## SWANSON SCHOOL FIRST-YEAR CONFERENCE (FYEC) PAPER, SPRING, 2019

**ASSIGNMENT 1, PRELIMINARY PROPOSAL**

* **You will work on/write all aspects of your FYEC paper in assigned teams of 3. You will be receiving information about your team of 3 later this week**
* **For Assignment 1, Your team will submit 1 document: your team's approximately 150-word Preliminary Proposal. Only the Proposal, itself is included in this word count (your FYEC paper title, your names and emails, your paper's engineering fields, and your Sources Consulted section are included in the word count)**
* **A minimum of 5 sources is required; you will have a minimum of 5 sources in your required Sources Consulted section (see "An Important Note on Citations and Sources Consulted for the Preliminary Proposal," below)**
* **Your team's completed, correctly formatted Preliminary Proposal will be submitted as a docx (not as a pdf or Google Doc)**
* **Format requirements for the Preliminary Proposal are on pages 3 & 4**
* **Submission deadline:** Friday, January 18, 8:00 p.m. **No late submissions will be accepted**.
* Further specific **submission** instructions will be provided

**The Process: From Start to Preliminary Proposal**

* Read through the "Topic Areas" in the Call for Papers
* Decide on one or more topic areas suggested by the Call for Papers or pursue a topic area of your team's comes up with on its own
* Immediately begin your research into the selected topic area or areas; move quickly towards increased, required specificity
  + As you continue with your research, you must move, efficiently and effectively, from a topic *area* to a more specific topic/focus
  + A more specific focus/topic will include a *very specific innovation/technology/product*
  + A more specific focus/topic will include an *application/use* for that specific innovation/technology/product
  + A more specific focus/topic will include an *example* of that application/use
  + A more specific focus/topic will include brief *evaluations* of that innovation/technology/product(how, why, and to whom is the innovation/technology/product important?)
* As you are researching, you must be drafting--articulating (not just "in your heads" but articulating "on paper") your emerging FYEC paper topic/focus.
  + By articulating your emerging focus "on paper," by "writing out" your *specific innovation/technology/product; the use/application* of that innovation/technology/product*; an example* of that application*;* and *evaluations* of that specific innovation/technology/product, you will, essentially, be drafting your Preliminary Proposal
* The ready-to-submit Preliminary Proposal must clearly articulate what your FYEC paper will be "about." This must include a description of
  + your ***specific innovation/technology/product***
  + an ***application/use*** for that specific innovation/technology/product
  + an***example***of that application
  + ***evaluations*** of that specific innovation/technology/product (how, why, and to whom is the innovation/technology/product important?)

**An important note on Citations and Sources Consulted for the Preliminary Proposal**

In professional papers of various kinds, including papers in engineering and technology, the "abstract"--the first major component of the paper--does not make note of sources. "Abstracts" typically do not have bracketed citation numbers or corresponding bibliographic information in a Sources section. Of course, as information from the "abstract" is repeated and expanded upon in the paper, in-text citations and corresponding bibliographic information in a Sources section are crucial.

**Because your Preliminary Proposal is much the same as an early version of an abstract** (your FYEC paper will *eventually* include an Abstract), **you will *not* need to include in-text citations within the Proposal**. You ***must* however include a Sources Consulted section**. This section will list, in alphabetical order, the particular sources you used for the Proposal you are submitting.

You do not need to include every source you consulted since you first began discussing your possible topic area. **You *do* need to include, in your Sources Consulted section, those sources that are essential to the Preliminary Proposal you are submitting**. In your Preliminary Proposal, you might have data from sources and you will have overviews and summaries of information from particular sources. The sources that provided this data and from which you developed these overviews and summaries summaries **will be listed in your Sources Consulted section**. As noted, your Sources Consulted will have a minimum of 5 sources appropriate to a university-level paper.

**An Example of Researching, Focusing, Drafting, and Revising**

Your team must narrow your initial “brainstorming” to a paper topic that is appropriate and manageable for the scope and requirements of a 5000-word FYEC paper. Your team must compose/submit a Preliminary Proposal that clarifies what your team's FYEC paper will "be about." Here's an example of a team "in action":

One member of the team has an interest in chemical engineering, one has an interest in mechanical engineering, and one has an interest in aeronautics. The team looks through the Call for Papers topic areas for mechanical engineering, chemical engineering, and even civil engineering and electrical engineering topic areas. The team already knows that

* "chemical engineering," is not an appropriate FYEC paper topic--it is far too broad
* "innovations in mechanical engineering" is not an FYEC paper topic--this is still far too broad

The team discusses where the points of crossover might be for their individual fields/interests. They come up with (and they write this down):

* innovative materials and mechanics for aerospace applications

The team is working in a good direction, but, having read the assignment materials and having paid attention in class, they know that " innovative materials and mechanics for aerospace applications" **is still too broad." Why?** There are too many materials and too many mechanical systems in an aircraft to fully describe, explain, exemplify, and evaluate in a 5000-word paper.

The team begins thinking about specific mechanical systems; the MechE suggests jet engines. After some discussion and continuing research, the team writes down this possible focus/topic:

* innovative materials for jet engines

The team soon realizes, however, that they have the same problem they had before: **there are too many** materials and **too many mechanical systems** in a jet engine **to substantially describe, explain, exemplify, and evaluate in a 5000-word paper.** The team needs to "focus in" even more.

The team's research is providing information about the importance of alloys in optimizing particular jet engine components. Alloys in jet engines are interesting to all the team members; they write down this focus/topic:

* alloys for jet engine components

The team continues to move in a good direction, but there are numerous alloys used in numerous ways in the fabrication of numerous jet engine components. **The topic is still "too big**" to substantially describe, explain, exemplify, and evaluate in a 5000-word paper. Further "focusing in" is needed.

Through ongoing research and discussion, the team decides to write about *a particular alloy* (alloy X) used in the fabrication of *particular* components (components Y and Z) of *particular* jet engines (engines in R type/model commercial jets). The team drafts this focus/topic:

* using alloy X for Y and Z components of R type/model commercial jet engines.

The team *now has very specific innovation/technology/product* (alloy X)! The team now has "focused in" on an on a *particular use/application* (components Y and Z for R-type model commercial jet engines). Yay team!

The team still needs an *example* that will help them *show/clarify* how the alloy, when used for/with these components, "works." The team continues their research towards finding/articulating an example--a very particular make/model of jet its engine used in particular circumstances--that *demonstrates* the alloy components "in action" in typical, relevant circumstances. The team locates information on the Boeing G; the alloy X components Y & Z are being used in Boeing G commercial jet engines. The **example helps the team begin to understand *the impact and value of alloy X as used for components Y and Z in R-type/model commercial jet engines****.* The team now has all the required components of the Preliminary Proposal (from p.1):

* + a ***specific innovation/technology/product***
  + an ***application/use*** for that specific innovation/technology/product
  + an***example***of that application that helps clarify/support
  + ***evaluations*** of that specific innovation/technology/product (how, why, and to whom is the innovation/technology/product important?)

The team does a first Preliminary Proposal draft:

Draft 1

Jet aircraft have recently begun using alloy X coatings for Y and Z components. This alloy coating has addressed several engine problems and will prove to be valuable for economic and environmental reasons in the future.

This is a good start, but it is only 36 words! That's a sure sign that further specificity is needed.

Draft 2

Thermal fatigue is a significant issue in jet engine use and maintenance. To maintain engine viability, engine components must be able to operate well in high-temperature conditions. Heat-resistant alloys for engine components have become important. Alloy X has been shown to be useful for coatings on components such as Y and Z. Reducing thermal fatigue for components Y and Z in the engines of widely used commercial jets is important to the economic and environmental sustainability of air travel.

This draft is better but is still only 79 words. The team knows they need to be more specific. They turn to their research and notes for useful information; they try explaining the connections among the various kinds of information; they make sure *every* sentence is clear and is well-connected to its fellow sentences.

Draft 3

Thermal fatigue is a significant issue in jet engine use and maintenance. In-flight temperatures within the engine of a commercial jetliner can reach QQQQ degrees. To maintain engine safety and efficiency, engine components must be able to operate, reliably and economically, for years of use within these high-temperature conditions. To address the challenge of reliable engine components in frequent high-temperature conditions, engineers are continuing to develop heat-resistant alloys for the fabrication and coating of particular commercial jet engine components. In this paper, we will describe and evaluate an innovative alloy, alloy x, that is proving to be particularly valuable for engine components Y and Z. Components Y and Z, because of their placement and operation within a commercial jet engine, are particularly prone to thermal fatigue. Using the example of Boeing's G aircraft, we will show how alloy x, by minimizing thermal fatigue and maximizing engine efficiency is important to the economic and the environmental sustainability of commercial air travel.

160 words! The team has added useful, well-integrated specifics! The team has clarified connections among thermal fatigue; alloy X; components Y and Z in R-type/model commercial aircraft; the example of Boeing's G; and the value of the alloy components. The Preliminary Proposal is *almost* ready for submission!

**The team now needs to correctly format their Preliminary Proposal**, including giving their FYEC paper a **"working title"** (the title can change over time) and including the **Sources Consulted Section**. With great sadness, the team remembers losing points for incorrect formatting last semester, so they are *extremely* careful to format *everything* correctly. They are relieved to see that the formatting for this first assignment is quite straightforward:

**Format Requirements for Assignment 1, FYEC Preliminary Paper Proposal**

1-inch margins top and bottom

0.7-inch margins left and right

All text in 12 point Times New Roman or Cambria

Single spacing (1.0 **not** 1.15 or 1.25)

All text full justified

There is no header or footer for the Preliminary Proposal

The **TITLE Is 12 POINT BOLD ALL CAPS**

Be sure to include (as shown below) your names, your emails, your 0012 section, the engineering field or fields in which your paper would logically be placed, and the words Preliminary Proposal

Be sure to indent the proposal text (tab 0.3)

Be sure to include a **Sources** section

Scroll down for a "template"

↓

**TITLE IN 12 POINT BOLD ALL CAPS**

space

First Name Last Name email, First Name Last Name email, First Name Last Name email

ENGR 0012 Section, for example, Sanchez 3:00

space

Engineering field or fields, for example Chemical Engineering, Mechanical Engineering

space

Preliminary Proposal (just type in those words Preliminary Proposal)

space

Indent/tab 0.3 type in your full Preliminary Proposal (12 pt Times New Roman or Cambria; 1.0 spacing; full justified)

space (after your full preliminary proposal)

**Sources Consulted (heading in 12 pt, bold);** minimum of 5 sources;include sources which were directly useful for your current Preliminary Proposal. Do not include every source you looked at from the very start of your brainstorming/research, unless you have used all of those sources to write your preliminary proposal. Sources must be listed in alphabetical order, using the author's *last* name. If the source does not show an author, use the first word of the source title to determine alphabetical placement. Format source information within your Sources Consulted section as you did last semester; the basic format is:

**Sources Consulted**

space

Author First Initial. Author Last name. "Title of Article." Title of Publication. Date of publication month.day.year. Accessed month/day/year. URL. p.

Author First Initial. Author Last name. "Title of Article." Title of Publication. Date of publication month.day.year. Accessed month/day/year. URL. p.

Consult "How to Present Source Information 2019/2194" for further details/examples.