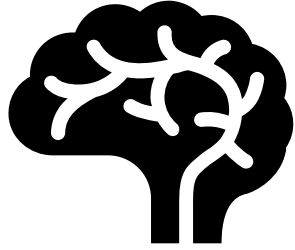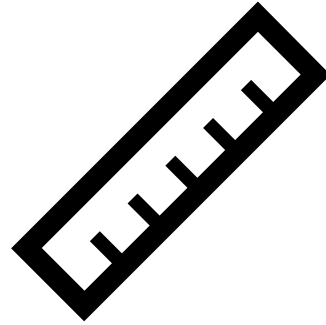**What do our students learn?**
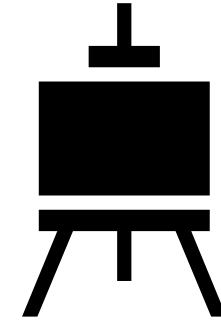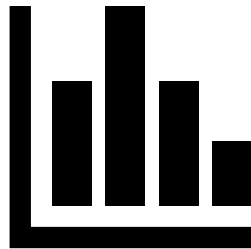
How to be a scientist

Courses

Thesis

Understanding
brain functions

Measure
human brain
processes

Design and
manage research
projects

Analyze
behavioral and
imaging data
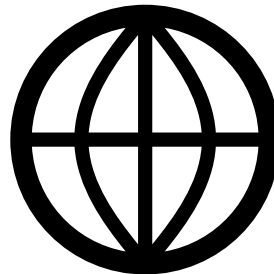
Interdisciplinary
and international
groups
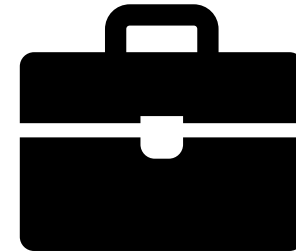
Pursuing a
scientific career

UNIVERSITY OF TURKU
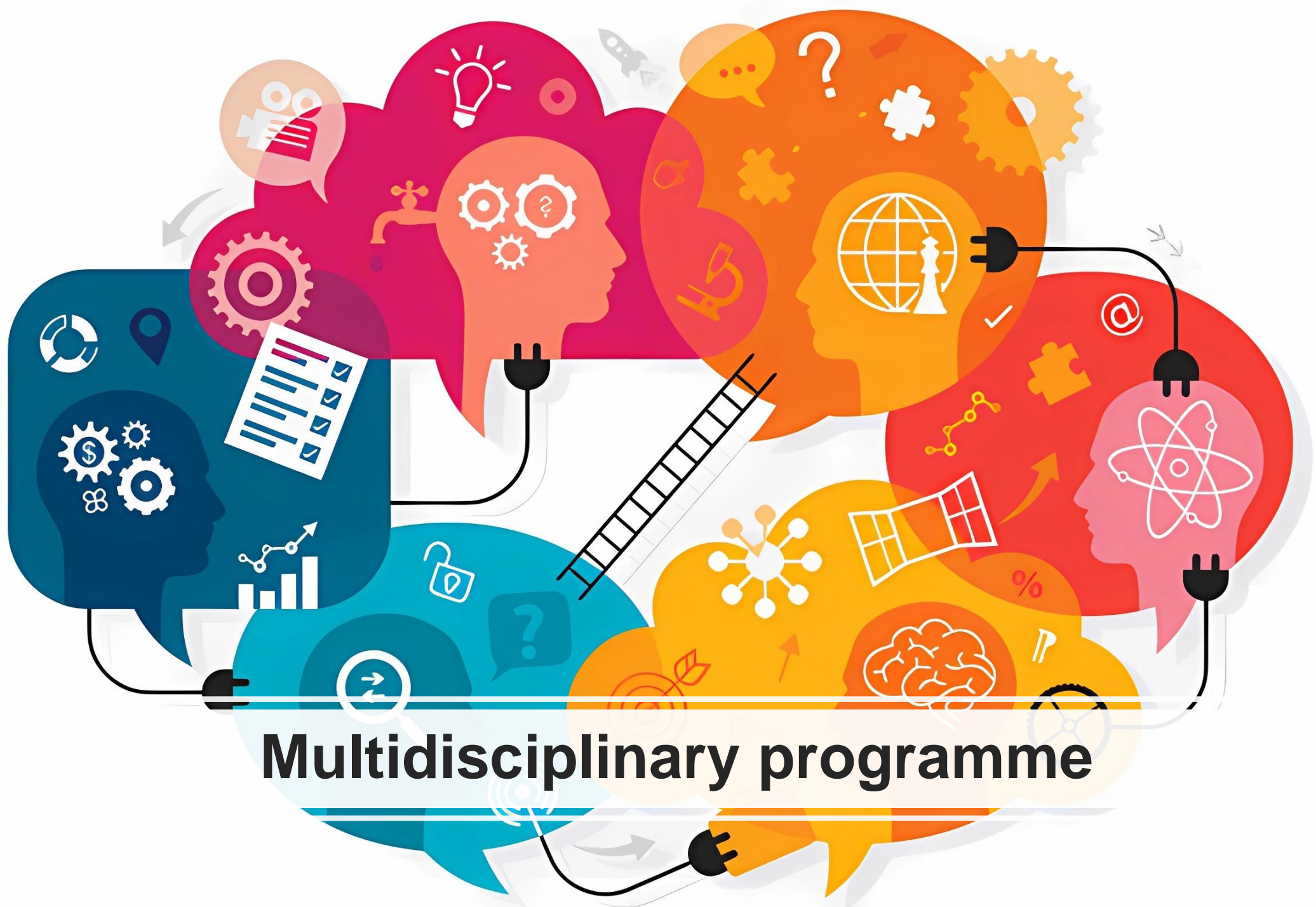
Multidisciplinary programme
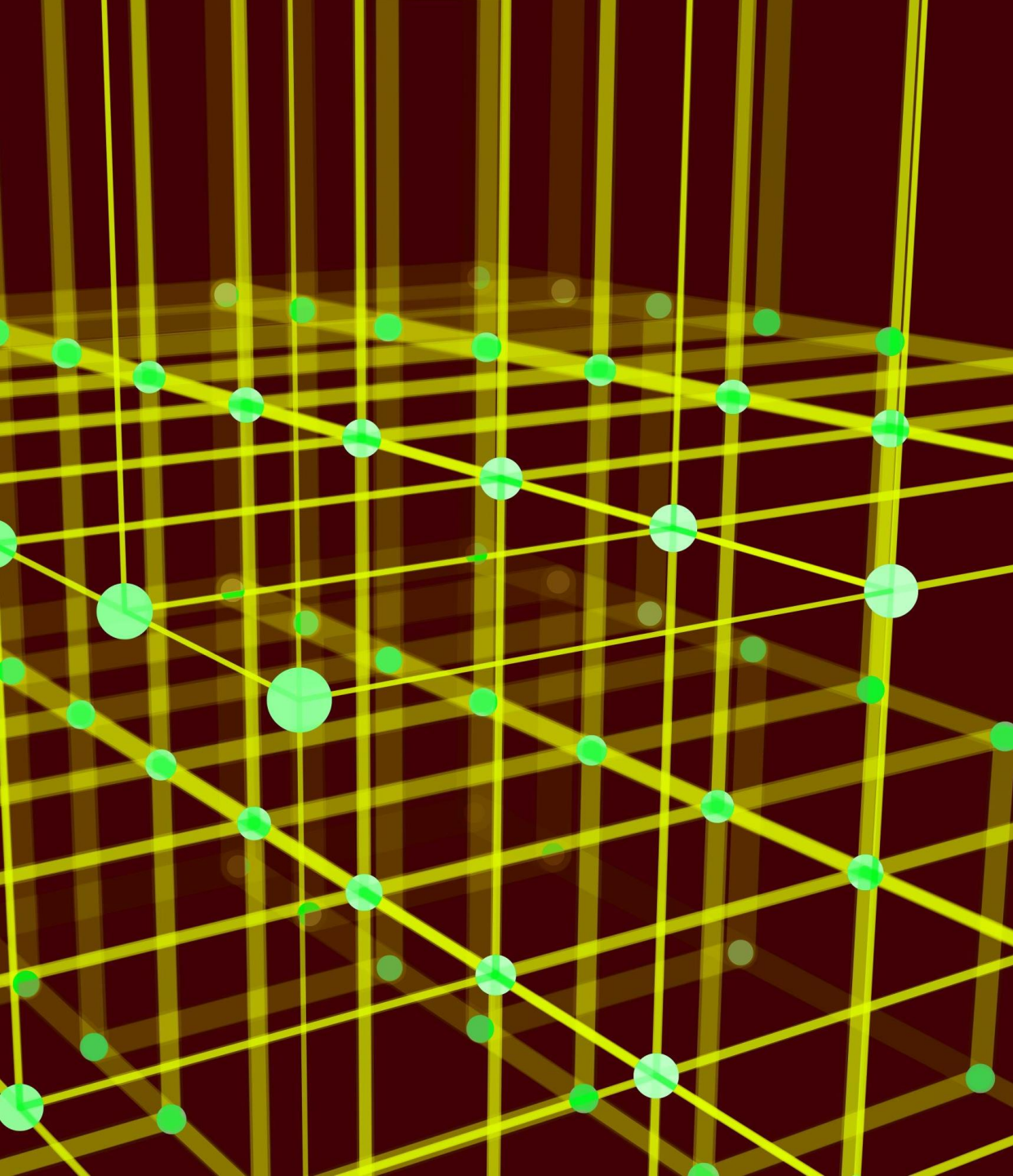
Programme's structure

Master's Degree – 120 ECTS
(1 ECTS ~ 27h)
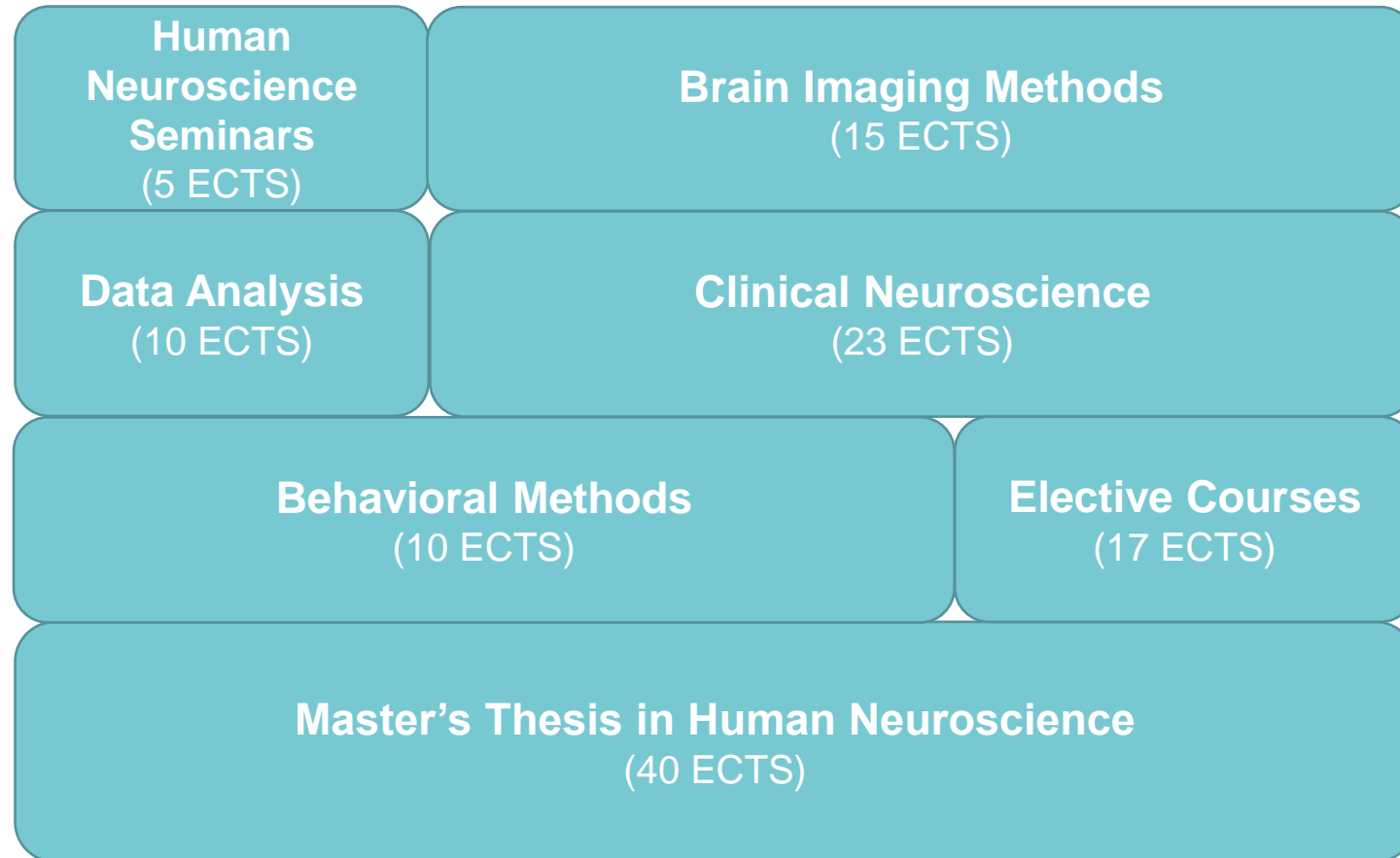
Human Neuroscience Seminars (5 ECTS)	Brain Imaging Methods (15 ECTS)
Data Analysis (10 ECTS)	Clinical Neuroscience (23 ECTS)

Behavioral Methods (10 ECTS)	Elective Courses (17 ECTS)

Master's Thesis in Human Neuroscience (40 ECTS)

> **Study Guide**

Master's Degree – 120 ECTS
(1 ECTS ~ 27h)

Human Neuroscience Seminars (5 ECTS)

Brain Imaging Methods (15 ECTS)

Data Analysis (10 ECTS)

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Behavioral Methods (10 ECTS)

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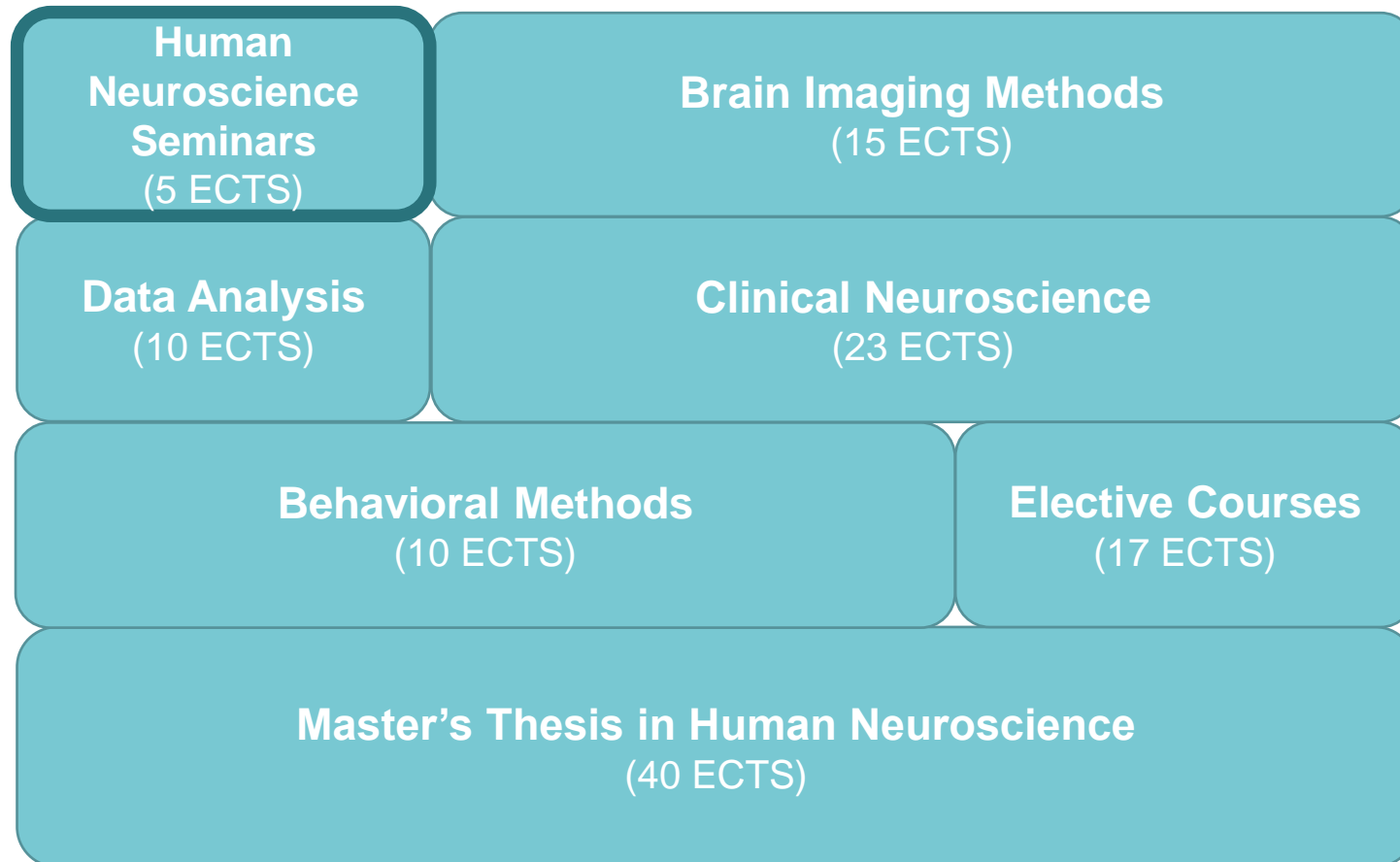
> **Study Guide**

Master's Degree – 120 ECTS
(1 ECTS ~ 27h)

Human Neuroscience Seminars	5
Human Neuroscience Tutorial Group (in English)	2
Human Neuroscience Career Seminar (in English)	1
Human Neuroscience Symposium (in English)	2

Master's Degree – 120 ECTS
(1 ECTS ~ 27h)

Human Neuroscience Seminars (5 ECTS)	**Brain Imaging Methods** (15 ECTS)
Data Analysis (10 ECTS)	**Clinical Neuroscience** (23 ECTS)
Behavioral Methods (10 ECTS)	**Elective Courses** (17 ECTS)
Master's Thesis in Human Neuroscience (40 ECTS)	
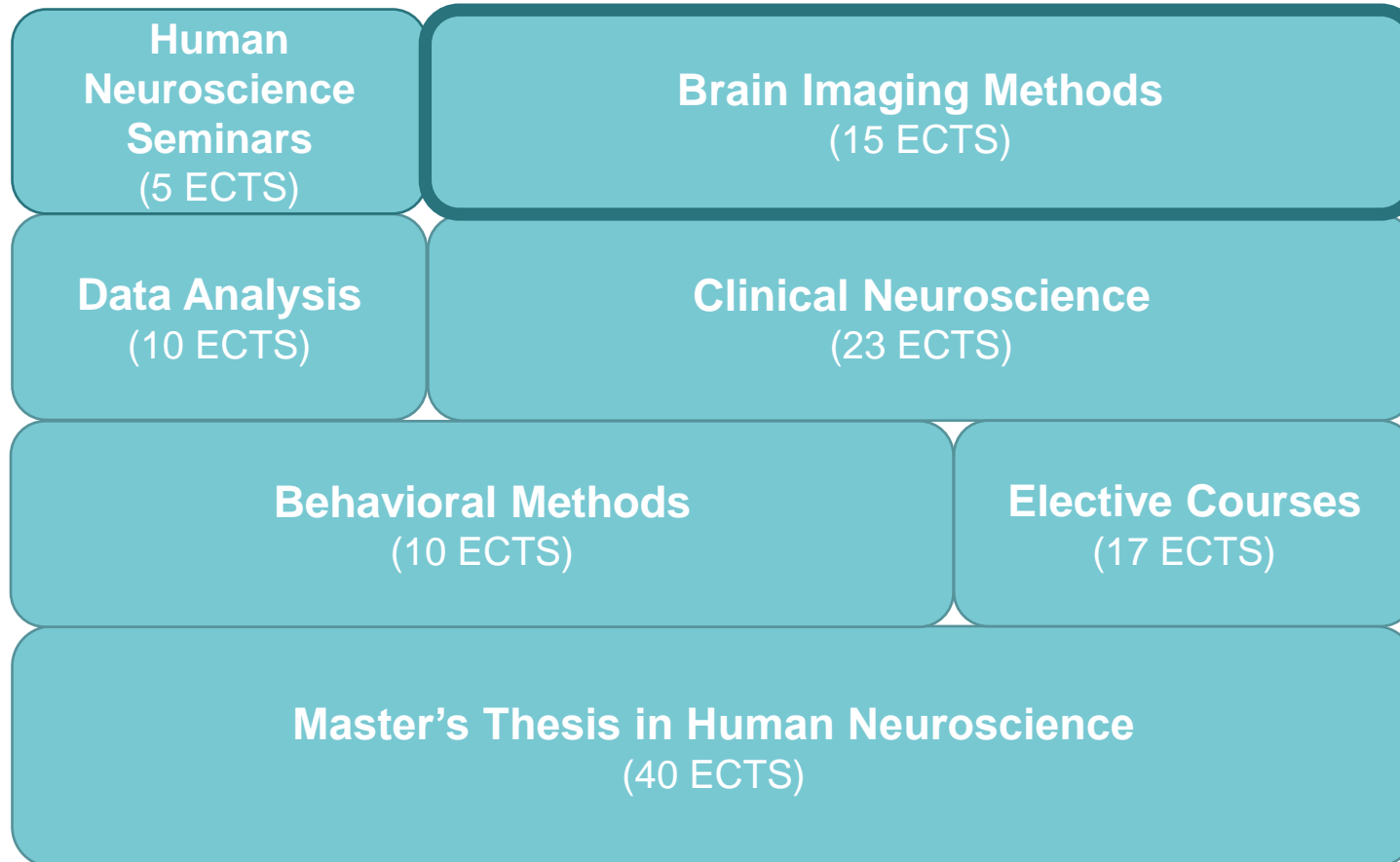
> Study Guide

Master's Degree – 120 ECTS (1 ECTS ~ 27h)

Brain Imaging Methods	15		
PET basics (in English)	2-3	✓	✓
Brain Stimulation (in English)	2	✓	✓
Electroencephalography (EEG) (in English)	3	✓	✓
Magnetic resonance imaging (MRI) (in English)	2	✓	
Seminars on Core Competences of Neuroimaging (in English)	5	✓	
Turku PET Centre Brain Imaging Course (in English)	5	✓	
TBMC Summer School of Neuroscience with MRI (in English)	1-3	✓	✓

Master's Degree – 120 ECTS
(1 ECTS ~ 27h)

Human Neuroscience Seminars (5 ECTS)	**Brain Imaging Methods** (15 ECTS)	
Data Analysis (10 ECTS)	**Clinical Neuroscience** (23 ECTS)	
Behavioral Methods (10 ECTS)	**Elective Courses** (17 ECTS)	
Master's Thesis in Human Neuroscience (40 ECTS)		
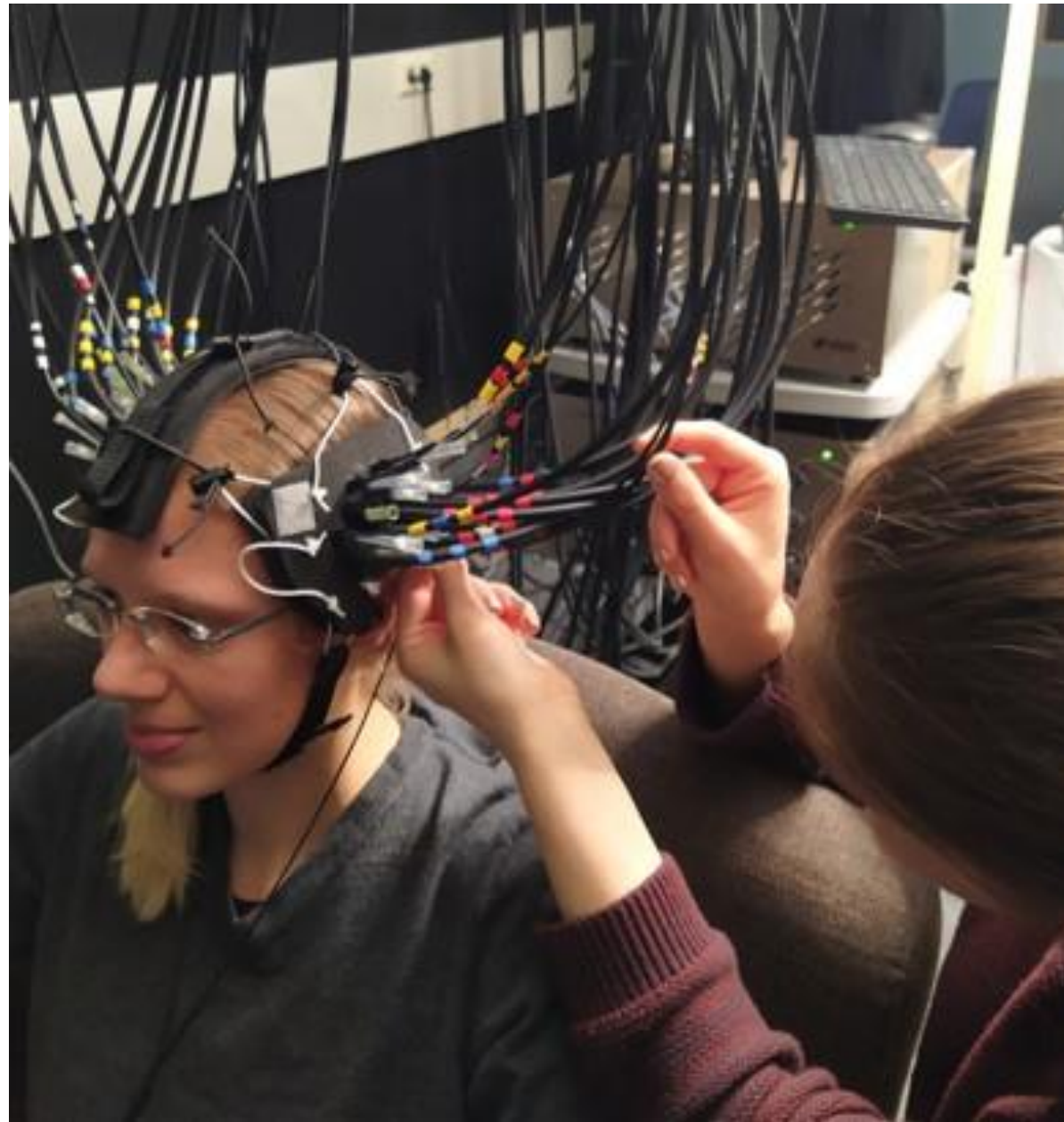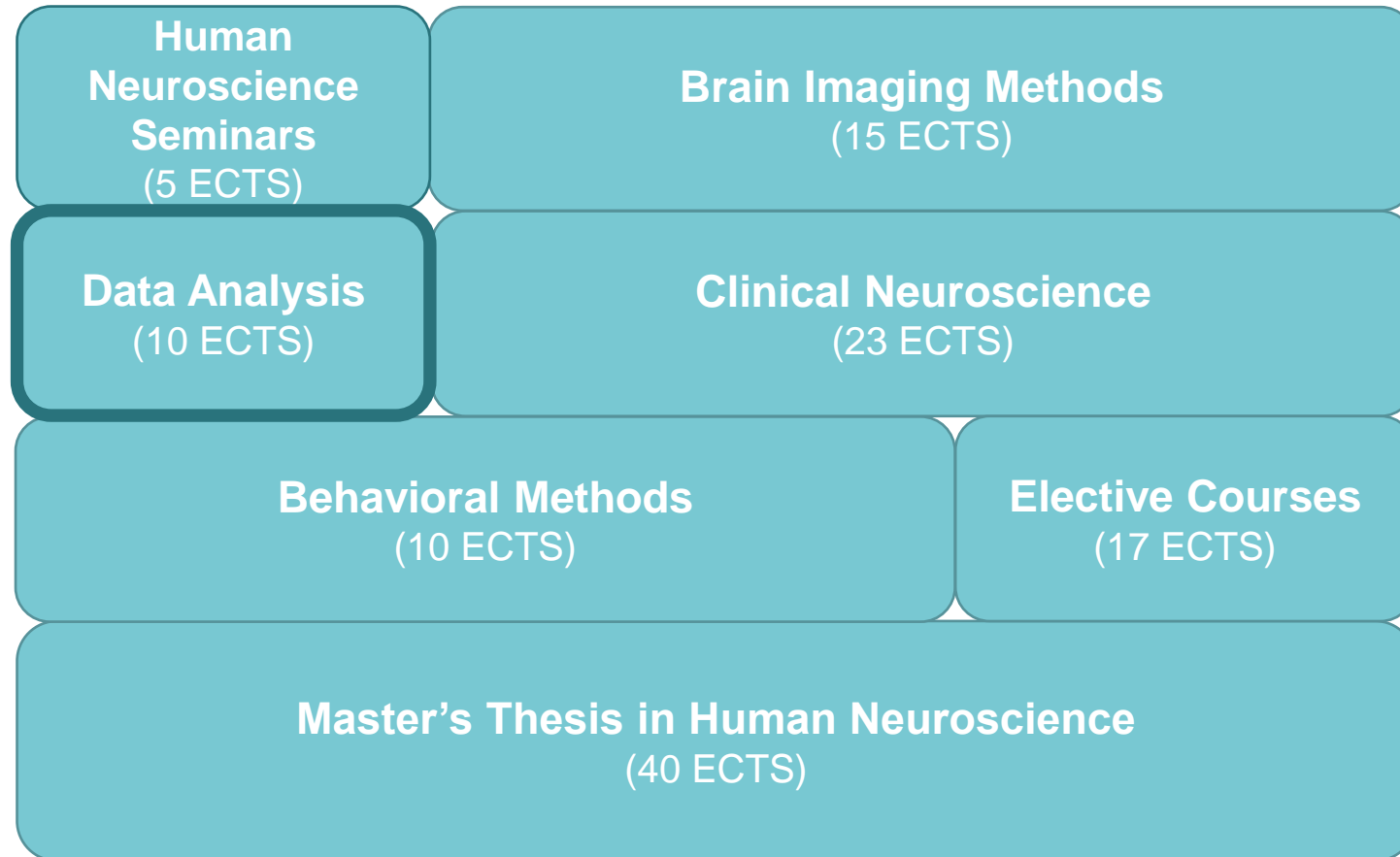
> **Study Guide**

Master's Degree – 120 ECTS
(1 ECTS ~ 27h)

Data Analysis	10		
Introduction to Programming (in English)	5-6	✓	✓
Statistical Data Analysis (in English)	5	✓	✓
Data Analysis and Knowledge Discovery (in English)	5	✓	✓

Master's Degree – 120 ECTS
(1 ECTS ~ 27h)

Human Neuroscience Seminars (5 ECTS)	Brain Imaging Methods (15 ECTS)
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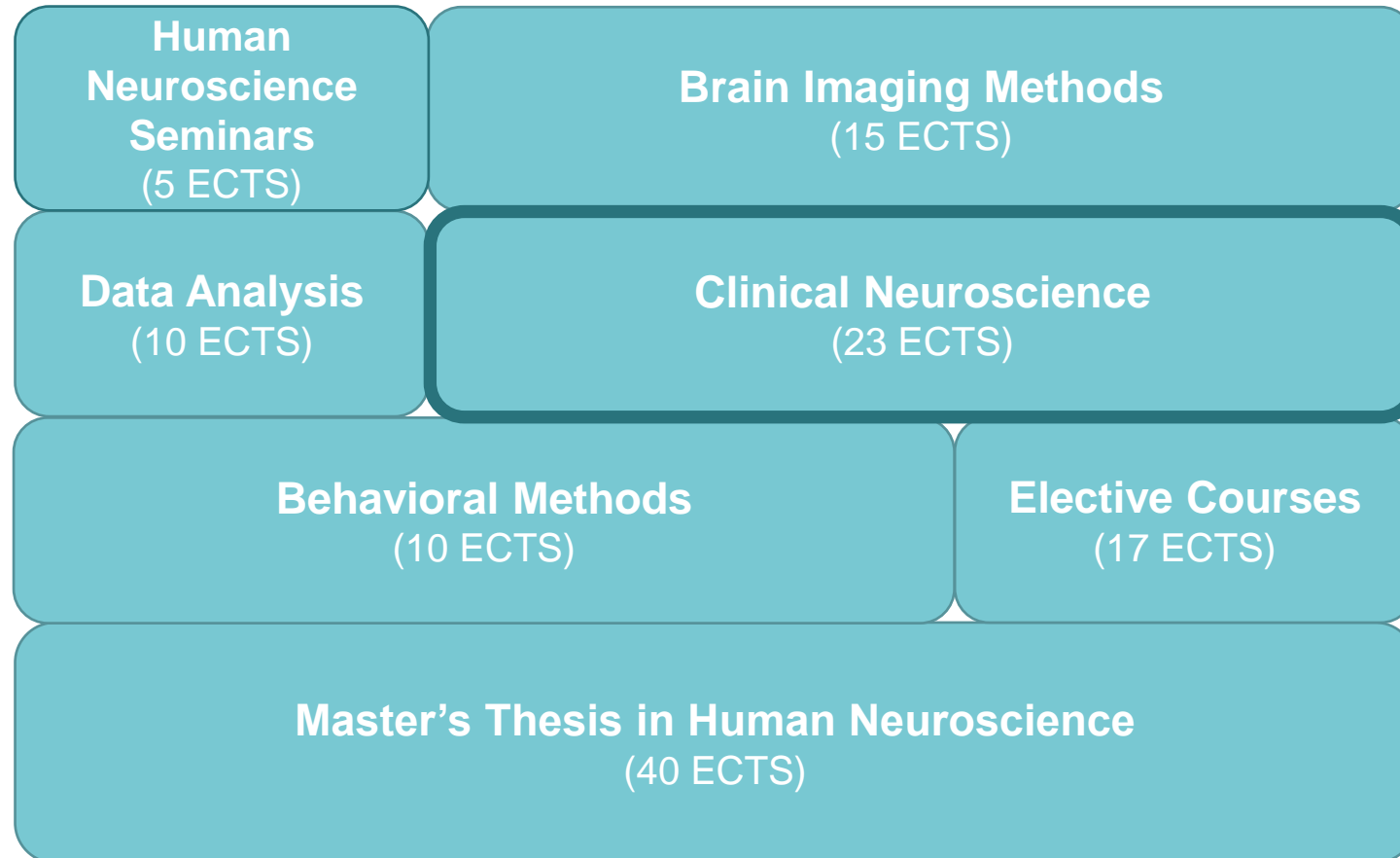
> Study Guide

Master's Degree – 120 ECTS
(1 ECTS ~ 27h)

Clinical neuroscience	23
Invitation to Neuroscience (in English)	5
Neurology for Neuroscientists (in English)	5
Psychiatry (in English)	5
Clinical Neurophysiology (in English)	3
Neuropharmacology (in English)	5

Master's Degree – 120 ECTS
(1 ECTS ~ 27h)

Human Neuroscience Seminars
(5 ECTS)

Brain Imaging Methods
(15 ECTS)

Data Analysis
(10 ECTS)

Clinical Neuroscience
(23 ECTS)

Behavioral Methods
(10 ECTS)

Elective Courses
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Master's Thesis in Human Neuroscience
(40 ECTS)
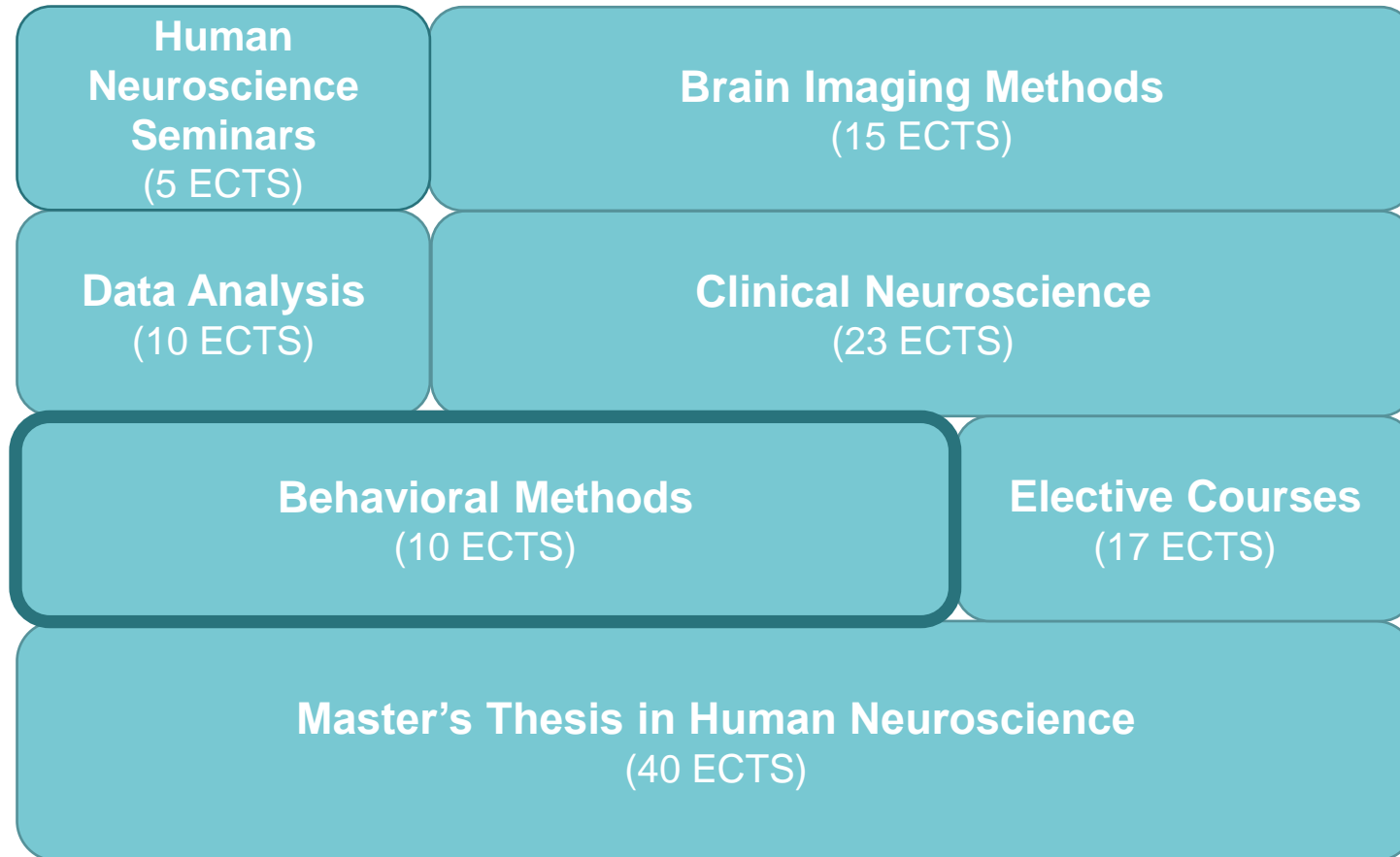
> Study Guide

Master's Degree – 120 ECTS
(1 ECTS ~ 27h)

Behavioral Methods	10		
Psychophysics: Theory and Application (in English)	5	✓	
Cognitive Neuroscience (in English)	5	✓	
Cognitive Psychology (in English)	5	✓	

Master's Degree – 120 ECTS
(1 ECTS ~ 27h)

Human Neuroscience Seminars (5 ECTS)

Brain Imaging Methods (15 ECTS)

Data Analysis (10 ECTS)

Clinical Neuroscience (23 ECTS)

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Master's Thesis in Human Neuroscience (40 ECTS)
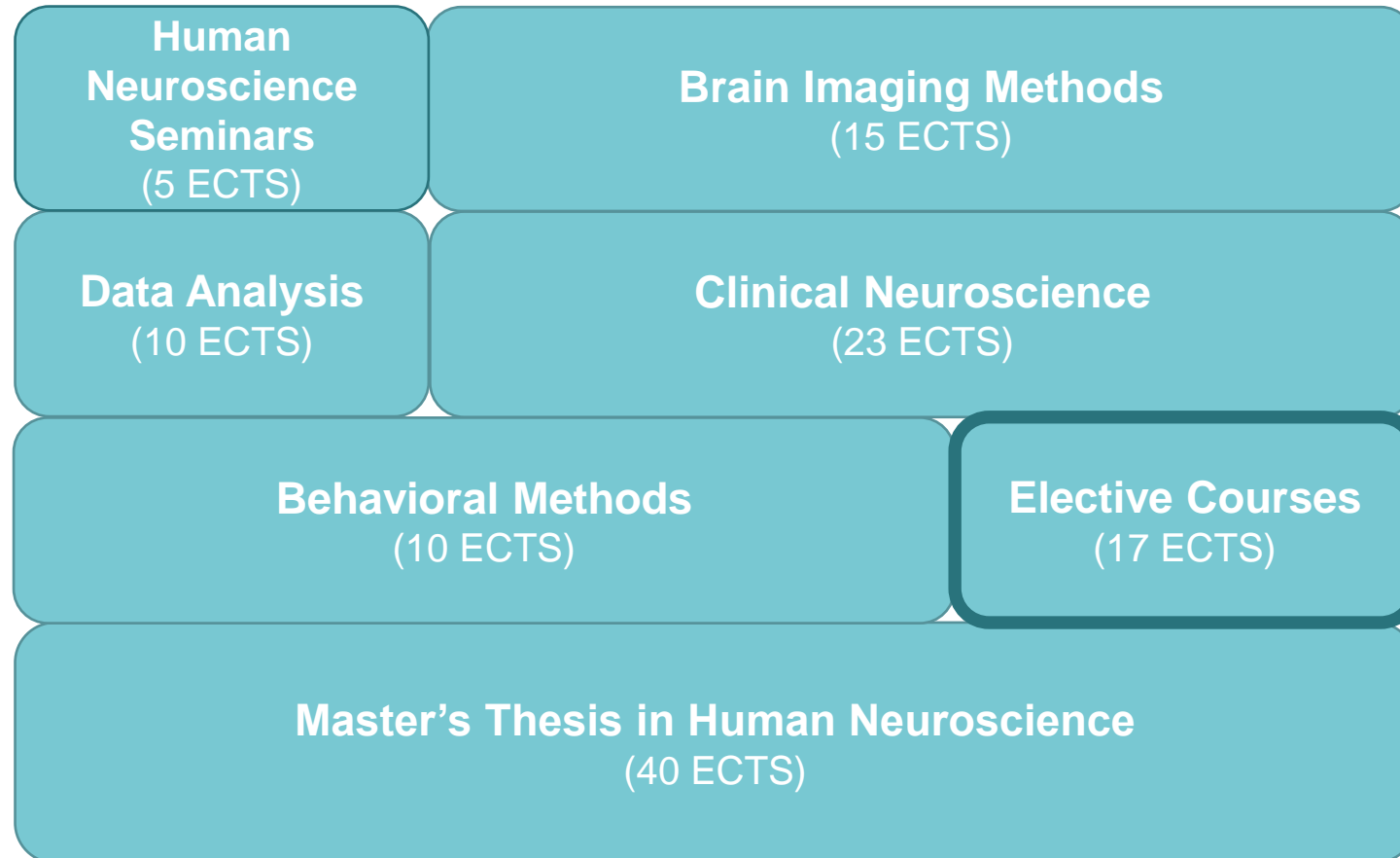
> **Study Guide**

Master's Degree – 120 ECTS
(1 ECTS ~ 27h)

Elective Courses	17		
Nutrition and Brain (in English)	5	✓	✓
Human Neuroscience Research Project (in English)	2-8	✓	✓
Human Neuroscience Internship Program (in English)	6-12	✓	✓
Pedagogy in Human Neuroscience (in English)	3-5		✓
Imaging Dementia: Advanced Methods in Clinical Research (in English)	5	✓	✓

Master's Degree – 120 ECTS
(1 ECTS ~ 27h)

Human Neuroscience Seminars (5 ECTS)	Brain Imaging Methods (15 ECTS)
Data Analysis (10 ECTS)	Clinical Neuroscience (23 ECTS)

Behavioral Methods (10 ECTS)	Elective Courses (17 ECTS)

Master's Thesis in Human Neuroscience (40 ECTS)
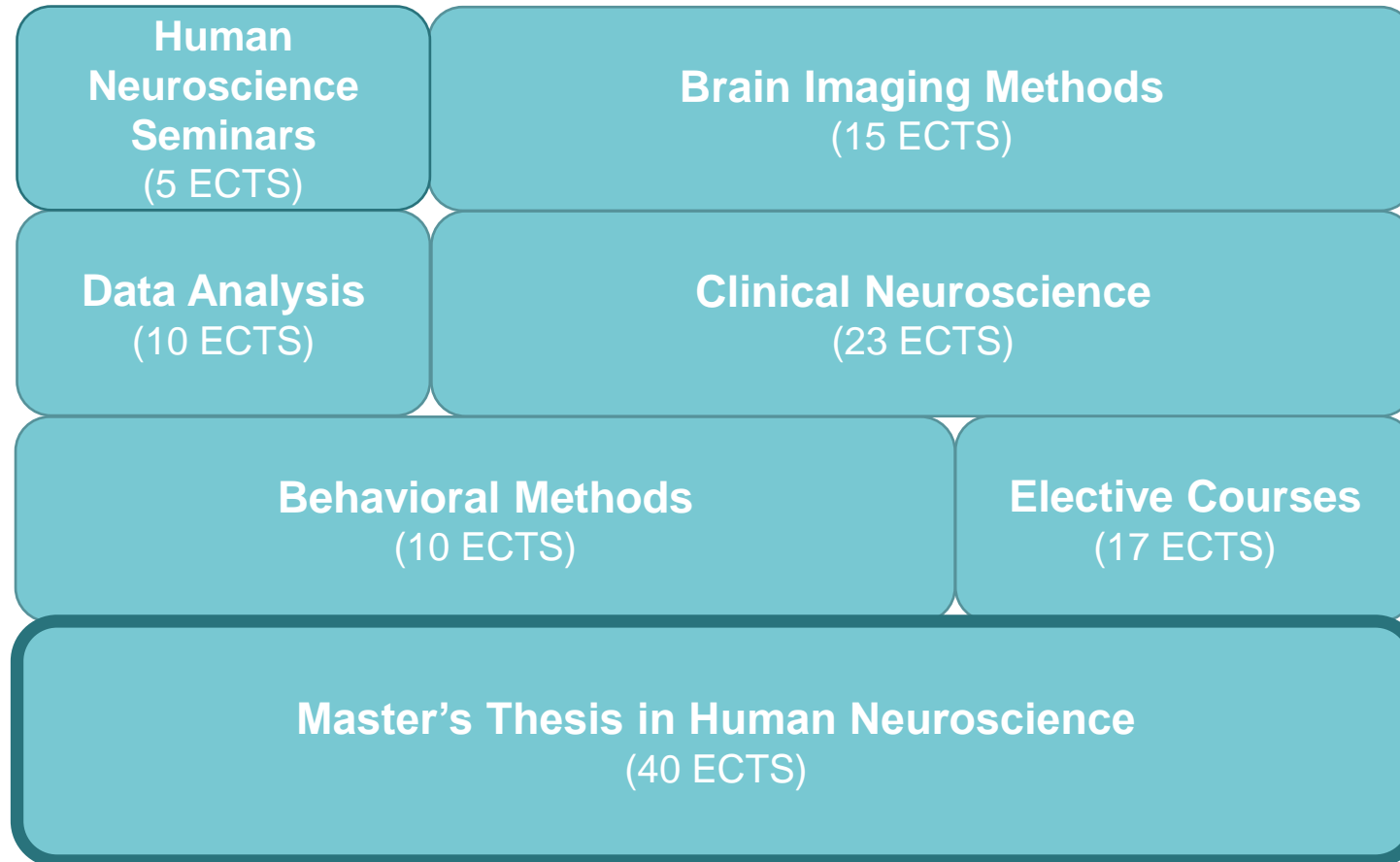
> **Study Guide**

Master's Degree – 120 ECTS
(1 ECTS ~ 27h)

Master's thesis in Human Neuroscience	40
Master's Thesis in Human Neuroscience (in English)	40
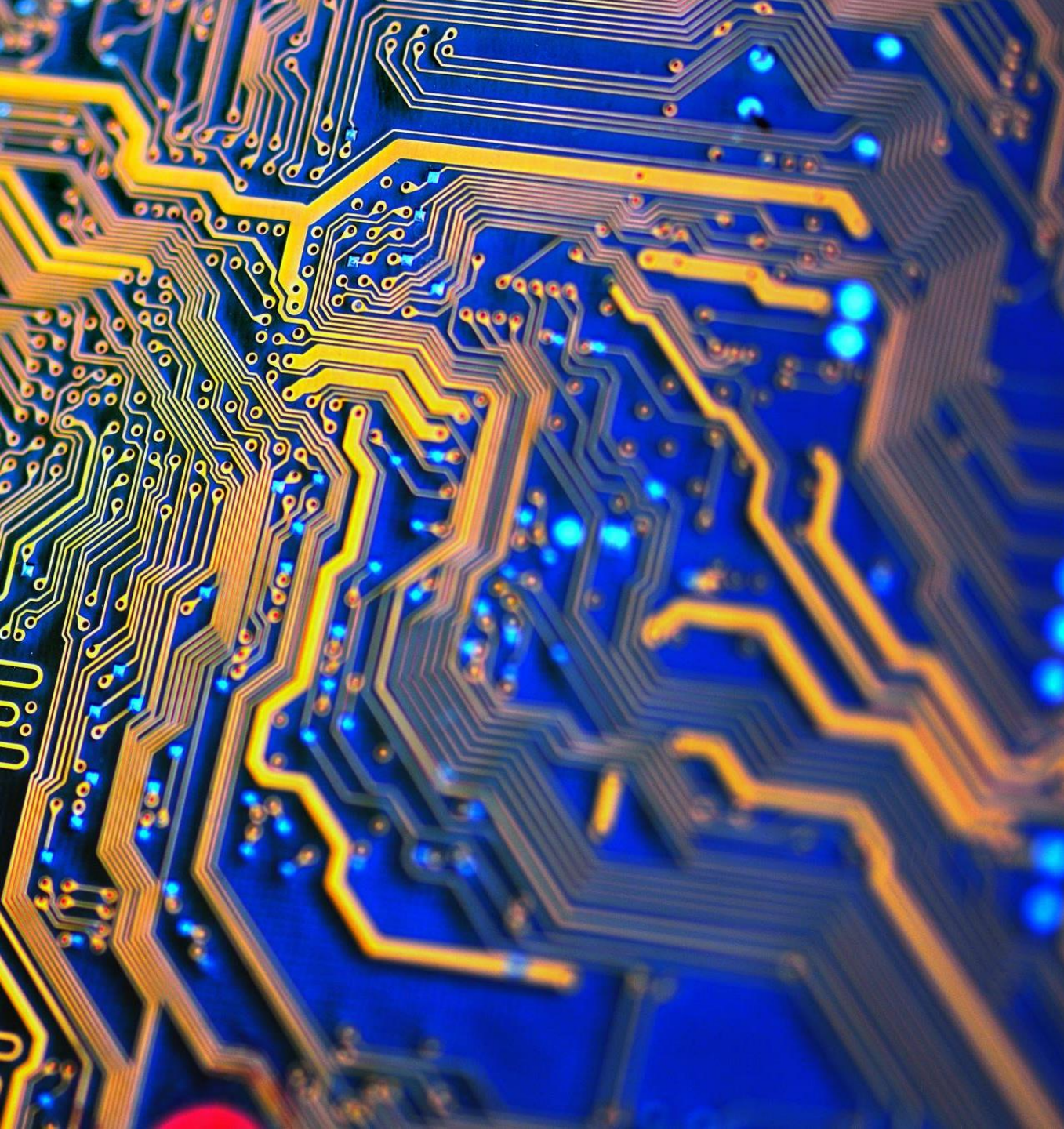
Electives

Electives 💡

- Students have the freedom to choose whatever they like as their elective studies!

- Some recommendations can be found from the Study Guide
  - Human Neuroscience Internship (12 ECTS)
  - Nutrition and Brain (5 ECTS)

- …but they can also browse through Minor Subjects and Other Modules offered in our University
  - For example: Finnish Language Courses!

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– Recommended Electives

You can check the electives offered by TBMC through the study guide.

The following list contains examples of courses offered by other programs and suggested by TBMC's staff and former students. You can choose from this list or other courses you are interested in and are not listed.

Cognitive and Behavioral Neuroscience:

- Consciousness and Brain
- Evolutionary Psychology
- Image Perception and Cognition
- The Speaking Brain
- Neuroscientific Approach to Artistic and Practical Subjects (summer course at the University of Helsinki)
- Topics in Philosophy of Mind here

Translational and Clinical Neuroscience:

- Biomedical Ethics
- Introduction to Cell Biology
- Laboratory Animal Science
- Practical Training in In Vivo Imaging
- Therapy Areas in Drug Discovery and Translational Medicine I

Computer Science:

- Data Structures and Algorithms
- Introduction to R Programming Language in Computational Social Science
- Machine Learning and Pattern Recognition
- Perception and Navigation in Mobile Robotics

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Electives 💡

Students can also take
courses from other universities
in Finland!

A!
Aalto University

UNIVERSITY OF HELSINKI

Tampere University

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MDP for Human Neuroscience
ELECTIVES

COGNITIVE & BEHAVIOURAL NEUROSCIENCE

- Image Perception and Cognition
- Evolutionary Psychology
- Consciousness and Brain
- Recovering Brain
- Nutrition and Brain
- Acquisition and Analysis of Biosignals

TRANSLATIONAL & CLINICAL NEUROSCIENCE

- Introduction to Cell Biology
- Therapy Areas in Discovery and Translational Medicine I
- Laboratory Animal Science
- Practical Training In Vivo Imaging

COMPUTER SCIENCE

- Data Structures and Algorithms
- Perception and Navigation in Robotics
- Robotics and Autonomous Systems
- Machine Learning and Pattern Recognition
- Data Analysis and Knowledge Discovery
- Introduction to Programming (Python)
- Introduction to R Programming Language in Computational Social Science
- Biological Data Analysis with R
- Beginner Data Analysis with Python for Human Neuroscience

COMPUTATIONAL NEUROSCIENCE

- Tekoäly diagnostiikan, lääkekehityksen ja kuvantamisen palveluksessa
- Signal and Image processing
- The Mind and Artificial Intelligence

OTHER SUBJECTS

- Languages
  - Finnish Beginners' Course I & II
  - Finnish Continuation Course I & II
  - Courses in Spanish, French, German, Italian... (some are taught in Finnish some in English, check the Study Guide)
- Topics in Philosophy of Mind
- Neuroscientific approach to artistic and practical subjects (summer course at the University of Helsinki)

GOOD TO KNOW

These electives are just ones that previous students have taken, there are many more! Check the Study Guide: https://opas.peppi.utu.fi/en/degree-studies/14002/o?period=2022-2024

You can also take some courses from other universities as JOO-studies: https://www.utu.fi/en/study-at-utu/joo

Open universities also offer courses you can take, for example during the summer. You can find these on the universities' websites.

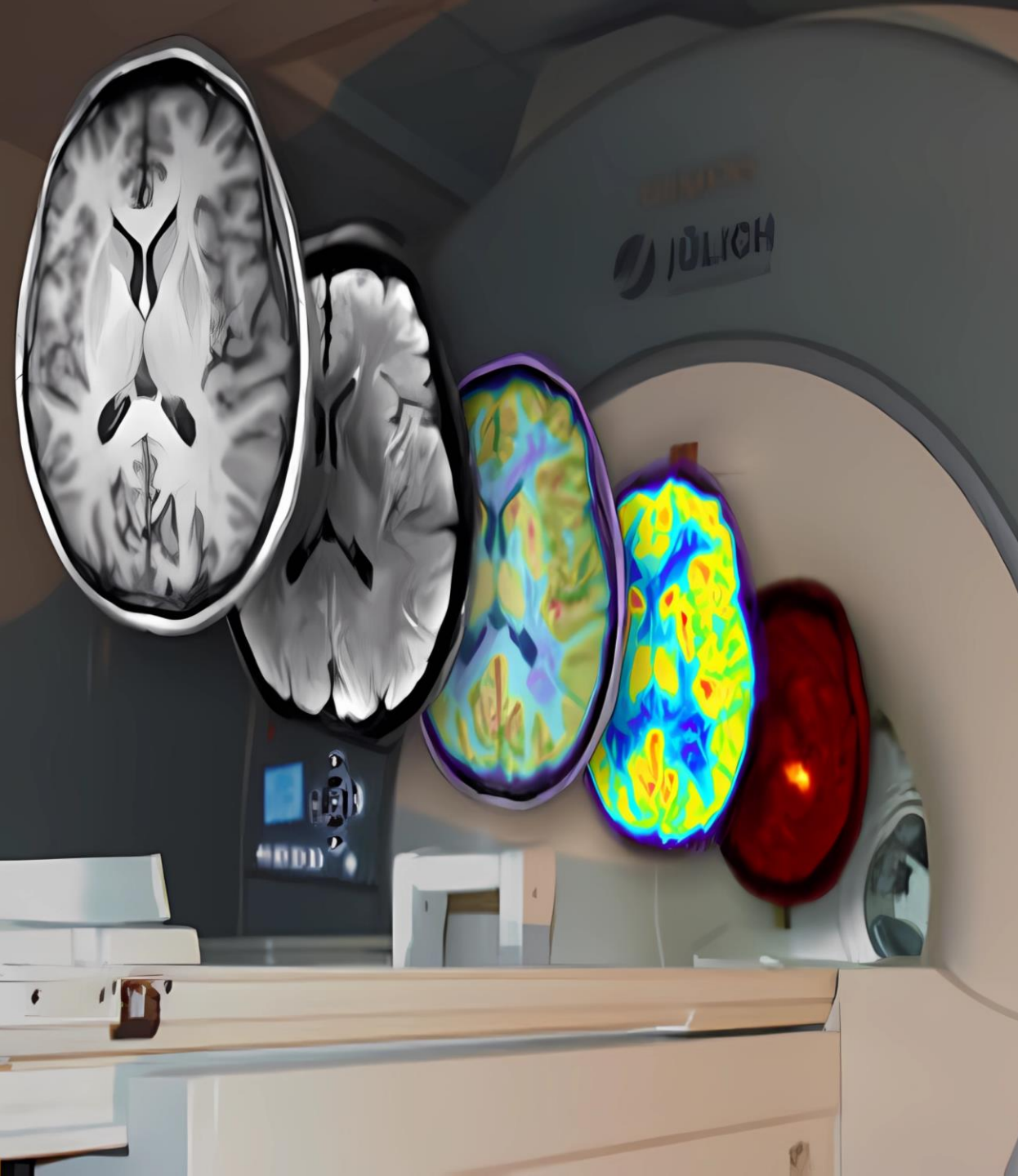If you have any questions, don't hesitate to email us! educo@utu.fi
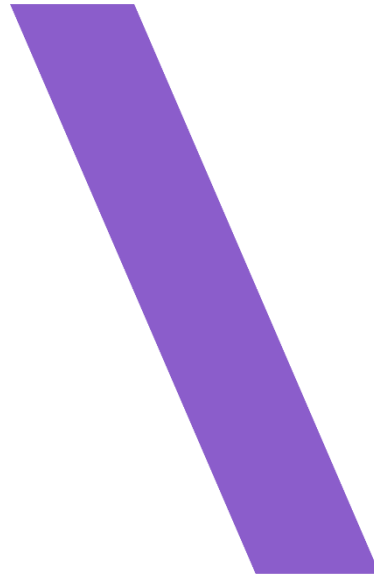
Students

University of Turku is looking for academically inclined, motivated and independent students.

Students who are the best, fit for our programmes.

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Research in Turku

Research Focuses in Turku

Translational Neuroscience

- Music in neurological rehabilitation
- Speech & language pathology
- Brain stimulation

Genetics in Neuroscience

- Epigenomics
- Epigenetics of child development

Cognitive & Behavioural Neuroscience

- Dreaming & consciousness
- Functional mechanisms of human emotion
- Measuring cognitive functions with videogames and eyetracking
- Memory & executive functions
- Sleep

Clinical Neuroscience

- Addiction
- Alzheimer's Disease
- Epilepsy
- Multiple Sclerosis
- Movement disorders
- TBI
- Psychotic Disorders
- Depression

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tbmc.fi
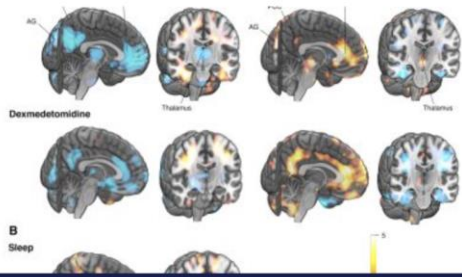
Anesthesiology

Basic & Translational Neuroscience

Neurology

Neurosurgery

Clinical Neurophysiology

Cognitive Psychology

Psychiatry

Speech-Language Pathology

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MS Epidemiology

Merja Soilu-Hänninen

Neurofibromatosis Research Consortium

Juha Peltonen, Sirkku Peltonen

Neuroinflammation Research Group

Laura Airas

Neuromuscular Disorders

Manu Jokela

Sleep & Cognition Research Group

Päivi Polo

Sleep Disorders & Sleep in Menopausal Women

Tarja Saaresranta

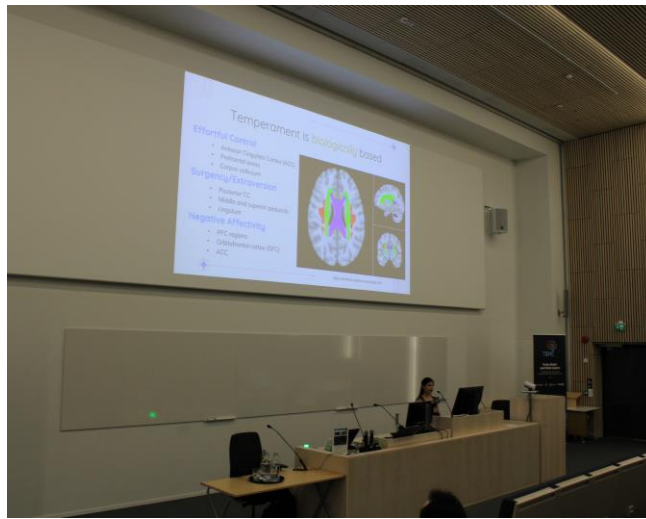# What to do after the programme?

PhD

Research assistant

Private companies

Other

Events

Symposium

- Students present their theses

- They can choose a slide-show or poster format

Labs presentations

- Researchers from different labs come and present their topics to our students

Feedback session (EduCo)

- EduCo organizes a feedback session at the end of every semester so students can give feedback to each course

- Professors are also invited

- EduCo collects the feedback and makes a report, which is sent to the person in charge of every course

Networking event

Movie nights

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Questions?

Who am I?

- BSc in Psychology with Neuropsychology, Bangor University (UK)

- MDP in Human Neuroscience

- Doctoral Researcher at the FinnBrain Birth Cohort Study
  - Emotional development
  - fMRI

- Passion projects:
  - MDPHN Educational Committee Member
  - International Student Ambassador

Hilyah Audah

Who am I?

- BSc in Psychology with Business Psychology, Leuphana University (GER)

- MDP in Human Neuroscience

- HUNE tutor

- Aspiring Neuroscience PhD & lecturer

Leonard Klar

Outline

- What do we learn?
- Teaching
- Thesis
- Challenges and Tips
- Work-Life-Balance
- Networking

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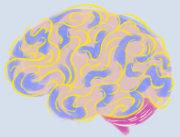
What do we learn?

- The brain throughout the lifespan
    - Brain growth and development
    - Mechanisms in the brain
    - Brain and Body
    - Diseases & Disorders
    - Treatments
- Hands-on practicals and tutorials
    - Behavioural methods
    - Clinical neurophysiology
    - Neuroimaging methods (fMRI, DTI, EEG, TMS, etc)
    - Neuroimaging data processing
- Research!

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Elective Courses Clusters

MDP for Human Neuroscience

ELECTIVES

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- Nutrition and Brain
- Acquisition and Analysis of Biosignals

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COMPUTER SCIENCE

- Data Structures and Algorithms
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- Beginner Data Analysis with Python for Human Neuroscience

COMPUTATIONAL NEUROSCIENCE

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- Signal and Image processing
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- Topics in Philosophy of Mind
- Neuroscientific approach to artistic and practical subjects (summer course at the University of Helsinki)

*These clusters are suggestions and are not official minors
Made by:

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EduCo

TBMC Turku Brain & Mind Center

Teaching

- Professors from a range of backgrounds and interests

- TMBC is an umbrella unit comprising of research groups from UTU and Åbo Akademi with ties to Turku University Hospital (TYKS)

- TBMC is part of the Network of European Neuroscience Schools (NENS)

- Neurocenter Finland
    - Turku Brain and Mind

Thesis: What are *you* interested in?

Joonas Karhula: Association between cognition and cortisol in peri- and postmenopausal women

Hilyatushalihah Kholis Audah: Neural Networks in Early Fear Bias Development: A Study of Infants

Asuka Toyofuku: Effortful Control is associated with white matter integrity in 5-year-old

Daniel Suchy: EEG correlates of awareness of vocal errors in self-produced speech

Zoe Pallaris: The Relationship Between Personality and the Perception of the Ambiguous Necker Cube Stimulus

Alli Pätynen: Is mind-wandering detrimental? Ecological momentary assessment study on the effects of psychological well-being, meditation, and psychedelics on mind-wandering

Ashmeet Jolly: Predicting Speech Disfluency in Five-Year-Olds using Gray Matter Volume

Matilda Kuusi: Microglial Activation in Individuals with post-COVID-19 Condition Experiencing Neurological Symptoms

Aleksandra Nikolaeva: Effects of medical cannabis compared to opioids on pain experience in patients with chronic pain

Tenzing Dolmas: An Eye for AI: A Multimodal Bottleneck Transformer Approach for Predicting Individual Eye Movements

Niina Chaar: Microglial Activation in Individuals with post-COVID-19 Condition Experiencing Neurological Symptoms

Sampo Tanskanen: EEG correlates of auditory awareness in level of processing

Lilja Parkkali: Associations between adverse life events and brain type 1 endocannabinoid receptor availability

Mariia Shibanova: White Matter Abnormalities in Cervical Dystonia: A TBSS-Based Comparative Analysis and Examination of Clinical Correlates

Ida Steinweg: Structural Connectivity Analysis of Stroke Lesions Causing Hemiparesis

Myrthe Tileman: Towards bidirectional lower limb prostheses: restoring proprioception using EMG based vibrotactile feedback

Claudia Tato Fernández: Effect of APOE Gene on White Matter Integrity: A DTI Study in Healthy Elderly Adults

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Turku
Brain & Mind
Center

Challenges

1. Some courses are really hard, and some are quite easy.
2. Completely new subjects, or familiar ones.
3. Some courses are entirely self-taught.
4. Coding skills are not required, but basic knowledge is recommended.
5. (Finnish winter)

Tips

1. Consult with the education manager for RPL
   - Study groups
   - Plan ahead

2. Read through the guidelines before you start looking for a supervisor.
   - When approaching research groups, ask what is expected of you/of the project

3. Try to do your electives in the first year
   - Start your thesis work through a summer internship/ start in August after your first year.
4. Socialize early (Tutors will help)

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Work-life Balance

- Treating your studies like a job
  - 9-5, weekends off
- Plan ahead
- Its ok to say no to your supervisor :')
- Schedule fun in your calendar too!
- Many student organizations
- Campus Sport
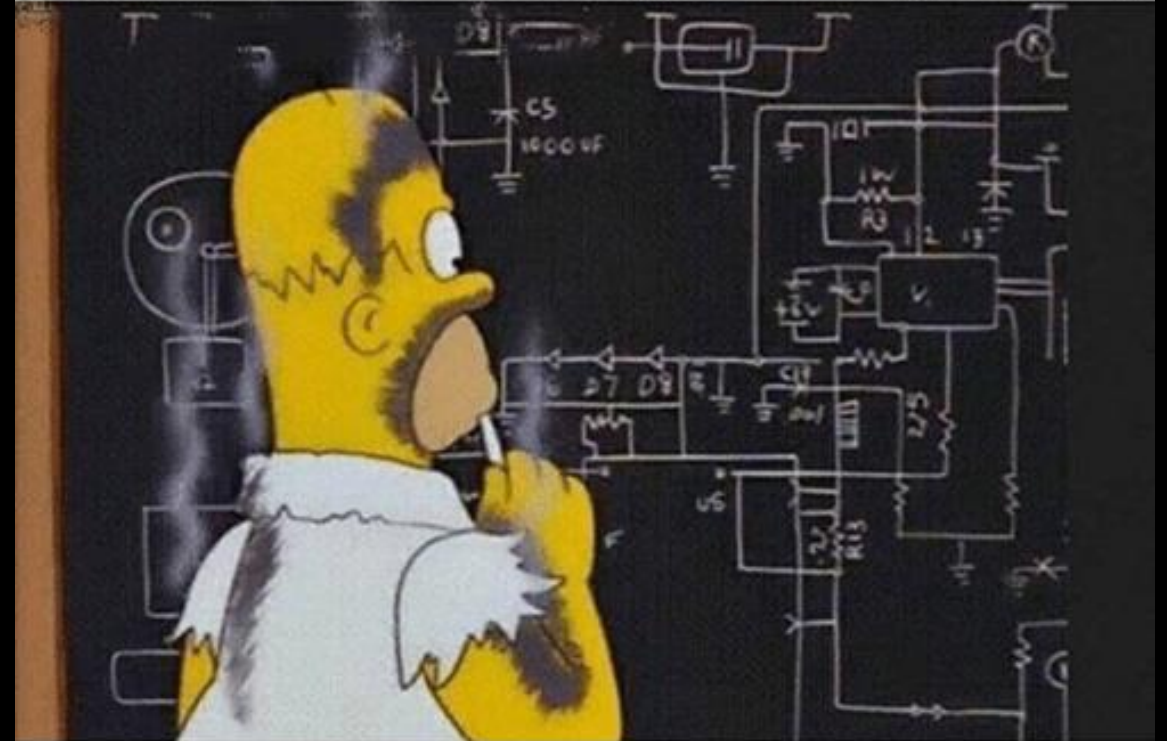
Networking

- TBMC Networking Event
- TBMC Movie nights
- Brain Breaks by Neurocenter Finland
- EduCo Feedback Events
- Human Neuroscience Symposium
- Study and Stay in Turku
- Business Finland

Questions?

Thank you!