1.4 Advanced Chemistry

Advanced Chemistry

Module summary
Module code: STM140
Module coordinator: Prof. Dr. Juliane Stölting
Credits (ECTS): 6
Semester: 1
Pre-requisites with regard to content: none
Pre-requisites according to the examination regulations: none
Competencies: After having successfully completed the course the students have knowledge of the working medium of physical and chemical sensors, biosensors.
Assessment: Written exam, 180 minutes
Usability: Sensor system technology

Course: Physical Chemistry
Module code: STM141
Lecturer: Prof. Dr. Juliane Stölting
Contact hours: 4 lecture hours each week
Semester of delivery: yearly in summer semester
Type/mode: lecture including lab exercises and homework
Language of instruction: English
Content: • Spectroscopy • Properties of ideal and real gases • Properties of liquids and solutions • Chemical energetics • Pellistor sensor • 2nd and 3rd law of thermodynamics • Chemical Affinity
Recommended reading: P. Atkins, L. Jones: Chemical Principles, W.H. Freeman and Company, New York, 1998 D.C. Harris: Quantitative Chemical Analysis, W.H. Freeman and Company, New York 1999
Comments:

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Module code: STM142
Lecturer: Prof. Dr. Juliane Stölting
Contact hours: 4 lecture hours each week
Semester of delivery: yearly in summer semester
Type/mode: lecture including lab exercises and homework
Language of instruction: English
Content: • Matter and Properties • Chemical Reactions • Materials, • Type of chemical bonds

• Hydrogen bonding • Bonding of models bands • Acids and bases • Buffer • Redox Reactions • Electrochemistry Polymers
Recommended reading: P. Atkins, L. Jones: Chemical Principles, W.H. Freeman and Company, New York, 1998 D.C. Harris: Quantitative Chemical Analysis, W.H. Freeman and Company, New York 1999
Comments: