### Courses in English

#### Course Description

<table>
<thead>
<tr>
<th><strong>Department</strong></th>
<th>05 Building Services Engineering, Paper and Packaging Technology and Print and Media Technology</th>
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<tbody>
<tr>
<td><strong>Course title</strong></td>
<td>Plant Engineering</td>
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<tr>
<td><strong>Hours per week (SWS)</strong></td>
<td>4</td>
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<tr>
<td><strong>Number of ECTS credits</strong></td>
<td>5</td>
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#### Course objective

The overall objective of this course is to develop in the student an ability to design the elements necessary for the construction of industrial processing plants. This includes:
- Overview over the elements necessary for the construction of industrial plants
- Strength analysis in pressure vessel and pipe walls
- Wall thickness calculations
- Design of piping systems
- Fluid dynamical calculations in pipes

Theoretical derivations & explanations are completed by calculation of numerous practical examples.

#### Prerequisites

Dynamics, Fluid Dynamics, Thermodynamics

#### Recommended reading

Grundlagen der Rohrleitungs- und Apparate-technik, 3nd edition, Vulkan-Verlag, 2009, by Rolf Herz

#### Teaching methods

lecture and examples

#### Assessment methods

90 min. Final Exam

#### Language of instruction

English

#### Name of lecturer

Prof. Dr. Rolf Herz

#### Email

herz@hm.edu

#### Course content

1. Elements of Piping Systems (ca. 2 hours)
2. Drawing (ca. 2 hours)
3. Loads on Walls of Pressure Vessels (ca. 6 hours)
4. Wall Thickness Calculation of Pressure Vessels (ca. 12 hours)
5. Support and Expansion Compensation of Pipelines (ca. 12 hours)
6. Stress Analysis of Pipes (ca. 6 hours)
7. Fluid Dynamics in Pipelines (ca. 12 hours)
8. Plant Examples (ca. 8 hours)

#### Remarks

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