**Module title**  
Neuromodulation and Neuronal Development B

**Abbreviation**  
07-MENMND-152-m01

**Module coordinator**  
holder of the Chair of Neurobiology and Genetics

**Module offered by**  
Faculty of Biology

**ECTS**  
5

**Method of grading**  
Only after succ. compl. of module(s)

**Duration**  
1 semester

**Module level**  
graduate

**Other prerequisites**  
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### Contents

Neuromodulation: cellular and molecular biology of neuromodulators and their receptors, modulation of synaptic transmission and membrane potential, theoretical and functional aspects of neuromodulation, model systems used to study modulation of neuronal circuits. Fundamental principles of molecular developmental neurobiology. Focus is on the establishment of the neuroectoderm, pattern generation and regional specification, neuronal precursors, neuronal growth, differentiation of neurons, axonal pathfinding, neuronal connectivity.

### Intended learning outcomes

The students learn fundamental principles underlying neuromodulation and neuronal development and obtain an insight into current research in the field.

### Courses

<table>
<thead>
<tr>
<th>Type</th>
<th>Number of weekly contact hours</th>
<th>Language — if other than German</th>
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<tbody>
<tr>
<td>V</td>
<td>3</td>
<td>English</td>
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**Module taught in:** English

**Method of assessment**

Students will be informed about the method, length and scope of the assessment prior to the course. Usually, one of the following options will be chosen:  
a) written examination (30 to 60 minutes, including multiple choice questions)  
b) oral examination of one candidate each (30 to 60 minutes)  
c) oral examination in groups of up to 3 candidates (30 to 60 minutes)  
Language of assessment: German and/or English

### Allocation of places

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### Additional information

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### Referred to in LPO I

(examination regulations for teaching-degree programmes)

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### Module appears in

Master's degree (1 major) Biology (2015)  
Master's degree (1 major) FOKUS Life Sciences (2015)  
Master's degree (1 major) Biosciences (2016)  
Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016)  
Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016)  
Master's degree (1 major) Biosciences (2017)  
Master's degree (1 major) Biosciences (2018)  
Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020)  
Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020)  
Master's degree (1 major) Biosciences (2021)