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Patents Information Literacy Engineering Technology Session Materials

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Pre-work for Patents Searching Session

This pre-work will take about 20-25 minutes of your time.

1. **Complete this pre-assessment survey by class on [Due Date]:[Link to that term's pre-assessment]**
2. **Complete this introductory patents activity by class on [Due Date]**. Here you will examine two U.S. patents and answer questions about them.

View US Patent #8876571 (PDF: http://bit.ly/1WKIzQ8)

Field #54 is the title of the patent.

a. What is this patent's title?

_____

_____

b. Looking at the title, the abstract, and the drawings, how would you describe this invention in your own words?

_____

_____

_____

2. Field #45 is the issue date and Field #22 is the filing date.
   a. When was this patent granted? _____
   b. Assuming all fees are paid, patents last approximately 20 years from their filing date. What year will this patent expire? _____
   c. Approximately how long did it take for the United States Patent & Trademark Office to approve this patent? _____
3. Field #72 lists the inventors and Field #73 lists the assignee (the person or company to whom the inventors assigned the rights).
   a. Who are this patent's inventors?

      _____

      _____

   b. Who is this patent's assignee? _____
4. Field #52 lists the codes used by the United States government to identify the types of technology used in the patent. The main classification currently used by the government is the CPC system.
   a. What are the primary CPC classifications (written in bold)?

      _____

   b. Use http://worldwide.espacenet.com/classification to get the names for the two listed primary classifications.

      _____

5. The claims, the precise legal definition of the patent, appear as a numbered list at the end of the document, following the words "we claim".
   a. How many claims are listed? _____
   b. How many independent claims (claims which do not refer back to a previous claim) are listed? _____

View US Patent #8662513 (PDF: http://bit.ly/1Vlhba6)

6. Field #54 is the title of the patent.
   a. What is this patent's title? _____

7. Field #52 lists the codes used by the United States government to identify the types of technology used in the patent. This patent uses an older system, USPC, which is no longer in use.
    a. What is the primary USPC classification (written in bold)? _____
    b. Use http://www.uspto.gov/web/patents/classification/ to convert the USPC classification to a CPC classification. Select "USPC" as the system, and select "Statistical Mapping from USPC to CPC." What is the most likely CPC classification? _____
    c. Use http://worldwide.espacenet.com/classification to get the name for the most likely CPC classification. _____
8. Many inventors apply for patents in multiple jurisdictions. Go to http://www.lens.org and search for "US8662513," then select the patent, and go to the "Family Info" tab.
    a. Looking at the world map on this page, in which other countries is this inventor pursuing a patent? _____
    _____
    b. Looking at the list of documents below the map, how many patents have actually been granted (i.e. how many are listed as "granted patents" instead of "patent applications")? _____

In-Class Patent Searching Activity

Work in your teams to complete this activity for your projects.

1. **Spend 5 minutes describing your invention - get ideas from all team members.**
    a. How would you describe the invention?

    b. How would you describe it if you were explaining it to a small child?

    c. How would you describe it if you were explaining it to an expert in the field?

    d. List synonyms and alternate descriptions for the invention.

    e. What is the main use case for the invention? Are there alternate use cases to consider?
2. **Do a preliminary keyword search using http://www.lens.org or http://www.google.com/patents.**
    a. Use some of the keywords you brainstormed in #1 to do a quick keyword search of the full text. How many results did you get?

    b. Narrow the search results to only United States of America patents using the "Jurisdiction" option under "Refine Search" in Lens or the "Patent Office" option under "Search Tools" in Google. How many results did you get?

    c. Narrow the search results to only Granted Patents using the "Document Type" option under "Refine Search" in Lens or the "Filing Status" option under "Search Tools" in Google. How many results did you get?

    d. Look at the top hits, ranked by relevance. Find one that's in the right area of technology as your invention. Not the same, obviously, but in the right ballpark. You may need to click through to the full patent, since patent titles can be inscrutable. What is it?

    e. In the patent record, at the bottom of the page, there should be a list of "CPC Classification" or "Cooperative Classification" codes. What are they?

3. **Identify relevant classifications using http://worldwide.espacenet.com/classification or http://www.uspto.gov/web/patents/classification/cpc.html**
    a. Take the main CPC classification (the first one) and identify what each of the pieces mean. As an example, here is the classification for a card shuffling device:
        A: Human necessities
        A63: Sports and games
        A63F: Card, board, roulette, miniature, and video games
        A63F1: Card games
        A63F1/12: Card shufflers
    b. Discuss as a team - does this classification make sense for your invention?
    c. Are there any classifications nearby that might better describe your invention? If so, what are they?

4. **Use Lens (http://www.lens.org) to perform a classification search.**
    a. Take your new classification from #3c (or the original one from #3a if it still works) and search using the Advanced Search feature. Select "CPC Classifications" in the dropdown menu. How many results did you get?
    b. Refine to U.S.A. granted patents, the same way as in #2. How many results did you get?
    c. Go to the graphic view (the little bar graph icon in the upper right of the search results) and answer the following questions.
        i. Who are the two most prolific inventors in this class?
        ii. Which two companies (or people) own the most patents in this class?
        iii. Aside from the class we just searched, what are the two most common CPC classifications in this class?

5. **Look at the results.**
    a. Go back to the list of search results and look at the documents you've retrieved. Are they in the right ballpark? How do the results compare to the results (numbers of results received, relevancy of results, etc) from the basic keyword search in #2?

    b. Pick a relevant patent and take a look at it (the PDF, not the Lens record).
        i. Who is the inventor?
        ii. Who is the assignee?
        iii. When was it filed, and was it before or after February 9th, 1996?
        iv. What are the other CPC classifications listed?
        v. Are there any references listed? How many?
        vi. Looking at the claims, how close is this to your invention?
        vii. Do you see any keywords or ways of describing the invention that you wouldn't have expected, based on your brainstorming (#1)?
6. **Iterate.**
    a. Perform the following searches and compare the results to previous searches:
        i. Search using one of the alternate CPC classes you've identified (#3c, #4c, #5b).
        ii. Search for one of the references (#5b) using the patent number.
        iii. Search for one of the alternate keywords (#5b).
        iv. Search for other patents by the most prolific inventor in this field (#5b).

In-class Patents IL Lesson Plan

Student Pre-work (assigned by instructor a few days before class)	See Appendix A
15 min	Introduction ● Ask the students to complete the online pre-assessment as they come into class, if they have not already ● Debrief pre-work -- go through by bringing up the worksheet and patents. Walk through -- pausing at some points to address questions like: ○ how did you describe the first patent in your own words ○ what you did put for 2b -- the year the patent expires? ○ what did you put for 8A, 8B ● Explain the rest of the session to the students: Now that they have some experience with patents we will spend about 10-15 minutes providing a short introduction to patents and patent searching and then the remainder of the class time will be spent working in their groups to find patents related to their design projects.
15 min	PP slides on IL session goals and patent basics
25 min	Group work - See Appendix B
20 min	Activity debriefing discussion, conduct post-assessment, discuss comparison to pre-assessment results, wrap up

Online Pre and Post Assessments

Pre-Assessment

1. What is your experience with patent searching? Check all that apply:
    - I have searched for patents before for class assignments
    - I have searched for patents before for personal needs/interests.
    - I have no experience searching patents.
    - Other: (write in option)
2. Rate your level of agreement with this statement: "I am confident in my ability to conduct a thorough patent search." (Likert Scale)

1 - Not Confident	2	3	4	5 - Very Confident

3. Evaluate the following statements about patents. Check all that are TRUE:
    - The purpose of patents is for academics to formally present their research, including their methodologies and findings.
    - A patent grants intellectual property rights to an inventor or assignee.
    - Patents are issued by governments.
    - Only corporations or universities can apply for patents.
    - Patents contain detailed technical information.
    - Using topic keywords and synonyms is the most efficient way to search for relevant patents.

Post-Assessment

1. Rate your level of agreement with this statement: "I am confident in my ability to conduct a thorough patent search." (Likert Scale)

1 - Not Confident	2	3	4	5 - Very Confident

2. Evaluate the following statements about patents. Check all that are TRUE:
    - The purpose of patents is for academics to formally present their research, including their methodologies and findings.
    - A patent grants intellectual property rights to an inventor or assignee.
    - Patents are issued by governments.
    - Only corporations or universities can apply for patents.
    - Patents contain detailed technical information.
    - Using topic keywords and synonyms is the most efficient way to search for relevant patents. (spring 2016 version) / Keyword searching alone is the most efficient way to search for relevant patents. (summer 2016 and spring 2017 versions)