

Sample Work Plan

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Purdue University – Professional Practice Programs

Co-Op Program – Postings

Below is a sample work plan for Chemical Engineering Co-Op students. This will need to be modified for your specific company/industry/discipline. Please contact our office should you have any questions.

Work Session 1: Technical & QC Laboratory

- The aim of this session is familiarity with the raw materials, products made, basic quality testing and the role of the lab within the business.
- Introduction to people, site tour, policies and safety standards. Discussion of coop's projects, which include large and small plus support activities, based on business needs. This is covered in the first week with a handover from the previous coop student.
- Learn about the raw materials, in process and finished products by participating in projects and activities mainly in analytical development and the QC Lab, but including production or tech service support with a chemist and mentor. Short reports are prepared on the work done.
- Learn about analytical equipment, test variables, process control parameters and good laboratory practices through hands-on experience.
- Understand the meaning of Statistic Quality Control by preparing reports for customers based on product analytical data and look at the trends.
- Learn about good laboratory safety practices (by safety audits and giving a safety presentation)

Work Session 2: Technical and Technical Service Laboratory

- The aim of this session is to build on the experiences to date, work more independently and build a bridge to the next session in chemical engineering, by some joint project work between the lab and the chemical engineers.
- Re introduction to lab safety requirements and policies. Review coop's project list and get handover from previous coop student. All done in first week.
- Assist the Process Chemist in conducting lab experiments that mimic process conditions that can lead to improved process efficiencies or economics. This is done with the chemical engineers and more time out on the plant. Again a lab mentor is appointed to help and supervise the coops student. A report on work is required.
- Assist Technical Service in giving support to Sales and Marketing by evaluating our products in tests that simulate customer use or by comparing our product to competitor's products. A presentation may be done.
- There will also be some small project activity along the lines of the first session covering SQC, monthly statistics for the group, safety auditing and a safety presentation.

Work Session 3: Process Department

- The aim of this session is to become familiar with the various unit operations on the plant and to tie this in where possible with the chemical engineering work done so far, and will involve contact with production and maintenance.
- Assist one of the chemical engineers to do basic mass and energy balances around equipment and processes. The chemical engineer mentors the coop student.
- Assist the chemical engineer's projects by data collection, data analysis, and some front-end engineering work. Become familiar with different types of control instruments e.g. level and temperature measurements as part of the work done.
- Get to understand the plant by being involved in troubleshooting with the chemical engineer. This will involve getting to know Aspen and Delta V which are process information and control systems.

Work Session 4: Production Department

- The aim of this session is to assist the Production Manager and the Assistant Production Planner in special assignments. These might cover the following.
- Plant Production.
- Production Scheduling.
- Updating/optimizing production manuals.
- Using process computer to conduct trend analysis, optimize process routes and process conditions, analyze plant yields and give updated data to plant cost accounting.

Work Session 5: Work Programs customized to meet Co-op student's areas of interest and Company needs. Examples are given:-

Marketing and Sales Department

- Assist Product Managers in researching new application areas, ways the products could be applied and quantifying/identifying sales potential through analyzing available literature and sales call reports.
- Assist Product Managers in identifying and quantifying changes in the market due to new technologies or new legislation e.g. the Biodiesel market growth.
- Assist Product managers in benchmarking our products against those of the competition. This will be done with Laboratory involvement.
- Assist Customer Service Department in analyzing customer buying patterns and documenting special purchase requirements.

SSHE Department

- Assist Safety/Environmental Engineer in:
- Updating safety training and contingency or evaluation procedures
- Help conduct safety inspections and audits and apply learning

More Senior Assignments in Process/Production Departments