

Module: Patents

Patents in Environmental Engineering

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REVISION HISTORY

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(*) Action: C = Creation, I = Insert, U = Update, R = Replace, D = Delete

REFERENCED DOCUMENTS

ID	Reference		Title
1	2020-1-UK01-KA201-078934		IPinSTEAM Proposal
2			

APPLICABLE DOCUMENTS

ID	Reference		Title
1			
2			

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1. Engineering Patents Through Environmental Projects

1.1 Learning Outcomes

This module and accompanying lesson plan are Engineering Patents Through Environmental Projects. The term intellectual property (IP) refers to a variety of different types of legal rights. This module mainly focuses on the IP concept of patents, defining what is a patent in Environmental Engineering topic, using exclusive right, Intellectual Property. Patents give the owner the right to take legal action against anyone who makes, uses, sells or imports it without their permission.

Students will learn about Patents as a type of Intellectual Property that specifically protects inventions and they will learn about why patents are particularly important to use for successful businesses.

Estimated seat time: 1 hour

1.2 Main Content

1.2.1 Terms and Definitions

This module will explore the topic of patent rights in Environmental Engineering field. There is a link between engineering and intellectual property (IP). A patent is an exclusive right granted by a government for an invention, which is a product or a process that provides, in general, a new way of doing something, or offers a new technical solution to a problem.

Teachers will have the opportunity to explore methodologies to support student-centric activities in research and discovery learning, scientific writing, prototyping, design fabrication, and market research. In addition, students will learn about the latest innovation and STEM curriculum developed in Environmental Engineering field.

1.2.2 Theory behind the IP implementation

Most patent savvy businesses skillfully use patent databases, for example, to identify opportunities for adapting or acquiring patented inventions, or technologies. Also, mining a patent database may provide a solid basis for developing new ideas and concepts. The availability of useful information in patent databases depends on the nature of the business or industry.

The lesson plan will be linked to concept of patent and international protection for an innovative technology. In order to get a Patent, first, we have to identify an invention. Patents are a type of Intellectual Property that can be seen as a representation of codified knowledge, protecting inventions.

1.2.3 Practical examples

Teacher will invite students to explain the concept of patent. *A patent is a legal intellectual right granted by an authorized government entity (patent office) to exclusively protect an invention from unauthorized use for a certain period of time.* To register a patent, the invention must be something that can be made or used and inventive - not just a simple modification to something that already exists.

Products will be evaluated on the originality of the design, on the quality of their presentation and on the accuracy of the information on how to register these design rights.

The teacher's role will be to invite students to work in small groups to create their presentation about definition and rules of patents in engineering.

Students will be able to explain the effect of a patent and to analyze the video message - https://www.youtube.com/watch?v=avZ_Dn-yQ4w, *Patents For Beginners: A Practical Introduction* from youtube.

1.2.4 Case studies

Activities in class- STUDY CASE – Requirements for Patentability - Patenting for Cleaner Air

Teacher will present the case of a company called *EnviroScrub Technologies*, link at <https://www.wipo.int/ipadvantage/en/details.jsp?id=910>

Teacher should also prepare some questions for the rest of the students to set up a debate and keep their audience engaged.

Teacher will invite students to debate all aspects of IP protection and patent rights:

For a patent or portfolio of patents to be considered productive, it must accomplish at least one of three goals of the company:

- It must be needed to shape or execute the corporate strategy
- It must help in maintaining or establishing a marketing advantage,
- It should generate royalty revenue or prevent payment of royalty revenues to others

Students will follow teacher presentation and will debate the case and the patent process.

This case highlights the importance of conducting an appropriate patent search before presenting a new product in the market, in order to minimize the risk of their product infringing any patent.

In the conclusion phase, main points, answers, results and steps are summarized. In this phase students may have discussion, communication and reflection to wrap-up key topics addressed in the lesson plan. Students are encouraged to express their views and their opinions.

1.3 Knowledge Assessment

A short quiz of about 10 key questions that can be used to check the learners' knowledge acquisition. Correct answers can be marked in bold.

Question 1: A patent is granted by a national office or regional office and has no effect beyond the national or regional boundary of the country or countries concerned.

True/ False

Question 2: A patent is valid for a maximum period of 20 years, counting from the filing date of the application or from the date of an earlier related application.

True/ False

Question 3: A patent application must provide detailed technical information about the features of the claimed invention;

True/ False

Question 4: A patent confers on its owner the rights to make, use, offer for sale, sell, license and import a claimed invention.

True/ False

Question 5: A patent application must indicate how the invention may be applied in industry or commerce.

True/ False

Question 6: An applicant must not disclose in a patent application how the invention can be made or carried out;

True/ False

Question 7: By reading a patent application a person with ordinary skills in that field of technology must be able to practice, use or reproduce the invention without having to do undue experimentation.

True/ False

Question 8: A patent is an exclusive right to prohibit third parties to use commercially in the territory where a protection is granted.

True/ False

Question 9: The invention is disclosed in the patent application.

True/ False

Question 10: All inventions are patentable.

True/ False

1.4 Skills Assessment

One of the most important skills to improve when it comes to Intellectual Property concepts is analytical skills, which can help individuals to draw conclusions and solve complex problems from the analysis of all data available.

2. References

https://www.youtube.com/watch?v=_oTJ4L0XAYE

<https://www.slideshare.net/gderasse/a-comic-introduction-to-intellectual-property>

<https://www.youtube.com/watch?v=iV-aTj-bow>

[Zero-Energy Housing - Activity - TeachEngineering](#)

[Environment Lessons, Worksheets and Activities \(teacherplanet.com\)](#)

[A Violation of Privacy - Markkula Center for Applied Ethics \(scu.edu\)](#)

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