**Module title:** Computer-based Measurements with LabView

**Field / responsibility of:** Physics / the department, the Dean of Studies

**Module contents:**
- Fundamentals of electronic measurement techniques
- Introduction to the programming language LabView for process control and data acquisition
- Small group projects with exemplary experimental arrangements

**Qualification objectives of the module / competencies to be acquired:**
Learning how to use a computer in the lab, identifying typical problems, e.g. with analog data acquisition. Using the graphical programming language LabView, implementing what has been learned in projects (in small groups).

**Prerequisites for participation:**

a) **Recommended knowledge:**
Good knowledge of any programming language, basic knowledge of electronics

b) **Prerequisite courses:**
None

**Module can be used for:**
M.Sc. (and B.Sc.) in Physics, Nanoscience, Computational Science

**Module is offered:**
On a semiannual basis

**Module can be completed in:**
1 semester

**Recommended semester of study:**
1

**Overall module workload / number of credit points:**

| Workload: | Total number of hours: 180 |
| Allocation: | 1. Attendance: 4 credit hours |
| | 2. Independent study (including exam preparation/ exam): 110 hours |
| Credit points: | 6 |

The successful completion of all assignments listed in items 11 and 12 is a prerequisite for receiving the credit points mentioned in item 10.

**Module components:**

<table>
<thead>
<tr>
<th>Nr.</th>
<th>Req./req. elective</th>
<th>Form of teaching</th>
<th>Subject area/topic</th>
<th>Credit hours</th>
<th>Coursework</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHY-M-VS 1 2.1</td>
<td>Compulsory</td>
<td>Lecture</td>
<td>Computer-based measurements</td>
<td>4</td>
<td>Successful completion of the practical exercises (with the instructor signing off each course session); project work</td>
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<tr>
<td></td>
<td></td>
<td>Practical course</td>
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</tbody>
</table>

**Module exam:**

<table>
<thead>
<tr>
<th>Nr.</th>
<th>Competence / topic</th>
<th>Type of exam</th>
<th>Duration</th>
<th>Time / notes</th>
<th>Weighting for module grade</th>
</tr>
</thead>
</table>

**Notes:**
Successful participation in the practical course is a prerequisite for taking the module exam.