## M.Sc. Physical Biology of Cells and Cell Interactions

### Study Plan

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<td>basic methods in cell biology (14 CP)</td>
<td>advanced cell biology II (7 CP)</td>
<td>current concepts in cell biology (15 CP)</td>
<td>master project (30 CP)</td>
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<td>lab rotation I (11 CP)</td>
<td>lectures and literature seminars</td>
<td>advanced methods in cell biology (15 CP)</td>
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<td>advanced cell biology I (6 CP)</td>
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<td>lab rotation III (11 CP)</td>
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### Lab Rotations

- **MSc-PBioC-12**: Neurophysiology of sensory systems
- **MSc-PBioC-13**: Auditory function and dysfunction: behavior and physiology
- **MSc-PBioC-14**: Information processing in the central auditory system
- **MSc-PBioC-16**: Physiology and behavior
- **MSc-PBioC-17**: Three-dimensional cell cultures and three-dimensional microscopy
- **MSc-PBioC-18**: Three-dimensional developmental biology and three-dimensional microscopy
- **MSc-PBioC-21**: Plant cell biology
- **MSc-PBioC-22**: Fungal cell biology
- **MSc-PBioC-23**: Function and evolution of metabolic pathways
- **MSc-PBioC-24**: Special aspects of immunology
- **MSc-PBioC-25**: Developmental genetics
- **MSc-PBioC-27**: Endothelial cells and tumor cell biology
- **MSc-PBioC-28**: Principles of tube morphogenesis
- **MSc-PBioC-29**: Developmental cell biology
- **MSc-PBioC-33**: Cellular RNA biology
- **MSc-PBioC-34**: Neuronal basis of acoustic communication in mammals
- **MSc-PBioC-35**: Cellular, molecular and systemic neurobiology in mouse and zebrafish
- **MSc-PBioC-37**: Data analysis, mathematical modeling and simulation
- **MSc-PBioC-38**: Understanding the molecular mechanisms leading to Parkinson’s disease
- **MSc-PBioC-39**: Cellular and molecular mechanisms in neurodegenerative disorders
- **MSc-PBioC-40**: Molecular Psychiatry

### Study Profile

- **Model system**: Tissue culture / organoids, Rodents, Zebrafish, Invertebrates, Plants, Microorganisms / yeast, Organisms, Tissues, Cells, Molecular networks, Molecules
- **Techniques**: Biochemistry, Physiology, Organismal genetics, Cell biology, Light microscopy, Electron microscopy, Data analysis, Bioinformatics, Computational modeling, Applied, Basic

### Master Coordination

**Dr. Isabell Schmitz**

Uni Campus Riedberg

Max von Laue-Straße 13

60438 Frankfurt

Tel.: +49 (69) 798 42018

isabell.schmitz@em.uni-frankfurt.de

http://goethe.link/msc-pbio
M.Sc. Physical Biology of Cells and Cell Interactions

**Study Plan**

**SEMESTER 1**
- basic methods in cell biology (14 CP)
- advanced cell biology I (6 CP)
- lab rotation I (11 CP)

**SEMESTER 2**
- advanced cell biology II (7 CP)
- lab rotation II (11 CP)
- lab rotation III (11 CP)

**SEMESTER 3**
- current concepts in cell biology (15 CP)
- advanced methods in cell biology (15 CP)

**SEMESTER 4**
- project work on the theoretical principles of research conception (15 CP)
- master project (30 CP)

**Lab Rotations**
- MSc-PBioC-12: Neurophysiology of sensory systems
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- MSc-PBioC-29: Data analysis, mathematical modeling and simulation
- MSc-PBioC-30: Understanding the molecular mechanisms leading to Parkinson's disease
- MSc-PBioC-31: Cellular and molecular mechanisms in neurodegenerative disorders
- MSc-PBioC-32: Molecular psychiatry

**Study Profile**

**Model system**
- Tissue culture / organoids
- Rodents
- Zebrafish
- Invertebrates
- Plants
- Microorganisms / yeast
- Organisms
- Tissues
- Cells
- Molecular networks
- Molecules

**Techniques**
- Biochemistry
- Physiology
- Organismal genetics
- Cell biology
- Light microscopy
- Electron microscopy
- Data analysis
- Bioinformatics
- Computational modeling

**Scale**

**Type of research**

**Master Coordination**

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60438 Frankfurt
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