# neu470 - Molecular Sensory Neuroscience

<table>
<thead>
<tr>
<th>Module label</th>
<th>Molecular Sensory Neuroscience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Module code</td>
<td>neu470</td>
</tr>
<tr>
<td>Credit points</td>
<td>15.0 KP</td>
</tr>
<tr>
<td>Workload</td>
<td>450 h</td>
</tr>
<tr>
<td>Used in course of study</td>
<td>Master's Programme Neuroscience -&gt; Research Modules</td>
</tr>
<tr>
<td>Contact person</td>
<td></td>
</tr>
</tbody>
</table>

**Module responsibility**
- Karl-Wilhelm Koch

**Authorized examiners**
- Alle hier genannten

**Module counseling**
- Hans Gerd Nothwang
- Kathrin Thedieck
- John Neidhardt
- Anna-Maria Hartmann

**Entry requirements**
- Skills to be acquired in this module
  - Neurosci. knowlg. Expt. methods
  - Independent research Scient. literature
  - Social skills
  - Scientific English
  - Ethics

For students putting emphasis on cell biological, molecular biological, genetic, biochemical and/or neurobiological fields. The module can serve the purpose of preparing for a Master's thesis.

Upon successful completion of this course, students
- have an advanced knowledge in molecular cell biology
- have acquired methodological and experimental skills in molecular cell biology
- have an advanced knowledge of how to perform research projects
- have advanced skills in presenting and discussing scientific data they have obtained, analysed and put in a wider framework of a current scientific topic.

**Module contents**
- Theory and practice of topics related to issues in molecular sensory neuroscience;
- independent treatment of an individual project;
- acquiring an advanced theoretical knowledge in selected fields of the molecular biology of the cell (points of emphasis: genetics, biochemistry, cell biology; topics depending on working groups).

There are several options for the lab projects, in the broad categories of:
1. Protein function in neurosensory signaling (Koch)
2. Neurosensory genetics (Nothwang)
3. Metabolic signalling networks (Thedieck)
4. Human genetics: mutation identification, pathogenic processes and therapy development (Neidhardt)

**Reader's advisory**
Specific literature of the topics indicated above; original papers related to the current research question; will be different for every student and every year.

Textbooks of Cell Biology, Biochemistry, Genetics:
Alberts et al. Molecular Biology of the Cell (5th Edition or later); Stryer Biochemistry (7th Edition or later); Lehninger Biochemistry (4th Edition or later). These textbooks are updated almost every 3 or 4 years.

**Links**
- Languages of instruction: German, English
- Duration (semesters): 1 Semester
- Module frequency: halbjährlich
- Module capacity: unlimited
- Reference text: Time is flexible and subject to individual arrangement. An accepted internship report and participation in a joint poster presentation of concurrent research modules are required to pass the module.

**Modullevel**
- MM (Mastermodul)

**Modulart**
- Wahlpflicht

**Lern-/Lehrform / Type of program**

**Vorkenntnisse / Previous knowledge**

<table>
<thead>
<tr>
<th>Examination</th>
<th>Time of examination</th>
<th>Type of examination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final exam of module</td>
<td>as agreed; usually within 2 months of the conclusion of lab work</td>
<td>oral exam of 30 min. in Cell Biology, Genetics or Biochemistry, depending on the chosen option</td>
</tr>
</tbody>
</table>

Participation in seminar,
<table>
<thead>
<tr>
<th>Examination</th>
<th>Time of examination</th>
<th>Type of examination</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Signed project report</td>
</tr>
</tbody>
</table>

**Course type**: Projektorientiertes Modul

- **SWS**: 10.00
- **Frequency**: WiSe
- **Workload attendance**: 140 h