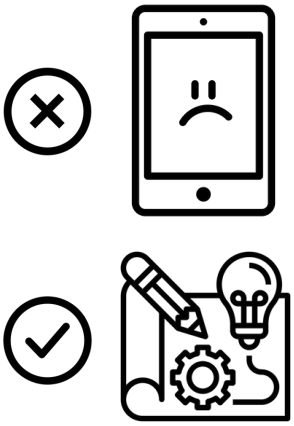
Include several team-building activities. Team projects have their own rules. Smooth project realization depends on several factors including the proper collaboration of team members. Team-building activities help students to get to know each other, build team spirit and improve cooperation between team members. The results will be better if a team is integrated and follows the rules previously discussed and agreed on. Thanks to team-building activities students might be more motivated and engaged in project work. Team-building exercises can be treated as “breaks” in the project realization.

## Challenges

Involve a challenge or a few challenges in the course. Teams can compete with each other, which makes them more motivated to fulfill the tasks. It is a good practice to show team performance on a regular basis. Challenges are a perfect source of learning opportunities and allow students to focus on finding solutions in a short time.

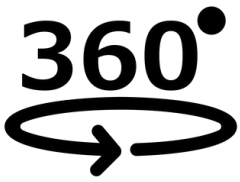
## Not only apps, but also real-life solutions

Although students have a tendency to propose their solutions in the form of an application, it is wise to encourage them toward more tangible solutions. The mean life of mobile or computer applications is very short (usually counted in some weeks or a few months) and there are plenty of new ones each day. Sadly, such solutions rarely hit the level of recognition and meaningful implementation. Student groups without IT members and working on applications have also a tendency to simplify their approach assuming that coding solves everything. Moreover, prototyping feasible solutions and their testing may be much more appealing and gives opportunities to get familiar with engineering aspects such as mechanics, material engineering, chemistry, etc.

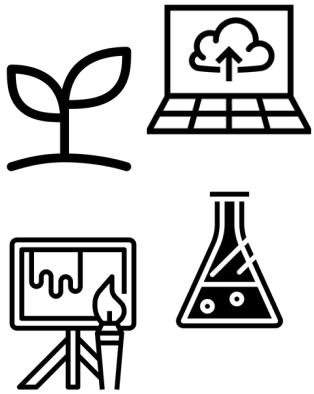


## 360 degrees evaluation

It is a complex evaluation that is strongly recommended. A student receives feedback from their supervisor, coworkers/ team members, and even customers/ clients (if the project is done in collaboration with an external company/ institution). In summer schools, 360 degrees evaluation applies to students as well.



## Interdisciplinary projects format for BA and MA students

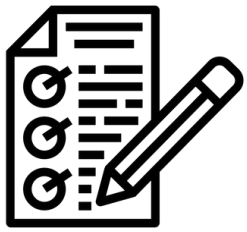


For project- and problem-based learning combining the BA and MA students from different curriculums will give excellent results because the diverse backgrounds and life experiences will be combined. Students from different study areas should also collaborate not only with each other and academics but also with partners from outside the university. The main objective of such a course format is to support the development of general competencies and teamwork skills, which would foster the development of competence in resolving interdisciplinary problems. It teaches students self-management, application of knowledge, and lifelong learning skills.

## Development of Soft Skills

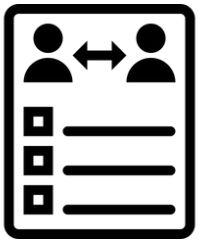
The works proposed must target the development of soft skills of students, because these are very important to improve and sustain the employability of graduates in labour markets, and these skills are not promoted deeply in the HEIs curricula. HEIs mostly highlight hard skills. So, the objectives of a course must also include the development of soft skills, such as team work, interpersonal and personal communication, entrepreneurship, English communication, and others.

## Grading projects



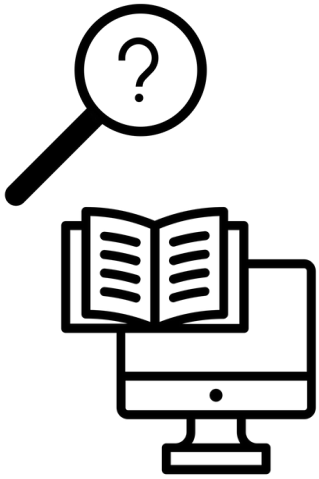
When grading projects, both individual and team-wide criteria need to be considered. We can also point out quantitative and qualitative criteria. In the first phase of integrated design, the quality and quantity of the research can be evaluated. In the second phase, the focus and the adequation of the problem definition also make for good evaluation criteria. The creativity and feasibility of the solution found in the third phase are valid indicators. The quality of the created solution prototype is also important. In general, the perceived degree of cooperation and collaboration inside the team is very important, as is the overall quality of the final presentation of the team's work. Each student can also be assessed on their general interest and assiduity.

## Valuable peer evaluation



Peer evaluation or peer assessment or peer review provides feedback to students from their classmates on their work. It helps students to develop lifelong skills in assessing and providing feedback to others, to self-assess, and to improve their own work.

## Various types of sources

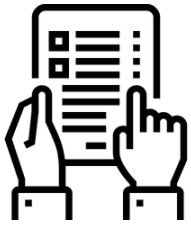


Using the process of ID how to do the research at the university every year at the university. The Discovery phase is significant for it. In this phase students have to be prepared to use various types of sources such as scientific papers from reliable sources, news, videos, and Internet links. The main challenge for freshmen should be to identify fake news and to upgrade their knowledge later with an additional reliable source of information and citation style of literature lists (APA, MLA, ACS, and so on), and how to avoid plagiarism in their research. Additionally to the theory, students should find out how to use supportive tools for making Resource lists and citations as well as to check their documents for plagiarism.

## ID used in the first year

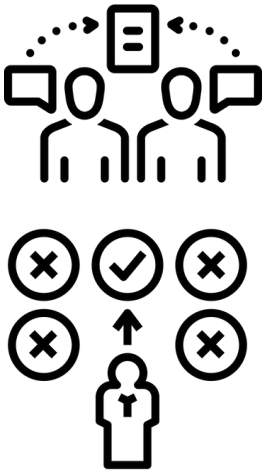
The Integrated Design approach could be used for first-year students during orientation week in several directions: using the city (campus) game for understanding the landscape of the university, creating a freshman team, providing a challenging project, based on the main procedure at the university is important for the students.

## ECTS points



The amount of the ECTS points can be different. The number of ECTS depends on the amount of individual work or included modules in the course.

## Topic selection - collaboration with companies, institutions and municipalities



The collaboration between universities and companies, as well as institutions and municipalities, is very important for two main reasons. On one hand, companies, institutions, and municipalities share with universities existing problems to be solved in different subject fields (management, economics, engineering,...), like entrepreneurship, innovation, research and development of products, services and processes, sustainability, among others. On the other hand, universities are going to apply research and academic knowledge to solve real problems. It will contribute to the entrepreneur and business progress, to the economic development of the population as well as better living places; in general to better standards of living of today's population and next generations. In the specific case of the SMEs, this collaboration will reinforce the advantages of their limited companies.