

## Facility Design Project for INDU 421

- **Purpose:**
  - Design project allows you to apply the material you learnt in the class in a real facility planning project.
- **Objective:**
  - The objective is to **design a plant layout for the production of some marketable product**
  - The selection of the product:
    - Your product should involve an assembly of several parts (max 10 components).
    - You are free to choose your product, but my approval is required. You can contact me by e-mail to discuss your product or you can directly submit your suggestion for the product in your project proposal.
    - Some of the examples of the products from the last years' projects: tennis racquet, hockey stick, dart, toy airplane, chair.
- **Teams:**
  - This is a team work. Groups of 4-5 students should be established soon
- **Project proposal:**
  - This project should be addressed during the whole semester. You cannot complete such project during the last week. Start working on it as soon as possible. Project proposal should define your project early in the semester so that you can start working on the project soon.
  - Project proposal is a document of max 1 page including:
    - the names of the members of your group
    - the proposed product
    - a brief description of your project (one paragraph is sufficient)
  - Project proposal is due on **September 20, 2013** in the class
  - Hard copy of your project proposal is required
- **Scope of your project:**

The project requires more than the design of a plant layout! Other issues which **MUST** be addressed are listed below:

  - **Market analysis:**
    - Justify the production of your product
  - **Product, process and schedule design**
    - **Include at least one document related to process design**
  - **Vendors and suppliers selection**
    - Suppliers are the ones supplying you with raw material and/or parts: While most of the parts will be produced in-house, some parts need to be purchased from outside vendors. You have to include both in-house produced and outsourced parts.

- Vendors are the ones who will be selling your product to the end customers. This means that you have to define your retailers (or wholesales).
  - **Equipment and personnel requirements**
  - **Location selection**
    - You must use at least one facility location method
  - **Plant layouts designs**
    - Include From-To Chart and/or Relationship Chart
    - You need to produce several designs
    - At least one design should be produced by FactoryCAD
    - Selection of the best design
    - Draw the final design with FactoryCAD
  - **Materials handling**
  - **Life cycle analysis of both product and facility:**
    - What will happen to the product and to the facility in the long run?
- **Presentation:**
  - Your team will present the project in the last week of the course.
  - Everybody has to be present during the presentation and everybody has to participate (speak). Each team member should be ready to answer any question related to the project
  - Your presentation should take around 10-15 min (this will be specified later when the number of presenting teams is known). Longer presentations than the maximum length will be penalized.
  - PowerPoint presentations of your teams (electronic copy) should be sent to me at least 24 hours before your presentation
- **Reports:**
  - Report describing your work in detail should be submitted at the time of the presentation of your team.
  - Hard copy of your report is required
  - The project reports should include the originality form which can be obtained from:  
<http://www.encs.concordia.ca/scs/Forms/labform3.pdf>