Zusätzliches Wahlpflichtfach für EGT ab dem 4. Semester
in Englisch
im Block nach den Prüfungen im SS 2017

Umfang: 7 Tage mit je 4 x 45min (=28 Kontaktstunden, 2SWS, 2 ECP) + Prüfung
Titel: Indoor Air Quality Assessment & Control (in English)
Gastprofessor: Prof. Dr. Valdemar J. Rodrigues
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Inhalte:

1. Indoor air quality (IAQ): determinants, pollutants and health effects
   1.1. Combustion processes
   1.2. Tobacco smoke
   1.3. Building materials (old and new ones)
   1.4. Electrical equipment & HVAC
   1.5. Plumbing
   1.6. Soil and rocks (Radon)
   1.7. Building-retained illnesses (BRI)
   1.8. Legionellosis outbreaks and indoor exposure to water aerosols
   1.9. Norms and EU regulations for public buildings
2. Indoor air quality: assessment and monitoring
   2.1. Assessment techniques for physical, chemical and biological air contaminants
   2.2. Monitoring systems
   2.3. Measuring equipment
   2.4. Assessment of individual exposure to indoor air pollution (IAP)
   2.5. Epidemiology of IAP. Monitoring of risk groups
3. Indoor air pollution prevention and control
   3.1. Environmental pre-assessment of construction sites and facilities
   3.2. Integration of energy efficiency (EE) and IAQ in building design
   3.3. HVAC systems design, operation and maintenance
      3.3.1. HVAC systems auditing and inspection planning
      3.3.2. Maintenance, upgrade and repair of HVAC systems components
   3.4. Managing trade-offs between IAQ and EE in buildings.
4. IAQ modelling
   4.1. Modelling constants and variables
   4.2. Psychrometric charts and calculations
   4.3. Air flux in confined spaces
   4.4. Transient and steady-state solutions of mass-balance equation
   4.5. Application exercises
5. Ongoing R&D and future prospects for IAQ assessment and control