

## Information Literate Engineer: Assignment #4: Sequenced Research Paper in Engineering Drawing

Your name: \_\_\_\_\_

Your e-mail address: \_\_\_\_\_

Programme: \_\_\_\_\_

Course Name: \_\_\_\_\_

Semester: \_\_\_\_\_

### Description

First, this set of assignment is designed to help you develop initial thoughts and questions into carefully scoped and well-reasoned research papers. These sequenced assignments help elucidate the iterative nature of research, as well as its dependence upon asking increasingly complex or new questions that birth additional lines of inquiry (*ACRL Information Literacy Framework threshold concept Research as Inquiry*).

Second, this series of assignments contributes to the development of critical thinking skills by asking students to interrogate engineering draws and images or videos of concepts that have proved to be some of the most difficult and challenging in the engineering history.

Six individual assignments are described below, but the first five are easily combined in a variety of ways.

**Part 1:** Locate, cite, and analyze the contexts of 5-8 engineering images/ drawings or videos (1 page plus citations)

**Part 2:** Introductory research statement (1 page)

**Part 3:** Significance of selected engineering images/ drawings or videos in engineering and practice (2-3 pages)

**Part 4:** Further analyze image or videos contexts and effects on reception (4-5 pages)

**Part 5:** Significance of these contexts and their effect on images' meaning (2-3 paragraphs)

Part 6: Final research paper (8-10 pages)

## **Student Learning Objectives**

- a) Critically evaluate images/ drawings of engineering concepts (primary sources), using criteria such as date, authorship, context, and rationale for creation and/or dissemination.
- b) Formulate an appropriately scoped research question based on information gaps or on reexamination of existing information.
- c) Locate and access pertinent scholarly sources beyond course readings.
- d) Analyze specific aspects of an engineering concept as historical, social, and cultural phenomena through integration of course content and outside scholarly sources.
- e) Demonstrate an understanding of the value of information and nature of the scholarly conversation through the consistent and accurate citation of sources in Chicago style.
- f) Interpret chosen images (primary sources), course material, and other secondary sources in order to draw reasonable conclusions about the transformation of engineering concepts through their circulation in the engineering profession.

## **Assignment Instructions**

Your writing assignments for this course are modular; they will build upon one another and culminate in a final research paper of 8-10 pages. The purpose of these assignments is to help you:

- Practice thinking critically about how images or drawings of engineering concepts are used in the engineering profession, and
- Develop an analytical, research-based paper.

**Part 1. a.** Use Google Images or Yahoo's Flickr to locate 5-8 images or Youtube or Vimeo to locate videos of engineering concepts that interest you. [Customize according to the scope of the class.] Flickr, Vimeo

Examples: For example a video about a Harrier - the Jump Jet – the only plane that can take off vertically

b. List the full Chicago style citations for each image or video. Then, write a 1-page response to the following:

- Which terms from the readings, lectures, or class discussions were useful? Which proved less useful for searching?
- In what context did you find these images or videos? Are there clues to:
  - ✓ Date: when was the image/ video created and/or disseminated?
  - ✓ Authorship: who produced the image/ video or the object pictured?
  - ✓ Rationale: why the image/ video or the object pictured were produced and/or shared?

**Part 2.** Draw on the images/ video you've selected, the clues to their context, class readings, and lectures to develop a 1-page introductory statement of your research question or problem. This statement should specify what you will be researching and why, including:

- Which images/ video you plan to focus on (minimum of 2)
- Context or reason for your research— what's significant about the images/ videos and/or where you've found them
- Rationale for studying these images/ videos together
- Clear statement of your research question/problem— what do you want to study about how the images/ video circulates in engineering field?

**Part 3.** Write 2-3 pages explaining the significance of these images/ videos in engineering practice. Use class readings, lectures, and at least 2 outside scholarly sources to inform your essay. Cite all sources in Chicago or APA style.

Questions you may wish to consider include:

- Have the significance, beliefs, and/or practices changed over time?
- In what ways do they differ historically? What has been the factors that have driven the changes or iterations in design?

For your own use in upcoming assignments, create a list that combines your successful search terms from Part 1 with the ones you've used here to find relevant scholarly sources.

**Part 4.** Draw upon course readings, lectures, and at least 2 additional scholarly sources to write 4-5 pages re-examining the context(s) in which your chosen images/ videos occur.

In this paper, you will:

- Characterize and analyze the context(s) of your chosen images/ videos.
- Compare and contrast the context(s) of your chosen images/ videos with the engineering contexts discussed in class, course readings, and the outside scholarly sources you've found.
- Discuss whether and how the context(s) shape the reception of these images/ videos and their corresponding engineering meaning in agricultural mechanisation industry.

Use your list of search terms from Part 3 to locate outside sources. You may use additional open web sources (i.e. current news articles, retailer websites, social media, engineer's blogs) to establish who created and/or disseminated the image/ video and why. Cite all sources in Chicago or APA style.

**Part 5.** What conclusions do you reach about how the contexts in which these images/ videos circulate shape their meaning in engineering practise? Write at least 2-3 paragraphs drawing together and exploring the significance of the ideas you've developed through Parts 1-4.

**Part 6.** Revise your introductory statement of research (Part 2), contextualizing information (Part 3), historical and technical analysis (Part 4), and conclusion (Part 5) into a coherent 8–10-page essay. This essay will analyze how engineering concepts are transformed through their circulation in specific agricultural mechanisation contexts, based on the particular case of the images/ videos you chose.

This paper should use and properly cite a minimum of 4 scholarly sources beyond course readings. You may wish to incorporate additional scholarly secondary sources to make your points. Cite all sources in Chicago or APA style.