

Pair Work: Exam Question with AI-Based Peer Feedback

Task for students: Each of you formulates one open-ended exam question related to the topic of distillation (see learning objectives), which will then be answered by your partner.

A good open-ended exam question should:

- assess a learning objective,
- require analysis or application,
- be clear but not trivial.

Example guidance:

Use formulations such as “*How does ... influence ...?*”, “*Explain using ...*”, or “*Analyse ...*” instead of “*What is ...?*”.

Afterwards, generate feedback on the written response(s) to your question using an LLM/chatbot (e.g. ChatGPT, Academic AI, etc.).

You may photograph handwritten responses and provide the image to the LLM/chatbot. Please ensure that no personal information (e.g. names) is visible in the submission.

The feedback should be based on the following considerations:

1. What is the learning objective of the question?
2. Has it been achieved?
3. What aspects were done well?
4. What aspects should be further developed or deepened?

Next, critically evaluate the feedback provided by the LLM/chatbot and reflect on the extent to which it aligns with your own assessment.

Finally, reflect together as a pair on:

- the two types of feedback (AI-generated and human-generated), and
- your current level of understanding.

Learning Objectives

Learners are able to:

- apply the principle of distillation to a simple mixture,
- derive relevant thermodynamic information (boiling line, condensation line, x–y relationships) from boiling point and equilibrium diagrams,
- explain the influence of the feed condition on the position and slope of the q-line,
- explain how operating mode, reflux, and number of stages affect the shape and significance of the operating lines.