C. Specialization area

1. Topic area Analytical Chemistry

<table>
<tr><td colspan="4">Module: Scientific Measurement Data Collection and Processing</td><td></td></tr>
<tr><td colspan="5">University/department/institute: Freie Universität Berlin/Department of Biology, Chemistry and Pharmacy/Institute of Chemistry and Biochemistry</td></tr>
<tr><td colspan="5">Responsible for the module: module lecturers</td></tr>
<tr><td colspan="5">Admission requirements: none</td></tr>
<tr><td colspan="5">Qualification aims: The students know important measurement and working techniques from the field of scientific laboratory practice. They are familiar with the basic methodological and subject-related principles of measurement within scientific parameters. They are competent in evaluating systematic and stochastic errors which may occur. They can use data processing equipment for reducing and further processing experimental data. They are capable of preparing suitably labelled diagrams from measuring data series for publication in scientific journals.</td></tr>
<tr><td colspan="5">Content: Methodological delimitation of laboratory experiments from everyday experience; digital and analogue data collection in laboratory experiments; determining the parameters by the complementary test results; use of specialized software to collect and process data; preparing publishable depictions for scientific journals; principles of scientific error analysis</td></tr>
<tr><td>Teaching and learning units</td><td>Attendance
(Semester hours per week = SH)</td><td>Forms of active participation</td><td colspan="2">Study time
(hours)</td></tr>
<tr><td>Lecture</td><td>2</td><td>-</td><td rowspan="2">Attendance L 30
Preparation and follow-up L 30
Attendance T 30
Preparation and follow-up T 30
Examination preparation, examination 30</td><td></td></tr>
<tr><td>Tutorial</td><td>2</td><td>Solving tasks, discussion, developing data analysis and visualization programs, preparing diagrams</td><td></td></tr>
<tr><td colspan="2">Language of instruction</td><td colspan="3">German or English</td></tr>
<tr><td colspan="2">Compulsory regular attendance</td><td colspan="3">Attendance recommended</td></tr>
<tr><td colspan="2">Study time, total hours</td><td colspan="2">150 hours</td><td>5 CP</td></tr>
<tr><td colspan="2">Duration of module</td><td colspan="3">One semester</td></tr>
<tr><td colspan="2">Module offered</td><td colspan="3">Every semester</td></tr>
<tr><td colspan="2">Application</td><td colspan="3">Master’s program in Chemistry
Bachelor’s program in Chemistry for teaching
60 CP module provision
Bachelor’s program in Biochemistry</td></tr>
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