Process Optimization

<table>
<thead>
<tr>
<th>Rota</th>
<th>Duration</th>
<th>Semester</th>
<th>SWS</th>
<th>Credit Points</th>
<th>Workload</th>
</tr>
</thead>
<tbody>
<tr>
<td>annually SS</td>
<td>1 Term</td>
<td>2nd (Semester)</td>
<td>3 SWS</td>
<td>4</td>
<td>120 h</td>
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</tbody>
</table>

1 Modul Structure

<table>
<thead>
<tr>
<th>Course (Abbreviation)</th>
<th>Type/ SWS</th>
<th>Presence</th>
<th>Self Study</th>
<th>Credit Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Process Optimization (PO)</td>
<td>Lecture/ 1 SWS</td>
<td>15 h</td>
<td>45 h</td>
<td>2</td>
</tr>
<tr>
<td>b) Process Optimization (PO)</td>
<td>Tutorial/ 1 SWS</td>
<td>15 h</td>
<td>15 h</td>
<td>1</td>
</tr>
<tr>
<td>c) Process Optimization (PO)</td>
<td>Lab / 1 SWS</td>
<td>15 h</td>
<td>15h</td>
<td>1</td>
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2 Language

English

3 Content

The course gives an overview of state-of-the-art process optimization techniques and of their application. The following topics are dealt with:

- Scalar and multivariable optimization
- Linear and nonlinear programming, direct and indirect methods
- Constrained Optimization
- Evolutionary Algorithms
- Nonlinear Programming with Equality and Inequality Constraints

The course takes place in the second half of the semester.

4 Competencies

The students acquire an in-depth knowledge of methods and technologies for the improvement of chemical and biochemical production processes by optimization. The students acquire a comprehensive overview of the industrial practice in this area.

5 Examination Requirements

The final exam will be an oral (20 minutes) or written (1.5 hours) exam, depending on the number of participants (form will be announced in the second week of the course). In addition, the lab must be passed.

6 Formality of Examination

☒ Module Finals
☐ Accumulated Grade

7 Module Requirements (Prerequisites)

This module is mutually exclusive with the module “Process Performance Optimization”. By receiving credit points for the module “Process Optimization” you cannot receive credit points the module “Process Performance Optimization”.

8 Allocation to Curriculum:


9 Responsibility/ Lecturer

Prof. Dr. S. Engell/ Prof. Dr. S. Engell