

Course description: “FBM Industrial Practice - ____”

The FBM Industrial Practice aims to provide on-site experiences related to FBM in an industrial environment, to prepare the students for future careers in the FBM industry. It is intended to be carried out as an internship at a hosting company, but industrially relevant projects in DTU facilities (e.g. DTU Fermentation Core, or Pilot-plant) are also possible.

The duration of the stay at the industrial host differs, depending on the weekly hours spent there. An Industrial Practice stay for 10 ECTS requires around 280 hours of commitment in total, where at least 225 hours are supposed to be spent on-site, and the rest devoted to writing the report.

The FBM industrial practice should provide insights into bioproduction or related areas, like e.g. in R&D or downstream processing. During the internship, the student should get acquainted with, e.g. relevant equipment, techniques, and procedures. By taking part in the daily FBM activities of the hosting facility, the students will get acquainted with an industrial work environment and learn e.g. how to deal with hygiene, good manufacturing practice (GMP), and other regulations in the FBM industry.

The on-site experience of the FBM Industrial Practice is complemented by a final report, where the students are supposed to reflect on the host facility and the internship experience.

Learning objectives

A student who has met the objectives of the industry practice course will be able to:

Part 1: Description of the host facility

- Describe and analyze the main output from the host facility (products or services), how it benefits the end-user, and how it differs from the closest competitors
- Construct a process diagram visualizing the processes leading to the output, e.g., analysis of production facilities, R&D processes, or test facilities
- Describe the organizational structure of the host facility, using an organogram
- Discuss how cross-disciplinary competences between biotechnology and process engineering are or could be beneficial in the host facility
- Reflect on the innovation strategy of the host facility
- Reflect on how sustainability and UN sustainability goals are implemented at host facility

Part 2: On-site experience in host facility

- Describe and reflect on your on-site experience at the host facility
- Reflect on processes that were experienced on-site and which could benefit from optimization
- Discuss challenges/bottlenecks and optimization approaches for a selected process
- Adapt to the industrial environment at the host facility
- Reflect on regulatory constraints at the host facility

Part 3: Complementary challenge to on-site tasks

- Identify and argue for the choice of an interesting task from the on-site experience that could benefit from a specific theoretical analysis
- Perform a theoretical analysis of a task, including references to published primary literature relating to the interplay between either academic (scientific) and industrial viewpoints, or between cell factory design, fermentation process, and downstream process.

Examples of types of complementary challenges can be found in the Report Template.

Assessment

The learning objectives are assessed in the final report, which will be evaluated by the DTU supervisor and discussed in an online examination with the student.