Research Master Cognitive and Clinical Neuroscience Specialisation Fundamental Neuroscience

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First year courses

Research Master Specialisation Fundamental Neuroscience Year 1

Faculty of Psychology and Neuroscience

Colloquia

Full course description

Colloquia are presented per specialisation (CN, NE, FN, NP and PP) by senior researchers from the UM faculties or visiting guest lecturers. Each colloquium focuses in depth on one of a wide range of topics, with issues transcending the courses and specialisations. Each colloquium lecture will be followed by active discussion, prepared and chaired by the lecturer (the UM host may fill this role for guest lecturers). A total of ten colloquia will be offered during the first year.

Course objectives

Knowledge of: Key research domains from different specialisations, interdisciplinary research, interacting with students from different specialisations.
PSY4100
Period 3
9 Jan 2023
7 Jul 2023
[Print course description](#)
ECTS credits:
1.0
Instruction language:
English
Coordinator:

- [R. Schreiber](#)

Teaching methods:
Lecture(s)
Assessment methods:
Attendance
Keywords:
Interdisciplinary knowledge.
Faculty of Psychology and Neuroscience

Introduction to Psychology

Full course description

In this course students acquire an overview of human cognitive psychology. A selected number of psychological themes are covered, surveying knowledge on how humans act and interact, how they differ from each other, how they reason and speak and how they 'know' things. The course focuses on 'normal' human performance, but malfunction and psychopathology are also covered. The major emphasis of the course is on understanding human behaviour by means of cognitive, non-biological theories and paradigms.

Course objectives

Knowledge of: Social psychology, motivation, perception, personality, behaviour, consciousness, psychological assessment, cognitive psychology.

Prerequisites

This introductory course is required for students with a biological background. The parallel course PSY4311 is required for students with a psychological background. Thus, students enroll in either PSY4311 or PSY4312. The course coordinators of both courses evaluate which of the two courses a student is required to take.

Recommended reading

Journal articles, book chapters.

PSY4312
Period 1
5 Sep 2022
28 Oct 2022
[Print course description](#)
ECTS credits:
5.0
Instruction language:
English
Coordinator:

- [E.L. Theunissen](#)

Teaching methods:
Lecture(s), Assignment(s), Paper(s), PBL, Presentation(s)
Assessment methods:
Attendance, Final paper, Participation
Keywords:
Introduction, behaviour, cognition, psychology
Faculty of Psychology and Neuroscience

Practical Training: Cell Culture

Research Master Cognitive and Clinical Neuroscience Specialisation Fundamental Neuroscience

Full course description

During this practical session, students acquire skills in cell culturing. To this end, a murine cell line will be used to assess toxicity of materials used as treatments of neuropathic conditions. Moreover, demonstrations about animal models of pain, and behavioral tests to assess pain, are presented to students. Each student analyses data collected during the practical session and produces a short written report.

Course objectives

Knowledge of: Cell culture, animal models of pain, behavioural tests for pain assessment.

PSY4346
Period 4
6 Feb 2023
7 Apr 2023
Print course description
ECTS credits:
0.0
Instruction language:
English
Coordinator:

- R.J.M. Riemens

Teaching methods:
Presentation(s), Skills, Training(s)
Assessment methods:
Attendance
Keywords:
cell culture, pain models, pain assessment
Faculty of Psychology and Neuroscience

Practical Training: Genotyping Your NMDA Receptor

Full course description

Students isolate their own DNA and use this in a restriction fragment polymorphism assay to analyse their individual NMDA genotype. The data is discussed in groups in the light of seizure susceptibility based on journal articles.

Course objectives

Knowledge of: Genotyping, data analysis.

PSY4347
Period 3
9 Jan 2023
3 Feb 2023
Print course description

Research Master Cognitive and Clinical Neuroscience Specialisation Fundamental Neuroscience

ECTS credits:
0.0
Instruction language:
English
Coordinator:

- [G. Hoogland](#)

Teaching methods:
Research
Assessment methods:
Attendance, Participation
Keywords:
Genotyping, polymorphism, NMDA receptor.
Faculty of Psychology and Neuroscience

Practical Training: Neuroinflammation

Full course description

Students participate in a neuroinflammation practical which will be based on ongoing experimental Research in the School for Mental health and Neuroscience

Course objectives

Knowledge of: Neuroinflammation markers, biochemical assays and data analysis.

PSY4349
Period 4
6 Feb 2023
7 Apr 2023
[Print course description](#)
ECTS credits:
0.0
Instruction language:
English
Coordinator:

- [M.R. Losen](#)

Teaching methods:
Research
Assessment methods:
Attendance, Final paper
Keywords:
neuroinflammation, ELISA, FACS, Cell culture
Faculty of Psychology and Neuroscience

Advanced Statistics I

Full course description

The course consists of six units. In the first four units, participants will be given an in-depth training in the following standard statistical methods: factorial ANOVA for between-subject designs, analysis of covariance (ANCOVA), multivariate ANOVA (MANOVA), discriminant analysis and multiple linear regression. Students are assumed to have background knowledge of balanced two-way factorial ANOVA and multiple regression. These methods will be briefly reviewed. The following advanced topics will then be covered: unbalanced factorial designs, contrast analysis, interaction, simple slope analysis, dummy coding, centring covariates, different coding schemes, collinearity and residuals checks and data transformation. The distinction between confounders and mediators in regression and ANCOVA is also discussed, forming a bridge from regression to structural equations modelling (SEM). The latter is an advanced multivariate method that is gaining importance in psychology but still requires special software (such as Lisrel, EQS, AMOS or Mplus). SEM is introduced in two units, starting with causal modelling and mediation analysis in cross-sectional research and then extending to longitudinal research and latent variables (factors). Special attention is given to identifying models, model equivalence, global and local goodness of fit indices, parsimony, model modification and cross- validation. Some concepts from matrix algebra are needed for SEM, and these will be briefly discussed without going into technical detail.

Course objectives

Knowledge of: Oneway analysis of variance, contrast analysis, unbalanced designs, multivariate analysis of variance, discriminant analysis, linear regression with interaction terms, linear regression with dummy variables, data transformations, simple slope analysis, analysis of covariance, path analysis, structural equation modeling, confirmatory factor analysis, structural models with latent variables.

Recommended reading

Diamantopoulos, A. (1994). Modelling with LISREL: A guide for the uninitiated. Journal of Marketing Management, 10, 105-136; Field, A. (2009). Discovering statistics using SPSS (3rd ed.). London: Sage; Howell, D.C. (2007). Statistical methods for psychology (6th ed.). Belmont (CA): Thomson/ Wadsworth; Kleinbaum, D.G., Kupper, L.L., Muller, K.E., & Nizam, A. (1998). Applied regression analysis and other multivariable methods (3rd ed.). Pacific Grove (CA): Brooks/Cole.

PSY4106
Period 1
5 Sep 2022
23 Dec 2022
Print course description
ECTS credits:
3.0
Instruction language:
English
Coordinator:

- J. Schepers

Teaching methods:
Assignment(s), Lecture(s), Skills, Training(s)
Assessment methods:
Attendance, Written exam
Keywords:
Univariate analysis of variance, multivariatie analysis of variance, regression analysis, structural equation modeling.
Faculty of Psychology and Neuroscience

Biopsychological Neuroscience

Full course description

This course provides an in-depth description of biopsychological concepts that are relevant to the field of neuroscience. It covers elements from functional neuroanatomy, neurophysiology and psychopharmacology, as applied to brain and behaviour research. Major emphasis will be placed on the macro- and microanatomy of the brain and on molecular, i.e. neurochemical and neurobiological, mechanisms related to neurotransmission, hormones and drug action. With respect to 'function', a detailed description is given of processes underlying sexual behaviour, affective behaviour, motivated behaviour and cognitive processes. The course also encompasses practical training in a neuropsychological experiment in which students participate to investigate the link between biology and psychology. Each student analyses the data collected during the experiment and makes a poster of the results.

Course objectives

Knowledge of: Biology underlying fundamental psychological processes.

Recommended reading

Papers from scientific journals and book chapters from books are provided.

PSY4315
Period 2
31 Oct 2022
23 Dec 2022
[Print course description](#)
ECTS credits:
4.0
Instruction language:
English
Coordinator:

- [J.H.H.J. Prickaerts](#)

Teaching methods:
Assignment(s), Paper(s), PBL, Presentation(s), Skills
Assessment methods:
Attendance, Final paper, Presentation
Keywords:

Research Master Cognitive and Clinical Neuroscience Specialisation Fundamental Neuroscience
neurotransmitters, hormones, signal transduction, Memory, affect, Motivation
Faculty of Psychology and Neuroscience

Neuroanatomy

Full course description

It is essential to have a basic knowledge of the brain anatomy when working in the field of molecular neuroscience. The aim of the course is to acquaint students with the neuroanatomical terminology and provide insight into the spatial and functional organisation of the brain.. Many specific brain areas can be linked to particular functions. Thus, knowledge of the brain anatomy and its main functions allows direct linkage of specific neurological or psychiatric disorders to particular brain areas. In addition, various other methods of modern brain imaging (both in vivo and ex vivo) are discussed. The course also encompasses some practical training in which students participate in different practicals to study human, sheep and rat macro and micro brain anatomy.

Course objectives

Knowledge of: Basic human neuroanatomy, brain imaging, microglia and macroglia, neurons, blood brain barrier, ventricular system, brain vasculature, immunohistochemistry.

Recommended reading

Journal articles, book chapters.

PSY4313
Period 1
5 Sep 2022
28 Oct 2022
[Print course description](#)
ECTS credits:
4.0
Instruction language:
English
Coordinator:

- [J.M. Mey](#)

Teaching methods:
Assignment(s), Lecture(s), PBL, Skills, Training(s)
Assessment methods:
Attendance, Written exam
Keywords:
Neuroanatomy, glia, neurons, blood brain barrier, ventricular system, immunohistochemistry
Faculty of Psychology and Neuroscience

Neuroplasticity and Pain

Research Master Cognitive and Clinical Neuroscience Specialisation Fundamental Neuroscience

Full course description

Acute (physiological) nociceptive pain is protective and helps us to deal with potentially threatening or damaging environmental stimuli. However, pain is not always considered adaptive and beneficial to our survival. Pain can become chronic and can also become very resistant to pain medicine in the present drug arsenal. Finding out which molecular and cellular mechanisms are involved in the transition from acute to chronic pain and/or the ability to mediate chronic pain itself is expected to result in an improved pain management as it allows for mechanism-based treatment approaches. This course covers the basic understanding of nociceptive signalling. Moreover, it will be discussed how nociception can be modulated. Conditions of pain amplification will be then be discussed with particular attention to neuropathic pain and post-surgical pain. Peripheral and central sensitization will be discussed as processes of molecular neuroplasticity, which lays the foundation for amplification of nociceptive signalling under pathological conditions. In the last decade it has become clear that neuroinflammation and particularly the activation of non-neuronal cells such as central glia (microglia and astrocytes) contribute largely to amplification of pain (e.g. chronic pain) during such pathological conditions. Glial activation, via release of pro-inflammatory factors and other neuroactive mediators, is an important contributor to neuroplasticity and includes central sensitization. A better understanding of processes of neuroinflammation and neuroplasticity in conditions of chronic pain are thought to aid in development of novel, more effective pain therapies. This course is subdivided into three parts. The first part focuses on nociceptive and inflammatory pain, discussing processes of neuroplasticity and pain, with special attention paid to the cellular and molecular nature of peripheral and central sensitization. The second part covers chronic pain conditions and underlying cellular and molecular mechanisms. The third part aims to integrate the knowledge obtained in the first two parts of the course in a translational way (bench-to-bedside-and-back-to-bench approach).

Course objectives

Knowledge of: Nerve injury and neuroinflammation, cellular and molecular pain mechanisms, cellular and molecular plasticity, peripheral and central sensitization, pain management, cell culture techniques, translational research.

Recommended reading

Journal articles, book chapters.

PSY4336
Period 4
6 Feb 2023
7 Apr 2023
[Print course description](#)
ECTS credits:
5.0
Instruction language:
English
Coordinator:

- [E.A.J. Joosten](#)

Teaching methods:
Assignment(s), Lecture(s), Paper(s), PBL, Presentation(s), Skills, Training(s)

Research Master Cognitive and Clinical Neuroscience Specialisation Fundamental Neuroscience

Assessment methods:
Attendance, Final paper, Presentation
Keywords:
pain conditions, cellular and molecular neuroplasticity, neuroinflammation, translational research
Faculty of Psychology and Neuroscience

Practical Training: Mammalian Macro- and Microscopical Neuroanatomy

Full course description

Students participate in different practical training sessions to study human, sheep and rat macro and micro brain anatomy. Practical training 1: Students study human brain anatomy macroscopically using plastic brain models and plastinated human brains; Practical training 2: Students dissect a sheep brain and study mammalian brain anatomy. Special attention is paid to the limbic system and the basal ganglia; Practical training 3: Students stain rat brain slices using histochemistry and multi-colour fluorescent labelling with antibodies. Afterwards, these slices are studied microscopically to gain insight in the rat brain anatomy at a cellular level.

Course objectives

Knowledge of: Human neuroanatomy, sheep neuroanatomy, rat neuroanatomy, microscopy, immunohistochemical staining techniques

Recommended reading

Book chapters.

PSY4344
Period 1
5 Sep 2022
28 Oct 2022
[Print course description](#)
ECTS credits:
0.0
Instruction language:
English
Coordinator:

- [J.M. Mey](#)

Teaching methods:
Skills, Training(s)
Assessment methods:
Attendance
Keywords:
Neuroanatomy, immunohistochemistry, human, rat, sheep
Faculty of Psychology and Neuroscience

Psychiatric Epidemiology

Full course description

The course will provide an introduction to the methodologies and analytical strategies of epidemiology as applied to mental health outcomes. The principles and practice of various study types (cohort, case-control, RCT, ecological) will be taught, with emphasis on interpreting associations and possible causality thereof. Consideration will be given to such issues as confounding, bias, and moderation. Further topics to be covered include the use and interpretation of diagnostic studies, the basic principles of analysing dichotomous and time-to-event outcomes, and the use of systematic reviews and meta-analysis for building cumulative knowledge.

Course objectives

Knowledge of: Different epidemiological study types, including their purpose, advantages, and disadvantages; calculation and interpretation of effect size and outcome measures for dichotomous and time-to-event outcomes; principles of analysing epidemiological studies; the basic steps of conducting a systematic review and meta-analysis.

Recommended reading

Rothman, K. J., Greenland, S., & Lash, T. L. (2012). Modern epidemiology (3rd ed.). Lippincott Williams & Wilkins.

PSY4371
Period 6
12 Jun 2023
7 Jul 2023
[Print course description](#)
ECTS credits:
1.0
Instruction language:
English
Coordinator:

- [W. Viechtbauer](#)

Teaching methods:
Assignment(s), Lecture(s), PBL, Skills, Training(s), Work in subgroups
Assessment methods:
Attendance, Final paper
Keywords:
Epidemiology, Methodology, statistics, experimental studies, observational studies, diagnostic studies, systematic reviews, meta-analysis
Faculty of Psychology and Neuroscience

Introduction in Genetics

PSY4340

Research Master Cognitive and Clinical Neuroscience Specialisation Fundamental Neuroscience

Period 1
5 Sep 2022
28 Oct 2022
[Print course description](#)
ECTS credits:
1.0
Instruction language:
English
Coordinator:

- [G.R.L. Kenis](#)

Faculty of Psychology and Neuroscience

Neurodegeneration

Full course description

This course provides an in-depth description of neurodegenerative processes that occur during the development of neurodegenerative diseases such as Alzheimer's disease, Parkinson's disease and Huntington's disease, which are some of the most debilitating disorders that a person can have. Although clinical manifestations of these neurodegenerative diseases are different, they share common features in neuropathology and in the underlying molecular mechanisms. Since they share inclusions (e.g. plaques and tangles) with accumulations of aberrant proteins, the modern terminology for these diseases is conformational diseases. The aim of this course is to gain insight into the mechanisms of neurodegenerative processes, such as the deposition of aggregated proteins, the loss of neurons and synapses, alterations in neurogenesis and inflammatory processes, alterations in metabolic/oxidative state and discussion over whether these are the cause or consequence of the disease. Moreover, this course covers the influences of genetic and environmental factors on disease progression and strategies for therapy. Major emphasis is on the molecular, i.e. the neurochemical and neurobiological mechanisms that affect disease progression. Transgenic animal models as well as brain cell cultures are used to study these.

Course objectives

Knowledge of: Tauopathies: Alzheimer's disease (AD), Frontal tempolar dementia, Progressive supranuclear palsy, Pick's disease, Argyrophilic grain disease, Synucleinopathies: Parkinson disease, Multisystem atrophy. Polyglutamine diseases: Huntington, and Spinocerebellar ataxias. Mixed pathogies; Diffuse Lewy body disease, Number of affected persons; World wide, USA and The Netherlands, early and late onset AD, Aging, Amyloid beta cascade hypothesis, amyloid precursor protein, Presenelin 1 and 2, Tau, ubiquitin, ApoE polymorphism, risk factors, oxidative stress, loss of synapses, energy metabolism, plaques, tangles, neuronal loss, gliosis, cytoarchitecture of hippocampus and neocortex.

Prerequisites

Laboratory skills are recommended

Recommended reading

• Van Leeuwen et al., Frameshift mutants of amyloid precursor protein and ubiquitin-B are prominent in Alzheimer and Down patients. Science 279, 242-247, 1998 • Irmler, M., et al., Long-term proteasomal inhibition in transgenic mice by UBB+1 expression results in dysfunction of central respiration control reminiscent of brainstem neuropathology in Alzheimer patients, Acta Neuropathologica, 124, 197-197, 2012 • Mucke, L., and Selkoe D.J. Neurotoxicity of Amyloid β-protein: Synaptic and Network Dysfunction, Cold Spring Harbor Perspectives in Medicine 1-17, 2012

PSY4314
Period 2
31 Oct 2022
23 Dec 2022
[Print course description](#)
ECTS credits:
4.0
Instruction language:
English
Coordinator:

- [T. Vanmierlo](#)

Teaching methods:
Assignment(s), Lecture(s), Presentation(s), Research, Skills, Training(s), Work in subgroups, PBL
Assessment methods:
Attendance, Presentation, Written exam
Keywords:
Tauopathies (e.g. Alzheimer's), synucleinopathies (e.g. Parkinson), polyglutamine diseases (Huntington), neurodegenerative mechanisms
Faculty of Psychology and Neuroscience

Surgery for Intractable Movement and Psychiatric Disorders

Full course description

The aim of this course is to guide the participants through the first key steps of neuroscience experiments related to movement and psychiatric disorders. Students receive relevant knowledge via lectures and will have the opportunity to practically apply this in a hands-on setting. Students are also shown stereotactic surgery that is used to selectively lesion brain areas, to chronically infuse drugs into brain areas and to deep brain stimulate and electrophysiologically record from brain areas. Also, there are demonstrations and discussions on behavioral tests used to study the functional consequences of the neurosurgical interventions.

Course objectives

Knowledge of: Stereotactic surgery for movement and psychiatric disorders.

PSY4332
Period 3
9 Jan 2023

Research Master Cognitive and Clinical Neuroscience Specialisation Fundamental Neuroscience

3 Feb 2023
[Print course description](#)
ECTS credits:
1.0
Instruction language:
English
Coordinator:

- [A. Jahanshahianvar](#)

Teaching methods:
Lecture(s), Research
Assessment methods:
Attendance, Written exam
Keywords:
Stereotactic surgery, brain lesions, deep brain stimulation, drugs, electrophysiology
Faculty of Psychology and Neuroscience

Introduction to Molecular Biochemical Techniques

Full course description

This course focuses on fundamental biological concepts including cellular organisation, DNA, RNA and proteins. Additionally, this course provides students with a conceptual understanding of the most important concepts in molecular neuroscience. Students are made familiar with selected aspects of molecular biology that provide the non-specialist with the principles for understanding the structure and functional relationships of molecular biology techniques.

Course objectives

Knowledge of: Cell biology, molecular biology, biochemistry, regulation of gene and protein transcription, research methods in molecular cell biology and vocabulary (e.g. scientific and technical words). Skills: acquisition of basic laboratory techniques, including preparation of buffers, working under sterile conditions, pipetting, pH titration, a protein assay (standard curve), RNA extraction and DNA isolation conventional PCR and Western blot, literature search, preparation of oral presentations, goal oriented group discussion of research problems.

Prerequisites

This introductory course is required for students with a psychological background. The parallel course PSY4312 is required for students with a biological background. Thus, students enroll in either PSY4311 or PSY4312. The course coordinators of both courses evaluate which of the two courses a student is required to take.

Recommended reading

DNA Science: a first edition (2nd ed.). New York: CSHL press.

PSY4311

Research Master Cognitive and Clinical Neuroscience Specialisation Fundamental Neuroscience

Period 1
5 Sep 2022
28 Oct 2022
[Print course description](#)
ECTS credits:
5.0
Instruction language:
English
Coordinator:

- [G.R.L. Kenis](#)

Teaching methods:
Lecture(s), Paper(s), Presentation(s), Research, Skills
Assessment methods:
Attendance, Presentation, Written exam
Keywords:
RNA, DNA, protein, ELISA, RIA, PCR, Western blot
Faculty of Psychology and Neuroscience

Practical Training: Neuropsychological Experiment

Full course description

Students participate in a neuropsychological experiment investigating the link between biology and psychology. Each student analyses the data collected during the experiment and make a poster on the results.

Course objectives

Knowledge of: Neuropsychological experiment, data analysis, making poster.

PSY4343
Period 2
31 Oct 2022
23 Dec 2022
[Print course description](#)
ECTS credits:
0.0
Instruction language:
English
Coordinator:

- [J.H.H.J. Prickaerts](#)

Teaching methods:
Research
Assessment methods:
Attendance, Participation
Keywords:
neuropsychological experiment, poster

Faculty of Psychology and Neuroscience

Biomedical Brain Imaging

PSY4832
Period 4
6 Feb 2023
7 Apr 2023
Print course description
ECTS credits:
3.0
Instruction language:
English
Coordinator:

- D.M.J. Hernaus

Faculty of Psychology and Neuroscience

Practical Training: Measuring Cognitive Functions

PSY4353
Period 1
5 Sep 2022
28 Oct 2022
Print course description
ECTS credits:
0.0
Instruction language:
English
Coordinator:

- N.R.P.W. Hutten

Faculty of Psychology and Neuroscience

Advanced Statistics II

Full course description

The course consists of seven units. The first three units cover classical repeated measures ANOVA for the one- and two-way within-subject design and the split-plot (between x within) design. Special attention is given to: a) the choice between multivariate and univariate data formats and method of analysis, and the sphericity assumption; b) the distinction between the within-subjects and between-subjects part of a split-plot ANOVA, and how to obtain both using regression analysis; c) the surprising consequences of including covariates into repeated measures ANOVA; and d) the choice between different methods of analysis for randomised versus non-randomised group comparisons. Subsequently, a further three units are devoted to mixed (multilevel) regression for nested designs and longitudinal studies. This mixed regression starts with a unit on marginal models for repeated measures as an alternative to repeated measures ANOVA in cases of missing data or within-subject covariates. Students are shown the pros and cons of various models for the correlational structure of

repeated measures, such as compound symmetry and AR1. The second unit covers the random intercept model for repeated measures as a method to include individual effects in marginal models for longitudinal data (growth curves) or single trial analyses of lab data (response times, ERP, fMRI). Students learn how this can be combined with e.g. ARMA modelling to distinguish between interpersonal and intrapersonal outcome variation. The random intercept model will also be applied to a cluster randomised trial, i.e. an RCT where organisations like schools or companies instead of individuals are randomised. The third and last unit on mixed regression covers random slope models for longitudinal data (individual differences in change over time), single trial analysis (individual differences in stimulus effects) and multicentre trials (RCT within each of a number of organisations). Finally, the topic of optimal design, sample size and power calculations is introduced in a seventh unit.

Course objectives

Knowledge of: Repeated measures ANOVA for within-subject and split-plot (between x within) designs, including factorial designs and covariates in repeated measures ANOVA; Mixed (multilevel) linear regression with random effects and autocorrelation; Optimal design and sample size calculations for experimental and observational studies.

Prerequisites

Good understanding of descriptive and inferential statistics at the elementary and intermediate level, including t-tests, factorial ANOVA and multiple linear regression. Skilled in the use of SPSS for statistical data analyses.

Recommended reading

Lecture handouts and a suitable book chapter or article per unit.

PSY4107
Period 4
6 Feb 2023
9 Jun 2023
[Print course description](#)
ECTS credits:
3.0
Instruction language:
English
Coordinator:

- [G.J.P. van Breukelen](#)

Teaching methods:
Assignment(s), Lecture(s), Training(s)
Assessment methods:
Attendance, Written exam
Keywords:
Within-subject designs, repeated measures ANOVA, mixed (multilevel) regression, marginal versus random effects models, optimal design, sample size, power.
Faculty of Psychology and Neuroscience

Research Master Cognitive and Clinical Neuroscience Specialisation Fundamental Neuroscience

Practical Training: SPSS II

Full course description

This practical training forms part of the PSY4107 Advanced Statistics II course. The practical consists of six sessions in the computer rooms in which SPSS procedures for repeated measures and multilevel data are practised. The goal is to understand how proper analyses of such data can be done using SPSS.

Course objectives

Knowledge of: How to run with SPSS: repeated measures ANOVA for within-subject and split-plot (between x within) designs, including factorial designs and covariates; How to run SPSS for: mixed (multilevel) linear regression with random effects and autocorrelation.

Prerequisites

Good understanding of descriptive and inferential statistics at the elementary and intermediate level, including t-tests, factorial ANOVA and multiple linear regression. Skilled in the use of SPSS for statistical data analyses.

Recommended reading

Field A (2009). Discovering statistics with SPSS (3rd ed.). London: Sage;

The mandatory assignments on EleUM.

PSY4117
Period 4
6 Feb 2023
9 Jun 2023
Print course description
ECTS credits:
0.0
Instruction language:
English
Coordinator:

- G.J.P. van Breukelen

Teaching methods:
Training(s)
Assessment methods:
Attendance
Keywords:
Within-subject designs, repeated measures ANOVA, mixed (multilevel) regression, marginal versus random effects models.
Faculty of Psychology and Neuroscience

Research Master Cognitive and Clinical Neuroscience Specialisation Fundamental Neuroscience

Practical Training: Genes and Proteins

Full course description

This practical training provides students with a practical understanding of the most important techniques in molecular neuroscience. Students are made familiar with selected aspects of molecular biology that provide the non-specialist with the principles for understanding the structure and functional relationships of molecular biology techniques This includes basic laboratory techniques such as pipetting, pH titration and a protein assay. Specific techniques performed in the lab are RNA isolation and analysis, copy DNA synthesis and quantitative PCR.

Course objectives

Knowledge of: Standard techniques in molecular research laboratories

Prerequisites

Read carefully the mandatory literature listed below

Recommended reading

Lodish, H. et al., Molecular Cell Biology;

Alberts, B. et al., Essential Cell Biology.

In both books the chapters and panels on protein separation and analysis and on gene expression analysis.

PSY4341
Period 1
5 Sep 2022
28 Oct 2022
[Print course description](#)
ECTS credits:
0.0
Instruction language:
English
Coordinator:

- [G.R.L. Kenis](#)

Teaching methods:
Paper(s), Research, Skills, Training(s), Work in subgroups
Assessment methods:
Attendance, Final paper, Written exam
Keywords:
General laboratory techniques, RNA, DNA isolation, protein purification, ELISA, PCR/ RT-PCR, Western blot
Faculty of Psychology and Neuroscience

Practical Training: SPSS I and Lisrel

Full course description

In order to make practical use of the statistical models that form the topic of the Advanced Statistics course, researchers must make use of statistical software. This course will utilise the traditional SPSS program, but also the specialised LISREL software. LISREL is a statistical program that allows structural equations models to be tested.

Course objectives

Defining contrasts, building regression models, doing multivariate analyses, transforming data, testing simple slopes, creating and testing SEM models

Recommended reading

Handouts given during practicals.

PSY4119
Period 1
5 Sep 2022
23 Dec 2022
[Print course description](#)
ECTS credits:
0.0
Instruction language:
English
Coordinator:

- [J. Schepers](#)

Teaching methods:
Assignment(s), Training(s)
Assessment methods:
Attendance
Keywords:
SPSS, LISREL, statistical software.
Faculty of Psychology and Neuroscience

Neurological Neuroscience

Full course description

Neurological disorders such as epilepsy and movement disorders (e.g. Parkinson's disease, Huntington's disease) arise from a primary structural/molecular lesion (e.g. trauma, disrupted brain development, gene defect) followed by a chronic process of neuronal network reorganisation. Once this process has reached a critical stage the patient will manifest clinically observable symptoms. Though drug therapy is the first choice in treating patients with neurological disorders, this introduces side effects and pharmacoresistance in a considerable number of patients. Hence,

alternative treatment options are explored, some of which are established and some which are still in an experimental stage. Surgical treatment strategies aim at restoring the function of the pathologic neuronal network by i) electrical modulation of the network, ii) disrupting or isolating the pathologic network by resective surgery and iii) building new networks by gene therapy, stem cell transplantation or induction of cytogenesis. One of the challenges that this approach faces is the anatomical and functional demarcation of the pathologic network. As with any therapy, its efficacy depends on selecting suitable candidates, which implies a multidisciplinary workup. The course focuses on the underlying molecular mechanisms as well as the (lack of) rationale behind the treatment options. Students gain experience with the multidisciplinary workup and the molecular assays that are currently explored to characterise these disorders. The course also encompasses practical training in which students have to genotype their own NMDA receptor.

Course objectives

Knowledge of: Translational research approaches for neurological disorders including epilepsy and movement disorders.

Recommended reading

Papers from scientific journals and book chapters from books.

PSY4320
Period 3
9 Jan 2023
3 Feb 2023
[Print course description](#)
ECTS credits:
5.0
Instruction language:
English
Coordinator:

- [G. Hoogland](#)

Teaching methods:
Lecture(s), PBL, Skills
Assessment methods:
Attendance, Presentation, Written exam
Keywords:
epilepsy, Movement disorders, Genetics, electrophysiology, functional neurosurgery
Faculty of Psychology and Neuroscience

Practical Training: Immunocytochemical Staining of Human Postmortem Tissue and Evaluation of the Staining Using the Multihead Microscope

Full course description

An immunocytochemical procedure will be followed to label plaques (ABeta) and neurofibrillary

tangles (abnormal Tau) and to the staining will be evaluated afterwards using the multihead microscope.

Course objectives

Knowledge of: Collecting Postmortem tissue, fixation, paraffin, immunocytochemical staining, recognition of neuropathological hallmarks in Tauopathies: Alzheimer's disease (AD); plaques, tangles Synucleinopathies: Parkinson disease, Multisystem atrophy. Polyglutamine diseases: Huntington, and Spinocerebellar ataxias. Mixed pathogies; Diffuse Lewy body disease, early and late onset AD, Amyloid beta cascade hypothesis, amyloid precursor protein, Tau, ubiquitin, GFAP, gliosis, cytoarchitecture of hippocampus and neocortex.

Recommended reading

Handbooks on practical immunohistochemistry (on EleUM).

PSY4351
Period 2
31 Oct 2022
23 Dec 2022
[Print course description](#)
ECTS credits:
0.0
Instruction language:
English
Coordinator:

- [T. Vanmierlo](#)

Teaching methods:
Lecture(s), PBL, Research, Skills, Training(s)
Assessment methods:
Attendance, Observation, Take home exam
Keywords:
Tauopathies (e.g. Alzheimer's), synucleinopathies (e.g. Parkinson), polyglutamine diseases (Huntington), Neurodegenerative mechanisms
Faculty of Psychology and Neuroscience

Practical Training: Western Blotting

Full course description

The objective of this practical is to learn to work with in-vitro model systems and to use Western Blotting to measure protein levels; In-vitro evaluation of the neurotrophic properties of stress hormones. After an introduction, students will design their own small research project. During the entire course, students work on this project and conduct the necessary experiments. Students use human cell lines to examine the neuroplastic/toxic effects of stress hormones (e.g. cortisol) in relation to molecular biological changes. The induction of neurotrophic factor synthesis is determined by Western Blotting.

Research Master Cognitive and Clinical Neuroscience Specialisation Fundamental Neuroscience

Course objectives

Knowledge of: Western blotting, cell culture, neuroplasticity, psychopharmacology, protein chemistry, psychobiology of stress, neurobiology of psychiatric disorders, anxiety, anxiety disorders, major depression, molecular psychiatry, environmental exposure, functional neuroanatomy, (neuro)psychiatric (endo)phenotypes, animal models for psychiatric disorders, translational neuropsychiatry, the pathophysiology of mental disorders.

Recommended reading

Journal articles, book chapters.

PSY4352
Period 5
10 Apr 2023
9 Jun 2023
[Print course description](#)
ECTS credits:
0.0
Instruction language:
English
Coordinators:

- [D.L.A. van den Hove](#)
- [G.R.L. Kenis](#)

Teaching methods:
Assignment(s), Lecture(s), Paper(s), Presentation(s), Research, Skills, Work in subgroups, Training(s)
Assessment methods:
Attendance, Final paper, Presentation
Keywords:
Western blot, stress, depression, Anxiety disorders, neurotrophic factors
Faculty of Psychology and Neuroscience

Electrophysiology: From Single Cell Activity to 'Cognitive' Markers

Full course description

Our brain is busy all the time, whether we are awake or asleep. There are thousands of neurons which are in constant communication with each other. Neurotransmitters and electrical currents convey information from one cell to another, which in turn produces electrical signals. This course is an introduction into the field of brain electricity. Students first learn about how currents develop (i.e., role of molecules, ion channels or membrane) and how they can be measured (e.g., patch clamp or single-cell recording). Next, discussions focus on how these currents are perceived in electrophysiology. Students also determine what the differences are in measurements using various species. For instance, can electrodes be placed in humans using the same approach that is used for rats? Finally, students will learn what these currents mean in terms of e.g., event-related potentials or (de)synchronisation measures. In addition to the theoretical basis, students will discuss some of

the practical issues when performing electroencephalography (EEG) recordings, such as measurement settings and electrode positions. This is accompanied by the presentation of pictures and short videos on how measurements in animals and humans are performed.

Course objectives

Knowledge of: Electrochemical processes in neurons, patch clamp and single-neuron recordings, event-related potentials in various species, EEG frequencies and event-related (de)synchronisation, source localization, electrophysiology in psychological research.

Recommended reading

Journal articles, book chapters, research reviews.

PSY4322
Period 5
10 Apr 2023
9 Jun 2023
[Print course description](#)
ECTS credits:
4.0
Instruction language:
English
Coordinator:

- [A. Sambeth](#)

Teaching methods:
Lecture(s), PBL, Presentation(s)
Assessment methods:
Attendance, Final paper, Presentation, Participation, Written exam
Keywords:
electrophysiology, signal transduction, patch clamp, single-cell recording, translational
Faculty of Psychology and Neuroscience

Research Grant Writing Workshop

PSY4114
Year
1 Sep 2022
31 Aug 2023
[Print course description](#)
ECTS credits:
2.0
Instruction language:
English
Coordinators:

- [S. Köhler](#)
- [R.L.H. Handels](#)

Research Master Cognitive and Clinical Neuroscience Specialisation Fundamental Neuroscience

Faculty of Psychology and Neuroscience

Valorisation

PSY4834
Period 2
31 Oct 2022
23 Dec 2022
[Print course description](#)
ECTS credits:
2.0
Instruction language:
English
Coordinator:

- [R. Schreiber](#)

Faculty of Psychology and Neuroscience

Neuroimmunology and Inflammation

PSY4360
Period 4
6 Feb 2023
7 Apr 2023
[Print course description](#)
ECTS credits:
4.0
Instruction language:
English
Coordinators:

- [M.R. Losen](#)
- [M.P. Martinez Martinez](#)

Faculty of Psychology and Neuroscience

Psychiatric Neuroscience

PSY4323
Period 5
10 Apr 2023
9 Jun 2023
[Print course description](#)
ECTS credits:
4.0
Instruction language:
English
Coordinators:

- [G.R.L. Kenis](#)
- [D.L.A. van den Hove](#)

Introduction to R

PSY4373
Period 5
10 Apr 2023
9 Jun 2023
[Print course description](#)
ECTS credits:
1.0
Instruction language:
English
Coordinators:

- [W. Viechtbauer](#)
- [S.E. Pishva](#)

Second year courses

Research Master Specialisation Fundamental Neuroscience Year 2

Faculty of Psychology and Neuroscience

Behavioural Tests and Models

Full course description

Neuroscience research involves the use of a wide variety of behavioural tests and models with laboratory animals. There are several criteria that neuroscientists can use to select behavioural tests and models. Eventually data has to be analysed, integrated and interpreted. How is this all done? Examples from mainly cognitive and affective tests and models are given. You will learn about these issues by analysing, interpreting and presenting data from experiments as well as from literature.

Course objectives

Knowledge of: Concepts of behavioural animal testing, raw data management and analysis, interpretation of behavioural data.

Recommended reading

Papers from scientific journals and book chapters from books are provided.

PSY5332
Period 1
5 Sep 2022
28 Oct 2022
[Print course description](#)

Research Master Cognitive and Clinical Neuroscience Specialisation Fundamental Neuroscience

ECTS credits:
1.0
Instruction language:
English
Coordinator:

- [J.H.H.J. Prickaerts](#)

Teaching methods:
Assignment(s), Lecture(s), Paper(s), Presentation(s)
Assessment methods:
Attendance, Final paper, Presentation
Keywords:
Test, model, in vivo, validity, translation.
Faculty of Psychology and Neuroscience

EEG and ERP

Full course description

Electroencephalography (EEG) and Event Related Potentials (ERP) offer a combination of precise measurements for the time course of brain processes. These are low cost, non-invasive measurements and are widely available. For these reasons they make a unique contribution to cognitive neuroscience. Scientific interest in EEG and ERP is growing, and results have been increasingly integrated with other neuro-imaging techniques during the last few decades. Lectures and basic literature provide an introduction for students to the basics of EEG and ERP research, EEG and ERP terminology and the possibilities and limitations within EEG and ERP. One topic that students will learn is how to set up an experimental paradigm that is suitable for EEG and ERP measurements. Students also study practical measurement issues, such as electrode placement and types of artefacts. Finally, students must interpret the resulting data. Successful measurement requires an understanding of the basics of EEG and ERP signal analysis techniques, such as artefact management, spectral analysis, filtering, ERP averaging, time-frequency analysis etc. Students also receive hands-on training in smaller groups in running an ERP experiment, including electrode application, minimising artefacts, and health and safety in the lab. A number of simple experimental paradigms will be utilised; these provide interesting and reliable results. Data processing will include a number of common EEG analyses, e.g. analyses in the time and frequency domain.

Course objectives

Knowledge of: Basic EEG/ERP paradigms, EEG recording systems, measurement settings, electrode application, data quality verification, analogue-digital conversion, basic EEG / ERP components, interpreting topographical plots, neural origins of EEG, time domain analysis, frequency domain analysis, time-frequency analysis, filtering, ocular artefact control, muscle artefact control, choice of reference, re-referencing.

Recommended reading

Journal articles, handbooks.

PSY4221

Research Master Cognitive and Clinical Neuroscience Specialisation Fundamental Neuroscience

Period 1
5 Sep 2022
28 Oct 2022
[Print course description](#)
ECTS credits:
2.0
Instruction language:
English
Coordinator:

- [F.T.Y. Smulders](#)

Teaching methods:
Lecture(s), Paper(s), Skills, Training(s), Work in subgroups
Assessment methods:
Attendance, Final paper
Keywords:
Electroencephalography (EEG), Event-related potentials (ERP), electrophysiology, measurement, analysis of brain potentials.
Faculty of Psychology and Neuroscience

Research Grant Writing Course

Full course description

In this course, students will apply what they have learned during the Research Grant Writing Workshop (PSY4112). Students will work together (groups of max. 5) to write a research proposal on their selected topic, including an original research hypothesis, experimental design and methods. This proposal should promote interdisciplinarity; therefore students are encouraged to think across boundaries of different scientific fields. A senior researcher will guide students during this writing process. The students will write their proposal in 3 steps, and they will receive feedback from their mentor and peers. The resulting proposals will be presented during a symposium by way of a poster or an oral presentation.

Course objectives

Knowledge of how to: Review literature, formulate a research hypothesis, design a research study, write a research proposal, present the proposal at a symposium (oral or poster).

Prerequisites

This course is a continuation of the Research Grant Writing Workshop (PSY4112).

PSY5112
Period 1
5 Sep 2022
28 Oct 2022
[Print course description](#)
ECTS credits:
3.0

Research Master Cognitive and Clinical Neuroscience Specialisation Fundamental Neuroscience

Instruction language:
English
Coordinators:

- [S. Köhler](#)
- [R.L.H. Handels](#)

Teaching methods:
Work in subgroups
Assessment methods:
Attendance, Final paper, Presentation
Keywords:
Research proposal, Interdisciplinary, hypothesis, design, methods, research symposium, peer review.
Faculty of Psychology and Neuroscience

Advanced Genetics

PSY5333
Period 1
5 Sep 2022
28 Oct 2022
[Print course description](#)
ECTS credits:
1.0
Instruction language:
English
Coordinator:

- [G.R.L. Kenis](#)

Internships

Research Internship

Faculty of Psychology and Neuroscience

Research Internship Graded

Full course description

The second part of the second year of the research master's programme is devoted to conducting a research internship. As a result of the many international research contacts that faculty members have established, a substantial number of students will conduct their research internship abroad. Students start their internship with the writing of a research proposal. Students finish the master's programme by writing a thesis based on their internship research project.

The internship can be completed at Maastricht University or at external research institutes. In all cases, a student's research proposal and master's thesis will be evaluated by two assessors. At least one of these assessors must be a member of the Faculty of Psychology and Neuroscience (FPN), the Faculty of Health, Medicine and Life Sciences (FHML), or the School of Business and Economics

Research Master Cognitive and Clinical Neuroscience Specialisation Fundamental Neuroscience (SBE). Both assessors must hold a PhD degree.

A detailed guide on research internships and the master's thesis can be found on AskPsy > Curriculum > Internships.

Each specialisation has its own internship coordinator:

- RM Cognitive Neuroscience:

Amanda Kaas, Cognitive Neuroscience (FPN),

Phone: (0)43 38 82172, 55 Oxfordlaan, Room 2.019, Email: a.kaas@maastrichtuniversity.nl

- RM Neuroeconomics: Amanda Kaas, Cognitive Neuroscience (FPN),

Phone: (0)43 38 82172, 55 Oxfordlaan, Room 2.019, Email: a.kaas@maastrichtuniversity.nl

- RM Fundamental Neuroscience:

Pilar Martínez, Psychiatry and Neuropsychology (FHML),

Phone: (0)43 38 81042, 40 Universiteitssingel, Room 2.574, Email: p.martinez@maastrichtuniversity.nl

- RM Neuropsychology:

Esther Keulers, Neuropsychology and Psychopharmacology (FPN), Phone (043) 38 82932, 40 Universiteitssingel East, Room 2.755,

Email: esther.keulers@maastrichtuniversity.nl

- RM Psychopathology: Nicole Geschwind, Clinical Psychological Science (FPN),

Phone (043) 38 81487, 40 Universiteitssingel East,

Room 2.767, Email: nicole.geschwind@maastrichtuniversity.nl

Course objectives

Knowledge of:

Conducting a (supervised) empirical research project and summarising the research and findings in the form of a master's thesis.

Prerequisites

The research internship cannot be started until:

☐ At least 60 credits have been attained during the programme;

☐ The above mentioned 60 credits must include the courses;

☐ Advanced Statistics I and II.

Research Master Cognitive and Clinical Neuroscience Specialisation Fundamental Neuroscience

PSY5120
Year
31 Oct 2022
31 Aug 2023
<u>Print course description</u>
ECTS credits:
10.0
Instruction language:
English
Coordinator:

- [G.C. Kraag](#)

Teaching methods:
Assignment(s), Paper(s), Research, Skills, Working visit(s)
Assessment methods:
Attendance, Final paper, Observation, Participation
Keywords:
internship, research, master's thesis
Faculty of Psychology and Neuroscience

Research Internship Ungraded

Full course description

The second part of the second year of the research master's programme is devoted to conducting a research internship. As a result of the many international research contacts that faculty members have established, a substantial number of students will conduct their research internship abroad. Students start their internship with the writing of a research proposal. Students finish the master's programme by writing a thesis based on their internship research project.

The internship can be completed at Maastricht University or at external research institutes. In all cases, a student's research proposal and master's thesis will be evaluated by two assessors. At least one of these assessors must be a member of the Faculty of Psychology and Neuroscience (FPN), the Faculty of Health, Medicine and Life Sciences (FHML), or the School of Business and Economics (SBE). Both assessors must hold a PhD degree.

A detailed guide on research internships and the master's thesis can be found on AskPsy > Curriculum > Internships.

Each specialisation has its own internship coordinator:

- RM Cognitive Neuroscience:

Amanda Kaas, Cognitive Neuroscience (FPN),

Phone: (0)43 38 82172, 55 Oxfordlaan, Room 2.019, Email: a.kaas@maastrichtuniversity.nl

- RM Neuroeconomics: Amanda Kaas, Cognitive Neuroscience (FPN),

Phone: (0)43 38 82172, 55 Oxfordlaan, Room 2.019, Email: a.kaas@maastrichtuniversity.nl

Research Master Cognitive and Clinical Neuroscience Specialisation Fundamental Neuroscience

- RM Fundamental Neuroscience:

Pilar Martínez, Psychiatry and Neuropsychology (FHML),

Phone: (0)43 38 81042, 40 Universiteitssingel, Room 2.574, Email: p.martinez@maastrichtuniversity.nl

- RM Neuropsychology:

Esther Keulers, Neuropsychology and Psychopharmacology (FPN), Phone (043) 38 82932, 40 Universiteitssingel East, Room 2.755,

Email: esther.keulers@maastrichtuniversity.nl

- RM Psychopathology: Nicole Geschwind, Clinical Psychological Science (FPN),

Phone (043) 38 81487, 40 Universiteitssingel East,

Room 2.767, Email: nicole.geschwind@maastrichtuniversity.nl

Course objectives

Knowledge of:

Conducting a (supervised) empirical research project and summarising the research and findings in the form of a master's thesis.

Prerequisites

The research internship cannot be started until:

 At least 60 credits have been attained during the programme;

 The above mentioned 60 credits must include the courses;

 Advanced Statistics I and II.

PSY5121
Year
31 Oct 2022
31 Aug 2023
[Print course description](#)
ECTS credits:
25.0
Instruction language:
English
Coordinator:

- [G.C. Kraag](#)

Teaching methods:
Assignment(s), Paper(s), Research, Skills, Working visit(s)
Assessment methods:

Research Master Cognitive and Clinical Neuroscience Specialisation Fundamental Neuroscience

Attendance, Final paper, Observation, Participation
Keywords:
internship, research, master's thesis
Faculty of Psychology and Neuroscience

Research Proposal

Full course description

The second part of the second year of the research master's programme is devoted to conducting a research internship. As a result of the many international research contacts that faculty members have established, a substantial number of students will conduct their research internship abroad. Students start their internship with the writing of a research proposal. Students finish the master's programme by writing a thesis based on their internship research project. The internship can be undertaken at Maastricht University or at external research institutes. In all cases, a student's research proposal and master's thesis will be evaluated by two assessors. At least one of these assessors must be a member of the Faculty of Psychology and Neuroscience (FPN), the Faculty of Health, Medicine and Life Sciences (FHML), or the School of Business and Economics (NE). Both assessors need to have a PhD degree. A detailed guide on research internships and the master's thesis can be found on EleUM > Students Research Master Faculty of Psychology and Neuroscience > internships. - RM Cognitive Neuroscience Internships Coordinator: Amanda Kaas, Cognitive Neuroscience (FPN), Phone: (0)43 38 82172, 55 Oxfordlaan, Room 2.019, Email: a.kaas@maastrichtuniversity.nl - RM Neuroeconomics Internships Coordinator: Amanda Kaas, Cognitive Neuroscience (FPN), Phone: (0)43 38 82172, 55 Oxfordlaan, Room 2.019, Email: a.kaas@maastrichtuniversity.nl - RM Fundamental Neuroscience Internships Coordinator: Pilar Martinez, Psychiatry and Neuropsychology (FHML), Phone: (0)43 38 81042, 50 Universiteitssingel West, Room 1.112, Email: p.martinez@maastrichtuniversity.nl - RM Neuropsychology Internships Coordinator: Caroline van Heugten, Neuropsychology and Psychopharmacology (FPN), Phone (043) 38 84213, 40 Universiteitssingel East, Room 2.736, Email: caroline.vanheugten@maastrichtuniversity.nl - RM Psychopathology Internships Coordinator: Nicole Geschwind, Clinical Psychological Science (FPN), Phone (043) 38 81487, 40 Universiteitssingel East, Room 2.767, Email: Nicole.geschwind@maastrichtuniversity.nl

Course objectives

Knowledge of: Conducting a (supervised) empirical research project and summarising the research and findings in the form of a master's thesis.

PSY5107
Year
31 Oct 2022
31 Aug 2023
[Print course description](#)
ECTS credits:
1.0
Instruction language:
English
Coordinator:

- [G.C. Kraag](#)

Research Master Cognitive and Clinical Neuroscience Specialisation Fundamental Neuroscience

Teaching methods:
Assignment(s), Paper(s), Research, Skills, Working visit(s)
Assessment methods:
Attendance, Final paper, Observation, Participation
Keywords:
internship, Research, master's thesis.
Thesis

Master's Thesis

Faculty of Psychology and Neuroscience

Master's Thesis

Full course description

The second part of the second year of the research master's programme is devoted to conducting a research internship. As a result of the many international research contacts that faculty members have established, a substantial number of students will conduct their research internship abroad. Students start their internship with the writing of a research proposal. Students finish the master's programme by writing a thesis based on their internship research project. The internship can be undertaken at Maastricht University or at external research institutes. In all cases, a student's research proposal and master's thesis will be evaluated by two assessors. At least one of these assessors must be a member of the Faculty of Psychology and Neuroscience (FPN), the Faculty of Health, Medicine and Life Sciences (FHML), or the School of Business and Economics (NE). Both assessors need to have a PhD degree. A detailed guide on research internships and the master's thesis can be found on EleUM > Students Research Master Faculty of Psychology and Neuroscience > internships. - RM Cognitive Neuroscience Internships Coordinator: Amanda Kaas, Cognitive Neuroscience (FPN), Phone: (0)43 38 82172, 55 Oxfordlaan, Room 2.019, Email: a.kaas@maastrichtuniversity.nl - RM Neuroeconomics Internships Coordinator: Amanda Kaas, Cognitive Neuroscience (FPN), Phone: (0)43 38 82172, 55 Oxfordlaan, Room 2.019, Email: a.kaas@maastrichtuniversity.nl - RM Fundamental Neuroscience Internships Coordinator: Pilar Martinez, Psychiatry and Neuropsychology (FHML), Phone: (0)43 38 81042, 50 Universiteitssingel West, Room 1.112, Email: p.martinez@maastrichtuniversity.nl - RM Neuropsychology Internships Coordinator: Caroline van Heugten, Neuropsychology and Psychopharmacology (FPN), Phone (043) 38 84213, 40 Universiteitssingel East, Room 2.736, Email: caroline.vanheugten@maastrichtuniversity.nl - RM Psychopathology Internships Coordinator: Nicole Geschwind, Clinical Psychological Science (FPN), Phone (043) 38 81487, 40 Universiteitssingel East, Room 2.767, Email: Nicole.geschwind@maastrichtuniversity.nl

Course objectives

Knowledge of: Conducting a (supervised) empirical research project and summarising the research and findings in the form of a master's thesis.

Prerequisites

The research internship cannot be started until:

Research Master Cognitive and Clinical Neuroscience Specialisation Fundamental Neuroscience

☐ At least 60 credits have been attained during the programme;

☐ The above mentioned 60 credits must include the courses;

☐ Advanced Statistics I and II.

PSY5103
Year
31 Oct 2022
31 Aug 2023
[Print course description](#)
ECTS credits:
14.0
Instruction language:
English
Coordinator:

- [G.C. Kraag](#)

Teaching methods:
Assignment(s), Paper(s), Research, Skills, Working visit(s)
Assessment methods:
Attendance, Final paper, Observation, Participation
Keywords:
internship, Research, master's thesis.