

Westfälische Hochschule: Lectures for English and American Engineering Students

21.02.12

Name	Semester	Faculty	ECTS	Lecturer	Study Programme	Content	Comment
Renewable Energy	Winter	FB1/FB2	4 - 8	(4 Kohake courses)	Master Energy Systems	Renewable energy sources: water, wind, biomass, solar energy, residual waste. Preserving and environment-friendly energy economics: Methods of rational energy usage, ecology, transportation, distribution and storage of energy, efficiency management. Power engineering lab: Heating and cooling with chillers, polygeneration, fuel cells, solar heat and photo voltaic	German lectures with English Supplement
Photovoltaics	Summer	FB1/FB2	7	Kohake	Master Energy Systems	Areas of application, functional principles. Solar cells: theory, strategies for the increase of cell efficiency. Photovoltaic systems: function and circuit technology of inverters, energy storage. Monitoring and control devices, simulation software for solar power systems	German lectures with English Supplement and English lecture notes
Finite Element Method	Summer	FB2	4	Mecking	Mechanical Engineering	Principle of virtual work, Castigliano's theorem, Ritz method, Finite Element method	German lectures with English Supplement
Software Engineering	Summer	FB5	6	Znotka	Master Computer Science	Architecture and component design, design patterns, architecture for large systems, MDA, SOA	English lectures
Interactive Systems	Summer	FB5	6	Heineke	Master Computer Science	Software ergonomics, GUI design, accessibility, localization, corporate design	English lectures
Software Development Project	Summer	FB5	12	Znotka	Master Computer Science	Architecture and component design, design patterns, architecture for large systems, MDA, SOA	English project (teamwork)
Software Engineering	Summer	FB2	4	Fröhling	Mechanical Engineering	Software requirements, models and phases of software engineering, UML, CASE tools, object-oriented design	German lectures with English Supplement
Operating Systems and Microcontrollers	Summer	FB2	4	Fröhling	Mechanical Engineering	Architectures, resource management, communications, programming of embedded microprocessors and microcontrollers	German lectures with English Supplement
Pulsed Power Technology	Winter	FB1	10	Löffler	Master Energy Systems	Physical background: Electrical breakdown in gases, dielectrics and semiconductors - electrical current switching from superconducting to resistive state in superconductors - optical breakdown in gases and phase transitions in semiconductors and superconductors - pulsed pressure induced electronic phase transitions in semiconductors, dielectrics, ferroelectrics and ferromagnetics. Measurements in pulse-power electronics: High pulse electric current and voltage measurement - strong pulsed magnetic field measurement - high power UWB and MW pulse measurement	English and German lectures
Mechatronics	Summer	FB2	4	Dunker/Fröhling	Mechanical Engineering	Introduction into mechatronics, digital feedback control, stability of dynamic systems, types of electric drives, optimization of a self-balanced scooter	German lectures with English Supplement