



MODULE: INTELLECTUAL PROPERTY

OVERVIEW

Learning Objectives

At the conclusion of this module, you will be able to:

- Interpretation: Identify the elements that should be found in a patent.
- Interpretation: Define the purpose of intellectual property and its importance in legal protection.
- Evaluation: Critique an idea for nonobviousness.
- Evaluation: Define the main ways of legally protecting intellectual property and understand the differences between each.
- Application: Perform a U.S. patent/trademark search.

Checklist

Prior to meeting with mentor

- Review the information provided in this module and complete all deliverables.
- Familiarize yourself with the US Patent and Trademark website.
- Complete the Five-Minute Reflection.

Discussion with mentor

- What is important about intellectual property?
- How is inventorship determined?
- Takeaways from Five Minute Reflection.

Mentee Deliverables

- Deliverable 1: Save a copy of your paragraph and reference list.**
- Deliverables 2: Save a copy of your answers to the two questions regarding patent applications and patent sections.**
- Deliverable 5: Save a copy of your responses to the Five-Minute Reflection.**



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- **Deliverable 6: Send an electronic file containing Deliverables 1, 2, 3, 4, and 5 to your Mentor (preferably at least the day before your meeting) and bring your own printed or electronic copy to discuss at your next Mentor meeting.**

Materials for this Module

- Reference Manager (installed on your computer and your account created)
- Free Patent Databases:
 - The United States Patent and Trademark Office (USPTO) is the federal agency for granting U.S. patents and registering trademarks. This is the official site for patents: uspto.gov
 - Google Patents provides additional tools to view and search patents: patents.google.com
 - Free Patents Online: www.freepatentsonline.com
 - Lens provides additional tools to view and search patents (patents are searched separately from "Scholarly Works"): www.lens.org

Introduction

Whether you are an author, entrepreneur, artist, or engineer, legally owning the work that you produce is vital to prevent others from using your ideas without permission or presenting your ideas as their own. Intellectual property prevents you from infringing on the works of others and it protects your own work. There are a number of different avenues one can pursue to protect intellectual property such as patents, trademarks, copyright, and trade secrets. If you are working in a research group, inventorship is generally determined by contribution of technical, patentable aspects. A person who conducts work but does not generate novel aspects to an existing idea is likely not a coinventor.

Patents are one of the most common types of intellectual property and are used exclusively to protect inventions. United States patents are granted by the government through the United States Patent and Trademark Office (USPTO) to prevent others from making or selling the invention as well any novel features associated with it. An idea must be “nonobvious” to an individual “skilled in the art” to be patentable. Generally, the term of a patent is 20 years from the date on which the application for the patent was filed in the United States. Once the patent expires, anyone may make, use, or sell the invention without permission from the owner. There are three types of patents inventors can file for depending on the invention:

- Utility patents are the most common patent type, with purpose to register and protect novel processes or compositions. Utility patents can also be filed for novel inventions or process improvements on already existing devices.
- Design patents are any novel “surface ornamentations” of an object which includes configuration or geometry. To file for this type of patent, the design must be proven to be unique from the object and only protects the appearance of the object.
- Plant patents are filed to protect novel new species or distinctive plants. This type of patent requires that the plant can be reproduced asexually.



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The USPTO is responsible for the examination of all patent types, see uspto.gov. Inventors who want to protect an idea quickly, but need more time to explore the details of their invention may file for a provisional utility or plant patent application. Applicants have one year from filing a provisional patent application to file a nonprovisional application; upon filing the nonprovisional application, the USPTO will begin the official examination process to determine if the invention is eligible for protection. The costs for filing nonprovisional patent applications can be extremely expensive ranging from \$5000-\$15000. Thus, the importance of conducting extensive patent searches cannot be understated. Anyone can access the USPTO database at no cost to search already existing patents. Inventors should periodically reference the database to stay current on recently filed inventions similar to their own.

In contrast to patents, trade secrets are a way to protect ideas through secrecy. Trade secrets can comprise formulas, processes, practices, designs, or anything that is critical to the novelty of a product or idea. Trade secrets are considered unknown or unascertainable to an outsider and companies protect these secrets using non-disclosure agreements (NDAs) or non-compete clauses. These documents are signed by employees and serve as an agreement that the employee will not share any proprietary information to outsiders, will not work for competitors over a period of time, and waive ownership of intellectual work over the course of their employment.

Sometimes, one may wish to protect a logo or symbol that will be associated with a new/evolving brand. Slogans, designs, or anything that uniquely distinguishes or represents an entity must be protected under a trademark in order to clarify the source of the goods or services. Trademarks do not protect against goods or services with similar intent and differing marks, they do not need to be registered; however, registration allows more formalized brand recognition and is done so through the USPTO. Unlike patents and copyrights, trademarks do not expire after a certain period of time and can be used indefinitely so long as the mark remains used in business. If a mark is registered, the ® logo will appear after it, unregistered trademarks commonly use ™.

The last common way to protect intellectual property is through copyrights. Copyright is the protection of authorship to a creative work and gives the owner the right to publish, sell, or distribute their content over a set period of time. Copyrights differ from patents or trademarks in that copyrights only protect an expression of an idea such as a movie or song and thus would not be protected under patent or trademark law. Copyright infringement is often tricky waters to navigate because oftentimes the copyrighted material can be used in limitation to create novel artistic works—this is called “fair use”. There have been many major legal cases in which parties could not agree on what was infringement versus fair use. Be very prudent when using copyrighted material in your own work!

Assignment(s) for this Module

Whether you are a researcher, engineer, or entrepreneur, it's necessary to be aware of devices related to your work that currently exist on the market. We can save ourselves a lot of time and money if we have a good understanding of existing patented technologies before we continue designing our own inventions. Go to the USPTO patent database and perform a search for patents related to your research. Find at least five



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relevant patents and take note of the claims and drawings. How are these inventions similar/different to your own?

Deliverable 1: Provide answers to the questions in the form of a paragraph and cite and reference the patents appropriately (use a citation manager to do so, be aware that you may have to manually add a patent to your citation manager database). Send an electronic copy of your paragraph and reference list to your Mentor (preferably at least the day before your meeting) and bring a printed or electronic copy to discuss at your next Mentor meeting.

You are working on a research and development team tasked with creating a new and improved catheter for surgery. You are responsible for filing for a patent when the team has finished the new design. Which type of patent application do you need to file? Write a list of the sections required in the patent. Use the USPTO website as a reference.

Optional: If you are currently working on a research project, complete this assignment using the topic you are currently researching.

Deliverable 2: Record your answers to each of the questions. Bring a printed copy of your answers to discuss at your next Mentor meeting

Think of different types of trademarks used in commerce. What are elements of successful trademarks? Think of at least one example of a logo/design and one example of a slogan. Why do you immediately associate these trademarks with a product? What qualities about these trademarks make them effective?

Deliverable 3: Record your answers to each of the thought questions. Bring a printed copy of the text to discuss at your next Mentor meeting.

List different forms of media that would fall under copyright. Is music from The Beatles copyrighted, and if so, when would their music enter public domain? What if you want to use a clip of a song written by The Beatles in your own unique work, what would be considered "fair use"?

Deliverable 4: Bring a printed copy of your answers to the next meeting.

Five-Minute Reflection

What are some of the pros and cons of patents and trade secrets? List some examples of when you might want to use one over the other.

What legal ways of protecting intellectual property would most closely apply to your profession or current workplace circumstance?



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Formulate one question to discuss with your mentor (maybe a concept you are unclear on, something you found interesting, etc.)

What information did you feel was the most informative? Least?

Deliverable 5: Bring a printed copy of your responses to the Five-Minute Reflection to the next meeting.