



PARTNERS ACADEMIC SUMMER SCHOOL 2025

Syllabus for Chemical Engineering

Subject Area

This syllabus is for PARTNERS applicants seeking to progress to the degrees of:

- H810 BEng Hons Chemical Engineering
 - H813 MEng Hons Chemical Engineering
 - H815 MEng Hons Chemical Engineering with Year in Industry
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Aims

To allow students to demonstrate their potential to succeed in specified degree programmes by showing a grasp of entry-level subject-specific knowledge, understanding, cognitive and subject-specific skills.

Learning Outcomes

A good knowledge and understanding of ...

- The block flow diagram (BFD) for a chemical engineering process.
- Converting a word description of the chemical process into a simple Block Flow Diagram (BFD)
- Formulating and solving basic mass balance for unit operation and the whole processes based on BFD
- Use professional flow-sheeting software (HYSYS) to solve mass balance for simple process,

The ability to apply this knowledge and critical understanding to...

- Reading BFD and using it to solve mass balances for units and the whole process involving recycles
- Create simple HYSYS simulation for the process

Competence in...

- The appreciation of how chemical engineering unit operations fit together to form a process
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Summer School Syllabus

Chemical Engineering 1: Intro & chem eng diagrams: Lecture to learn to read and create block flow diagram (BFD)

Chemical Engineering 2: chem eng basic calculations - Lecture to introduce mass balances including recycle Chemical Engineering Quiz - tutorial to solve mass balances for chemical process

Chemical Engineering 1: Computing labs - Practical to introduce HYSYS basics

Chemical Engineering 2: Computing labs - Practical to create HYSYS simulation for simple process

Activities for Personal Study

Canvas quizzes

On-Campus Teaching:

Wednesday 2nd (PM only) Thursday 3rd & Friday 4th July

Online Teaching:

Monday 30th June, Tuesday 1st July

Formative Assessment Details

Online quizzes and submission of file during session

More details will be given during the event by your Academic Strand Lead.

Hand-in Method

Digital

Assessment deadline

Friday 11th July