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| Module title | | Abbreviation |
| Principles of quantum mechanics and spectroscopy | | o8-PC-QMS-LAGY-o92-mo1 |
| Module coordinator | | Module offered by |
| lecturer of lecture "Grundlagen der Quantenmechanik and Spektroskopie" (Principles of Quantum Mechanics and Spectroscopy) | | Institute of Physical and Theoretical Chemistry |
| ECTS | Method of grading | Only after succ. compl. of module(s) |
| 5 | numerical grade | -- |
| Duration | Module level | Other prerequisites |
| 1 semester | undergraduate | Admission prerequisite to assessment: successful completion of exercises in the respective classes as specified at the beginning of the course (usually 70% of exercises to be successfully completed) as well as regular attendance of exercises (usually a maximum of 2 incidents of unexcused absence). |
| Contents | | |
| This module introduces students to the fundamental principles of quantum mechanics. It analyses molecules on the basis of the following models: particle in a box, harmonic oscillator and rigid rotor. As regards spectroscopy, the module focuses on vibrational spectroscopy, angular momentum quantisation, microwave spectroscopy and UV-VIS spectroscopy. | | |
| Intended learning outcomes | | |
| Students are able to explain key models of quantum mechanics and to apply them to molecules. They are able to describe different spectroscopic methods. | | |
| Courses (type, number of weekly contact hours, language – if other than German) | | |
| V + Ü (no information on SWS (weekly contact hours) and course language available) | | |
| Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) | | |
| a) 1 to 3 written examinations (1 written examination: approx. 90 minutes; 2 written examinations: approx. 60 or 90 minutes each; 3 written examinations: approx. 60 minutes each) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes) Language of assessment: German or English | | |
| Allocation of places | | |
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| Additional information | | |
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| Workload | | |
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| Teaching cycle | | |
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| Referred to in LPO I (examination regulations for teaching-degree programmes) | | |
| § 62 (1) 1. Chemie "Allgemeine und Anorganische Chemie"; "Physikalische und Analytische Chemie" | | |
| Module appears in | | |
| First state examination for the teaching degree Gymnasium Chemistry (2009) | | |
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