**ENG1P13 Design Communication Workshops**

**Workshop #2**

**Learning Objectives**

In this workshop, students will be trained in a hands-on experience and are expected to become familiar with:

* Learn about research sources, IEEE citations and citation management (Zotero)
* Working with and collecting information from standards
* Working with and collecting information from patents

Note: Online modules are created to understand these concepts even better. You can refer to “Engineering and Information: Research Skills for Engineers” at <https://ecampusontario.pressbooks.pub/engineeringandinformationresearchskillsforengineers/>

This workshop covers the information of “Patents” and “Standards” chapters of the book.

**Activity #1: Working with Guidelines/ Standards**

This activity is designed to help you learn to find, read, and collect information from guidelines and standards.

Look at the [Ontario Drinking Water Quality Standards](https://www.ontario.ca/laws/regulation/030169). Answer the following questions pertaining to these standards:

1. How does this document protect the quality of Ontario’s drinking water?

This document protects the quality of Ontario’s drinking water by setting some expectations for everyone who provides drinking water services. For example, if there is a Microbiological standard that the water does not have E. coli, then the owner of the property must `make sure that the water does not have E. coli, otherwise, he would be violating paragraph 1 of subsection 11 (1) of the act which can result in potential legal action against the owner of that property.

1. What kinds of substances are included in this standard?

There are vast majority of substances that are included in this standard, but they can be categorised in 3 schedules. These 3 schedules are microbiological standards (checking microorganisms in the water), chemical standards (checking chemical elements and chemical compounds in the water), and radiological standards (checking for radioactive components in the water either natural or artificial).

1. Who would use this document?

Owners of the properties that are willing to create some service for the public on their property. For example, if someone wants to rent out their cottage, they might want to check whether the water quality meets the requirements. However, this document would generally be used by lawyers and people testing the water in the lab, to ensure that everything is according to regulation.

1. Who benefits from the existence of this regulation? How do they benefit?

The whole population. By having this regulation, the whole population of a country can benefit from making sure that their water is drinkable. The way they benefit is by making sure that every company is going to provide services with water that is safe for people to drink and that is not going to have any disease-causing organisms, so the overall health of the whole population is better.

1. This document is both a standard and a regulation. What does that tell us about it?

If a document is a standard, then it is “voluntary” to follow it. However, if a document is both a standard and a regulation, it must be followed because it is included in legislation.

1. What Act enforces this regulation? When was the act created?

This regulation has been enforced by the Safe Drinking Water Act, of 2002.

If you have more time, you may complete more than one of the above tasks. Feel free to look through the McMaster resources for additional resources that you may want to use in the future.

**Activity #2: Working with Patents**

This activity is designed to help you learn to read a patent and to introduce you to the basics of patent searching. Patents are a useful source of information for helping you to identify existing technologies. You can use patents to find new ideas for how you might solve a problem or to inspire new ways to improve on existing solutions.

**Part A:**

Answer each of the following questions for the patent US 10,691,955 B1 (posted on Avenue to Learn under Content>3-Labs>Design and Communication Workshops>DC2).

1. List the title of the patent.

Aircraft Cabin Artificial Intelligence Crew Assistance

1. Who are the inventors listed on this patent?

Bruno J. Correia Gracio, Madrid (ES) and Stephen Sweeney, Madrid (ES)

1. The assignee is the person or entity who owns the rights to the patent. Who is listed as the assignee for this patent?

Boeing Company, The, Chicago , IL, US

1. The filing date of a patent is the date on which the patent application was received by the patent office. The issue date is the date the patent is issued by the patent office. When was this patent filed? When was it issued?

It was filed on April 2nd 2019. It was issued on 23rd of June 2020.

1. Describe the invention in a few sentences.

The invention is a system for cabin crew assistance. The cabin crew would input a category, and then the system of cameras on board is going to use Artificial Intelligence to determine the probability and alert the cabin crew if the probability value is greater than the threshold probability value.

1. A patent’s claims define what elements of the invention are protected by the patent. How many claims does this patent make? Where can the claims be found in the patent?

This patent has 20 claims. These claims can be found in a numbered list at the end of the document.

1. The International Patent Classification (IPC) scheme is a hierarchical system that groups patents for similar technologies together. IPC symbols are listed in field 51 on a US patent. What IPC classification symbols are applied to this patent?

G06Q 10/06 (2012.01), G06K 9/00 (2006.01), GOON 5/04 (2006.01), G06K 9/62 (2006.01), H04N 5/265 (2006.01), B640 11/00 (2006.01), B64D 47/08 (2006.01), B64D 45/00 (2006.01), HO4N 5/247 (2006.01) G06Q 30/02 (2012.01).

1. Choose one of the IPC symbols on the patent and use the [IPC scheme](https://www.wipo.int/classifications/ipc/en/) to identify what the IPC symbol means, including section, class, subclass, and group and/or subgroup. Refer to the table below for an example for IPC symbol A63H 23/12. Note that not all IPC symbols include a subgroup.

G06Q 10/06 (2012.01)

|  |  |  |
| --- | --- | --- |
| Level | Symbol | Title |
| Section | G | Physics |
| Class | G06 | Computing; Calculating or Counting |
| Subclass | G06Q | Information and Communication Technology [ICT] specially adapted for administrative, commercial, financial, managerial or supervisory purposes; systems or methods specially adapted for administrative, commercial, financial, managerial, or supervisory purposes |
| Group | G06Q 10 | Administration; Management |
| Subgroup | G06Q 10/06 | Resources, workflows, human or project management; Enterprise or organization planning; Enterprise or organization modelling. |

|  |  |  |
| --- | --- | --- |
| Level | Symbol | Title |
| Section | A | Human necessities |
| Class | A63 | Sports; games; amusements |
| Subclass | A63H | Toys |
| Group | A63H 23 | Toy boats; Floating toys; Other aquatic toy devices |
| Subgroup | A63H 23/12 | Waterborne toy projectiles; knock-apart toys; exploding ship toys |

**Part B: Searching for patents**

There are many free tools available to help you search for patents. You can search in the patent databases provided by different patent offices such as the [Canadian Patents Database](https://www.ic.gc.ca/opic-cipo/cpd/eng/introduction.html), [United States Patent Database](http://patft.uspto.gov/), and [J-PlatPat](https://www.j-platpat.inpit.go.jp/) (Japan Patent Office). There are also free tools that include patents from a variety of countries such as [Espacenet](https://worldwide.espacenet.com/) (provided by the European Patent Office), [The Lens](https://www.lens.org/), and [Google Patents](https://patents.google.com/).

In the next few questions, you will explore searching with Google Patents. This is a great tool to use when you are learning to search for patents because it includes patents from many different patent offices around the world, and the interface is familiar and easy to use.

1. Go to Google Patents ([patents.google.com](https://patents.google.com/)) and conduct a search for **sorting recyclable materials***.* Write the title and patent number for one relevant result.

Title: System and process for automatically sorting recyclable materials after garbage classification.

Patent Number: CN111468525A

1. One relevant IPC class for patents about sorting recyclable materials is *B07 Separating solids from solids; sorting*. Try searching for **B07** in Google Patents. Write the title and patent number for three relevant results.
2. Title: Sorting and classifying apparatus; Patent Number: JP2011025208A;
3. Title: A multi-deck screening assembly; Patent Number: GB2523658B;
4. Title: Method of and apparatus for the pre-processing of single stream recyclable material for sorting; Patent Number: US20100230330A1
5. You can look up patents by inventor or assignee in Google Patents using the [advanced search](https://patents.google.com/advanced). In Google Patents, try searching for patents that list **Apple Inc** as the assignee. How many results do you find?

More than 100, 000 results.

1. In Google Patents, try searching for patents that list **Stephanie Kwolek** as the inventor. How many results do you find? What kinds of things did she invent?

I found about 34 results. Synthetic polymers, Kevlar, and many other materials.

**Activity #3: Executive Summary**

In this activity you need to investigate patents to get general ideas about what the existing technologies related to clean energy production.

* In project 1, we discussed different design elements related to wind power and wind turbines, which is a clean energy source.
* For this activity, you will search for patents related to other clean energy sources. You may research solar power, hydropower, carbon capture and storage, or any other clean energy sources you find interesting or appealing.
* You are required to search patents to find technologies related to your preferred topic. **You need to investigate at least 2 related patents.**
* Using your knowledge of previous workshops, you should work to create a summary of the results in a Word document. Try to have graphical representations of your findings so they can use the new knowledge of working with MS Word.

**Note**: By now, you have enough information on using MS Word. Be creative and organize your responses to the proposed questions of activity#1 in a Word document and convert it to pdf. This will be one of the files you need to submit at the end of this workshop. If you are referring to patents in your document, make sure you use IEEE format for your bibliography.

**Submission Guideline:** at the end of the workshop, you are required to submit 3 documents as well as complete the quiz on avenue titled Design and Communication Workshop 2:

* 1. A copy of US patent information (from activity #1), name the pdf file as “MacID\_Workshop#2\_OntarioWater.pdf”
  2. A copy of “Working with US Patent”, activity #2(both parts A & B), naming convention of “MacID\_Workshop#2\_PatentpartsA&B.pdf”
  3. A copy of executive summary (from activity #3), name the pdf file as “MacID\_Workshop#2\_ES.pdf”
  4. **Complete avenue quiz titled Design and Communication Workshop 2**

All documents should be submitted as pdf files on Avenue to Learn in the Dropbox titled “Design Communication Workshop 2”.

Design and Communication Workshop 2 is due on **October 31st at** **11:59 pm**