**Program Description**

The Master Program in **Cell Biology and Physiology** coordinated by the Institute for Cell Biology and Neuroscience focuses on an understanding of fundamental life processes from cell growth, cell-cell communication and differentiation to hormonal, inflammatory, angiogenic neuronal signaling and aging. These processes are studied in the context of cells, individual tissues and model organisms.

Experimental and conceptual approaches include modern cell biological, molecular, biochemical, molecular, immunological and genetic methods combined with molecular imaging, morphological and physiological technologies.

The Master Program consists of 6 compulsory and 4 elective modules in order to allow an interdisciplinary education. This may be combined with selective modules from other master programs of the faculty.

**Exemplary Degree Course Scheme/Admission Requirements**

<table>
<thead>
<tr>
<th>Term</th>
<th>Module</th>
</tr>
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<tbody>
<tr>
<td>1 - Winter</td>
<td>comp.  Introduction</td>
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<tr>
<td></td>
<td>comp.  Advanced Physiology</td>
</tr>
<tr>
<td></td>
<td>optional Elective Module - 1</td>
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<tr>
<td></td>
<td>optional Elective Module - 2</td>
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<tr>
<td>2 - Summer</td>
<td>comp.  Advanced Cell Biology</td>
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<tr>
<td></td>
<td>optional Elective Module - 3</td>
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<tr>
<td></td>
<td>optional Elective Module - 4</td>
</tr>
<tr>
<td>3 - Winter</td>
<td>comp.  Current Concepts in:</td>
</tr>
<tr>
<td></td>
<td>Physiology - or - Cell Biology</td>
</tr>
<tr>
<td></td>
<td>comp.  Methods in:</td>
</tr>
<tr>
<td></td>
<td>Physiology - or - Cell Biology</td>
</tr>
<tr>
<td>4 - Summer</td>
<td>comp.  Master Thesis</td>
</tr>
</tbody>
</table>

Students entering the graduate program should have a Bachelor’s degree in a related biological, biomedical, psychological or other scientific/mathematic science. The Master Degree of **Cell Biology and Physiology** starts only in winter term!

- Information for application can be found at: [www.uni-frankfurt.de / studium / studienangebot / master / index.html](http://www.uni-frankfurt.de/studium/studienangebot/master/index.html)
Institute for Cell Biology and Neuroscience

The Institute offers a graduate program leading to the Master of Cell Biology and Physiology.

Our groups work on biochemical, cellular, immunological, genetical, molecular methods in order to analyze scientific questions in the field of physiology, cell biology, molecular genetics, neurobiology and neurochemistry.

Scientific questions will be investigated on different cell culture systems and model organisms. In addition our department provides access to high resolution optical technologies, documentation systems and databases.

International partnership programs, scientific cooperations with other universities, other institutes of the department, institutions and hospitals are well established.

- General information can be found at: www.uni-frankfurt.de/fb/fb15/institute/inst-2-zellb-neuro/index.html

Participating Groups / Course Instructor

Institute for Cell Biology and Neuroscience

- Neurochemistry
  Prof. Dr. Walter Volknandt

- Neurobiology of the Honeybee
  Prof. Dr. Bernd Grünewald

- Molecular and Cellular Neuroscience
  Prof. Dr. Amparo Acker-Palmer

- Neurobiology of Biosensors
  Prof. Dr. Manfred Kössl

- Physical Biology
  Prof. Dr. Ernst H.K. Stelzer

- Molecular Cell Biology and Human Genetics
  Prof. Dr. Anna Starzinski-Powitz

Institute for Molecular Bio Sciences

- Molecular Developmental Biology
  Prof. Dr. Heinz D. Osiewacz

- Molecular Cell Biology of Plants
  Prof. Dr. Enrico Schleiff

FB 16 / Institute for Cardiovascular Regeneration

- Vascular Homeostasis
  Prof. Dr. Stefanie Dimmeler

Elective Modules

- Cell Biology and Physiology of Signal Transfer
- Neurophysiology of Sensory Systems
- Developmental Neurobiology
- Cell Biology and Physiology of Angiogenesis
- Physiology and Behaviour
- 3-D Cell Culture and Microscopy
- Cell Communication, -Adhesion, -Motility
- Fungal Cell Biology
- Plant Cell Biology

Program Objectives

- Education of students in modern concepts and methods of cell biology and physiology.
- Performance of interdisciplinary science and acquisition of self-dependent scientific action and thinking.
- Adjustment to a new job, independent advancement in the area of expertise and expanding career opportunities in: bioinformatics, biopharmaceutical research, scientific management, biotechnology, marketing.