

Catalogue: Basic Neuroscience

All topics indicated on this list have to be known to the level given by the book "Essential Neuroscience" by Siegel and Sapru; revised version 2007. This book is also our recommended textbook and the learning catalogue is organized following the chapters of this book.

Section I Gross Anatomy of the Brain

- 1 Overview of the Central Nervous System
- 2 Development of the Nervous System
- 3 Meninges and Cerebrospinal Fluid
- 4 Blood Supply of the Central Nervous System

Section II The Neuron

- 5 Histology of the Nervous System
- 6 Electrophysiology of Neurons
- 7 Synaptic Transmission
- 8 Neurotransmitters

Section III Organization of the Central Nervous System

- 9 The Spinal Cord
- 10 Brainstem I: The Medulla
- 11 Brainstem II: Pons and Cerebellum
- 12 Brainstem III: The Midbrain
- 13 The Forebrain
- 14 The Cranial Nerves

Section IV Sensory Systems

- 15 Somatosensory System
- 16 Visual System
- 17 Auditory and Vestibular Systems
- 18 Olfaction and Taste

Section V Motor Systems

- 19 The upper motor neurons
- 20 The basal ganglia
- 21 The cerebellum

Section VI Integrative Systems

- 22 The Autonomic Nervous System
- 23 The Reticular Formation
- 24 The Hypothalamus
- 25 The Limbic System
- 26 The Thalamus and Cerebral Cortex
- 27 Vascular Syndromes
- 28 Behavioral and Psychiatric Disorders

Additional education

Biostatistics

The student is expected to be able to explain which statistical methods are appropriate for his own work and to decide, whether the methods used in relevant literature are correct. This means basic knowledge on criteria to decide which test is the correct one and how to interpret results in the working field.

As a documentation of presentational skills the programs expects

- 3 or more posters presented at national and international meetings.
- 6 or more talks given at work-group seminars and/or within the MZA-seminar series.
- 6 or more Paper presentations in journal club seminars.

Please note that the documentation of presentation skills fully applies to newly enrolled students and proportionately to students already enrolled (depending on how many semesters they have been in the program).