



## **PARTNERS ACADEMIC SUMMER SCHOOL 2026**

### **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.

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#### **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
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## Activities for Personal Study

Students will be provided with reading and post-Class activities to complete during the Summer School. Reading will be provided via the Library Reading List feature within Canvas; exercise will be posted on Canvas before the Summer School commences.

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## On-Campus Teaching:

Wednesday 1<sup>st</sup> (PM), Thursday 2<sup>nd</sup> & Friday 3<sup>rd</sup> July

## Online Teaching:

Monday 29<sup>th</sup> & Tuesday 30<sup>th</sup> June

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## Formative Assessment Details

A series of online quizzes and a file submission  
More details will be given during the event by your Academic Strand Lead.

## Hand-in Method

Digital

## Assessment deadline

Friday 10<sup>th</sup> July