

Equipment Technology

winter semester

- ▶ lecture: 2 SWS, We 15:00 - 17:00 o'clock, B02-111, JProf. Dr.-Ing. Fabian Herz
- ▶ exercise: 2 SWS, each even cw, Mo 15:00 - 17:00 o'clock, B10-111, JProf. Dr.-Ing. Fabian Herz
- ▶ tutorial: according to the arrangement, Fr 15:00 - 18:00 o'clock, B10-337, Jakob Seidenbecher

Bachelor's and Master's degree program

Equipment Technology

Students should become acquainted with important equipment for the realization of technological processes and their function and structural calculation bases. Using the example of a constructive design for an exemplarily selected device, the specific process design and device design should be understood and practiced as a unit.

1. Introduction (tasks of the Device Engineering , Descriptive equations of a process unit , calculation of processes and device, driving force processes , key aspects of equipment design)
2. Equipment strength and security (basics , cylindrical shells and pipes , level floors, vaulted bottoms , more floors , more equipment items)
3. Heat transfer equipment (heat transfer by conduction , heat transfer between the fluid and wall , heat transfer by radiation , heat transfer through wall equipments, various flow guides in heat exchangers , temperature variation in heat exchangers , types of heat exchangers)
4. Mass transfer devices (definition and application areas , names and basic laws , Thermal equilibria between different phases Continuous batch distillation , multi-stage processes / rectification , floor fixtures in columns , mass transfer elements , Direct calculation apparatus of columns , Constructive Details of columns)
5. Equipment for drying solid materials (types of drying , Apparative solutions for drying)
6. Equipment for the mechanical separation of disperse systems (filtration equipment , centrifuges)
7. Equipment for the mechanical unification of different phases (foundations , calculation and design of apparatus and agitators mixers)
8. Pipes and fittings (pipe diameter , flow through pipes , calculating the pressure drop through pipes , Instrumental execution of piping and valves)
9. Pumps and fans (operating principle , efficiency , constructive versions)

Lectures, exercises , term paper (constructive design)

2nd semester done

- ▶ Attendance: 44 hours

Self-study and preparation of structural design : 108 hours



Term paper , exam 120min , 5 CP

JProf. Dr.-Ing. F. Herz

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