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To:	Colleagues in Chemical Engineering 4N04
cc:	Alicia Pascall, Yasser Ghobara
Date:	24 October 2012
From:	Kevin Dunn
Subject:	**More details on the self-directed learning project**

Self-directed learning / Life-long learning

Since technology changes continually, engineering professionals engage in life-long learning. This activity involves identifying subjects about which you want to learn, setting goals, and checking your achievements. In Chemical Engineering 4N4 we will refer to this activity as Self-Directed Learning (SDL).

Let's recognize this project is not entirely "self-directed" since the instructor and TAs are providing direction. However, the project will help you build key learning and project management skills for engineering practice.

In this course we will build SDL skills while learning about process design (extending 3G4), and extending it to 4 topics taught in 4N4:

1. economics and costing,
2. process safety,
3. operability analysis, and
4. the troubleshooting topic.

The project will have two deliverables: (a) your group will be required to report on these topics, and (b) present your project to the class. **Please re-read the SDL memo of 24 September**, for what the report contents are to look like (note that sections 4, 5, 6 and 7 correspond to the 4 topics above). More details on the presentation are provided below.

Reduction in scope

Due to the limited time remaining in the semester, and delays in confirming project selection with some groups, we have decided to make section 7 of the report, the troubleshooting topic optional. However, if this section is covered appropriately, your group will be credited with bonus grades.

Furthermore, section 6 of the report on HAZOP studies will be reduced to only consider one major unit operation in the process flowsheet.

Project area selection

The project area was selected at the end of September. During this period we have covered the economics and safety parts of the course. In the coming weeks we will cover the remaining two topics: operability and troubleshooting. You should be connecting the class material to your project area.

Meetings with your managers

In the coming week you will be meeting with either Alicia Pascall (groups A) or myself (groups B), the "managers". It is your group's responsibility to arrange a meeting time slot, not exceeding 45 minutes in duration. Book these meetings between 30 October and 02 November.

The meeting must have a written agenda, distributed ahead of time, be well-organized and chaired appropriately (guidance is provided in tab 2 of the course pack). The purpose of the meeting is:

1. To clarify the scope of your project; the managers will provide feedback on the scope reducing or expanding it to a reasonable size. For example, a distillation column is too small, while a chemical refinery is too large in scope.
2. Demonstrate your plan for meeting the time deadlines, how you will meet the SDL deliverables and the planned division of work among the group.
3. Obtain answers to questions related to the SDL deliverables.

An optional follow-up meeting may be booked with your manager during the week of 05 November to 16 November if you require further guidance. These meeting(s) will be graded; more details below.

Presentations to the class

Your group will present one of the 4 topics covered in the report to the class; you may choose to also cover two smaller topics if time permits. Your presentation should give a very short introduction to the process (2 minutes maximum) and then spend the remaining 13 minutes covering the topic(s), workshops and question/answer period.

The presentation must also include 5 minutes of class activities. These activities can take the form of workshops, or small problems to solve, but please be creative and use other alternatives. You might think that you are able to do this "on the fly" when teaching, but these aspects require though and preparation. Three groups will present per day; timing at the start of class and each presentation will be strictly enforced. All group members must participate equally in the presentation, which is very hard to coordinate correctly. Please practice ahead of time.

The materials that your group presents to the class *must be in PDF format*. These are to be emailed to the instructor by noon of the day prior to your group's presentation. If you use Powerpoint to create your presentations, use the "Save As" menu to obtain a PDF. View that PDF in "full screen mode" to ensure your presentation appears as you intend. All presentations will be presented from the instructor's computer, which is guaranteed to work with the class projector. Due to time and technology limitations, groups will not be able to use their own computers for presentations, which is why a PDF is required.

These PDF slides will also be made available on the course website for your colleagues to download, print and bring to class the next day. You may also provide additional background material, such as a detailed PID drawing, more information about the process, and/or references for further study. This will also be posted to the course website on the day prior to your presentation.

Presentation dates were randomly assigned:

Presentation date	Groups
20 November	B1, A2, B7
22 November	B5, B4, A4
23 November	A5, B10, B9
27 November	A3, A7, A9
29 November	B8, B2, B3
30 November	B6, A8, A6
03 December	A1, Final exam review
03 December	Reports must be handed in by 16:30; no exceptions.

Grading

The grading is based on 3 components, as described in the course outline:

Weight	Description
15	Meeting(s) with manager [*was previously weighted as 20; reduced due to short time to prepare*]
35	Class presentation: technical content, answering questions, presentation material quality, organization of time, timekeeping [*was previously weighted as 30*]
70	Project report

We recognize that some groups have more time to prepare their presentations than others. We will take this into account, however it is a minor issue: early groups can prepare the one topic to present, but then have the remaining time to work on the remaining topics for their written report. Groups presenting later have to multitask on both the presentation and report.

Hints

- The topics chosen to present to the class should be the topic(s) your group found most interesting and challenging. Bear in mind the class has heard enough about process economics from the instructor, so unless there are some unusual aspects to the process economics in your project area, you should rather focus on the other 3 topics.
- Groups should work closely with their manager to ensure technical correctness. This interaction can start from today onwards, but it is not suitable to expect this just prior to the presentation or report hand-in.
- The purpose of the presentations is to teach the class, it is not to be run as a game. You are expected to be innovative with your approach, but the emphasis is on learning. Groups will incur a large penalty for inappropriate class materials.

Sincerely,

Kevin Dunn