



Process Plant Design part of a 2 year Post Graduate Program

Master of Technology Design
Post MSc course, >250 graduated in Twente since start in 1989

2nd yr: Design or Development assignment

1st yr: **Process Plant Design** + 6 courses

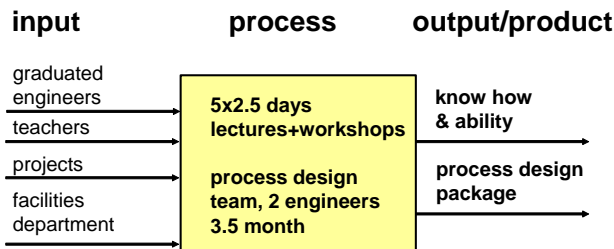


Master of Science Chemical Engineering, NL/abroad

Engineers need to respond to conventional & new challenges: competition + business, reduction of energy and costs, ecology, sustainability, social factors

➡ **Education needs a broad look, technology + new tools to prepare students for their jobs**

our education is also a process



➡ **master basics+application+creativity, design industry relevant process**

Course profile

Conceptual design / process synthesis,
Project phasing & organization, flowsheets
Apply to project case HDA, ->Flowsheet

HDA

Process simulation, workshops
Separation, new techniques + basics

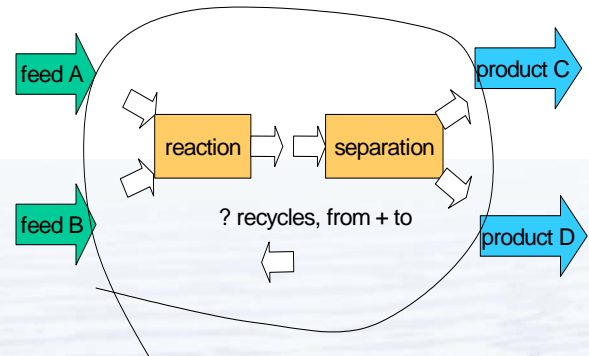
case

heat integration + recap basics,
heat exchangers, types, selection,

Process safety, from properties of components,
F&EI, to accidents analysis

P&ID's, Safeguarding, Economics, new developments e.g. Process Intensification TEST

From synthesis steps to operations, all process attributes have to contribute



➡ **Task or functional approach creates new opportunities to meet future demands**

Process design assignment

- Per team of 2 students, 12 new cases/yr, 2-3 from industry, 2-3 originating from research groups in CE lab
- Deliverable is a basic design – concept, M&E balances, UO sizing, control, HSE, economics
- Team to take lead, monthly review meetings
- Project+organisation, new technology search, integration of disciplines, use of tools, reporting

➡ **Cooperation, integration, “project” challenge**

Conclusion Process Plant Design

- a learning experience for teams; for assignment + rest of 2 yr curriculum
- 150 different designs completed in 15 years
- proven valuable in industry and jobs
- several designs published or presented at conferences
- continuous effort needed to implement new tools and technologies, to do the right things right:
- Academics: focus on need of industry and society, sell fundamentals + technology + tool
- Industry: transfer to new technology + accept new process synthesis for future challenges

University process design + Industries we need to cooperate in an inventive way