

# Guidance & Deliverables for Final Design Oral Report

17 May 2017 from 0730-1045 in BH331

•This guidance is for the Oral Report only. Your oral presentations will be 45 minutes in length. During that time, I will expect to see you demonstrate (open and run) your final CHEMCAD simulations (Salt Plant, Nylon Plant). This will take some time. Make sure you allow for this in your planning.

PowerPoint slides are limited to the following, not in any prescribed order:

- Process Chemistry – Required, 2 slides, including any fade-ins and animations; in the first slide, show the ion chemistry in the salt plant. In the second, show the nylon formation mechanism and kinetics.
- Economics – Required, 3 slides; include calculation of WC, FCI, and TCI for the two processes with a details of how these were calculated. You are required to show a list of equipment for each process that includes the name, number, capacity, and cost. Show your cash flow diagram, along with ROI, NPW, and DCFR for your combined plant.
- Details of Reactor Design – Required, 1 slide per reactor (or mixer); include an engineering drawing showing reactor (or mixer) configuration in the salt plant and in the nylon plant. Include details such as temperature control, catalyst configuration (if used), safety equipment, number and configuration of reactors if more than one are used.
- Details of Separator Design – Required, 1 slide per separator; include an engineering drawing (PFD) showing the configuration of individual separators in the plant and location of *critical* temperature and pressure control points. Show or describe all recycle streams. Indicate number of trays, tray type, tray diameter, reboiler cost, condenser cost, and column cost for each column.
- Safety and environmental analysis – Required, 1 slide.
- Utilities and utility costs – Required, 1 slide. Show a detailed list of all utilities used as well as a short descriptive phrase for each.
- Controls – Required, 2 slides; locate primary analyzers and control valves in process diagrams for the salt plant and for the nylon plant.
- You are also required to show 1 slide for your title page, 1 slide for premise and assumptions, 1 slide for conclusions and recommendations, and 1 slide for references. Because of time constraints, please do not show an agenda.

Slide limits will be strictly enforced. You graded on oral and written communication