

Neuropsychology

The specialisation in Neuropsychology studies the relationship between brain and behaviour. This specialisation focuses on understanding cognitive (memory, perception, planning, attention, psycho-motor functions) and emotional-affective (e.g. mood, anxiety, motivation, arousal) behaviour starting from the perspective of brain structure and function. This is measured on a continuum ranging from normal behaviour to pathological psychiatric dysfunctions (e.g. depression, anxiety, Korsakoff's syndrome, schizophrenia, dementia, ADHD). In addition, in the context of psychopharmacology, the brain-behaviour relationship is thoroughly studied by pharmacological manipulation of brain neurochemistry and function in human and animal models, including the use of interventional psychoactive substances (e.g. hormones, drugs, medicine and foods or dietary ingredients) in combination with behavioural, psychophysiological and neurofunctional research techniques. An integrated programme is presented that includes most aspects of basic and applied neuroscience. In addition, students work in a multidisciplinary team of psychologists, biologists and psychiatrists and have access to state-of-the art clinical, behavioural and bio-psychological laboratories. They further also acquire a basic understanding of neuroimaging techniques.

Neuropsychology Coordinator:

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PSY4950 Introduction in Problem-Based Learning see HSP

Is equal to Research Master module PSY4407

Title	Brain Damage
Period	1
Code	PSY4061
ECTS credits	4
Organisational unit	Neuropsychology and Psychopharmacology
Coordinator	Martin van Boxtel
Descriptions	<p>Much of what we know about cognitive processes and affective functioning comes from close observation of patients with damage to the central nervous system. This course reviews mechanisms of the relationship between brain and certain behaviours that form the basis of neuropsychological dysfunctions in people who suffer from brain damage. Students are introduced to the fields of Behavioural Neurology and Neuropsychology via questions such as: What do the effects of pathological conditions on brain structure and/or function tell us about the relationship between brain and behaviour? They acquire knowledge about the causes and neurobiological effects of brain lesions, and become acquainted with the aetiology and taxonomy of common neurological and neuropsychological syndromes. Functional disturbances that occur after focal or diffuse lesions in different cortical areas, in connecting tracts, in limbic and other subcortical brain structures are discussed, together with the neurocognitive assessment procedures that are commonly used to identify such deficits, including disorders of memory, praxis, language, visual spatial abilities and executive function. This knowledge forms an essential basis for an understanding of the principles of neuropsychological rehabilitation, which can be used to support or even improve residual function after brain damage and can ameliorate the life quality of neurological patients.</p>
Goals	<p>Knowledge of: Functional brain anatomy, cerebral vascularisation, neurophysiology of brain repair, neurological diseases, stroke, epilepsy, traumatic brain injury, alcohol-induced brain dysfunction, Korsakoff's disease, cognitive control, neuropsychological syndromes, brain plasticity, history of neuropsychology, neuropsychological assessment, cognitive rehabilitation.</p>
Instruction language	EN
Prerequisites	Understanding at Bachelor level of the hierarchical organization of brain functions, basic brain anatomy and physiology
Recommended literature	<p>Journal articles</p> <p>Book chapters.</p>
Teaching methods	<p>Lecture(s)</p> <p>PBL</p>
Assessment methods	<p>Attendance</p> <p>Written exam</p>
Key words	neuropsychology, history of neuropsychology, brain disease, neuroanatomy, neurology, neuropsychological assessment, rehabilitation, brain plasticity

Is equal to Research Master module PSY4408

Title	Behavioural Disorders
Period	1
Code	PSY4062
ECTS credits	4
Organisational unit	Neuropsychology and Psychopharmacology
Coordinator	Kim Kuypers
Descriptions	The course covers the range of cognitive and behavioural problems that accompany the most common neuropsychiatric and neurological disorders (e.g. schizophrenia, ADHD, autism and acquired brain injuries). The course provides insight into the underlying neurobiological and psychological mechanisms, and it touches on the principle of vulnerability, and protective/risk factors in the aetiology of behavioural disorders.
Goals	Knowledge of: Neuropsychological assessment and- intervention, psychological mechanism, neurobiology, epidemiology, developmental-, psychiatric- and neurological disorders, neuropsychiatric syndromes.
Instruction language	EN
Prerequisites	
Recommended literature	Research and review articles, case studies, book chapters.
Teaching methods	Lecture(s) PBL
Assessment methods	Attendance Written exam
Key words	behavioural disorders, development, neuropsychiatry, acquired brain injury, neuropsychology, intervention,

Is equal to Research Master module PSY4433.

In the Master it is a practical training; in the Research Master it is a skills training.

Title	Practical training: Neuropsychological Assessment
Period	1
Code	PSY4063
ECTS credits	2
Organisational unit	Neuropsychology and Psychopharmacology
Coordinator	Sven Stapert
Descriptions	<p>Neuropsychological assessment runs parallel to the courses Brain Damage and Behavioural Disorders. The core elements in this skills training are the collection and interpretation of cognitive, emotional and behavioural data in order to support neurological or neuropsychiatric diagnosis. The skills training commences with an introductory lecture covering the principles and interpretation of neuropsychological assessment.</p> <p>During a 7-week period, students are trained in neuropsychological history taking, observing patient behaviour, cognitive testing and interpreting cognitive and behavioural data. Finally, each student writes a comprehensive neuropsychological report based on a simulated clinical case.</p>
Goals	<p>Knowledge of:</p> <p>Students obtain the basic skills of neuropsychological assessment, i.e. observing, interviewing, cognitive testing, combining and interpreting behavioural and cognitive data and neuropsychological report writing.</p>
Instruction language	EN
Prerequisites	Introductory knowledge on psychodiagnostics and related psychometrics.
Recommended literature	<p>Lezak. M.D. , Howieson, M.D., Bigler, E.D., & Tranel, D. (2012). Neuropsychological Assessment. New York: Oxford University Press;</p> <p>R.D. Vanderploeg (2000). Clinician's Guide to Neuropsychological Assessment. New Jersey: Lawrence Erlbaum Associates.</p>
Teaching methods	<p>Assignment(s)</p> <p>Lecture(s)</p> <p>Paper(s)</p> <p>Patient contact</p> <p>Skills</p> <p>Training(s)</p> <p>Work in subgroups</p>
Assessment methods	<p>Attendance</p> <p>Final paper</p>
Key words	neuropsychological assessment, cognitive disorders, brain disease, brain injury, test taking, interviewing, observations, psychometry

Is equal to Research Master module PSY4409

Title	Arousal and Attention
Period	2
Code	PSY4064
ECTS credits	4
Organisational unit	Neuropsychology and Psychopharmacology
Coordinator	Lisbeth Evers
Descriptions	This course familiarises students with key concepts and controversies in the study of effects of arousal and alertness on attention and cognitive performance, with an emphasis on the role of neurotransmitters. It is known that human performance fluctuates depending on the state of alertness; when we are sleepy or tired we are less attentive to events going on around us than when we are fully awake and alert. However, people who are extremely stressed or highly aroused can also have problems in effectively focusing or shifting their focus of attention (e.g. ADHD, anxiety disorders). The mechanisms underlying the relation between arousal, attention and performance have been the subject of extensive research in psychology. Therefore this course will review current knowledge on subcortical arousal systems, attention networks and the neurotransmitters involved, in addition to a critical discussion of the classical Arousal Theory. Psychopharmacological studies will be presented that illustrate the role of different neurotransmitters in arousal and attention.
Goals	Knowledge of: Arousal Theory, inverted-U model, Yerkes-Dodson law, Ascending Reticular Activating System, Cognitive Energetic Model, Additive Factors Method, Posner's attentional networks, orienting attention, cueing paradigm, Corbetta's model of attentional control, alerting, sustained attention, vigilance, noradrenergic locus coeruleus activity, clonidine, Signal Detection Theory, executive attention, prefrontal dopaminergic activity, methylphenidate, Borbely's model of sleep regulation, caffeine, neurocognitive theory of insomnia, benzodiazepines, flip-flop mechanism of sleep-wake regulation, antihistamines.
Instruction language	EN
Prerequisites	
Recommended literature	Journal articles; Book chapters.
Teaching methods	Lecture(s) PBL
Assessment methods	Attendance Written exam
Key words	arousal, alertness, attention networks, brainstem arousal systems, sleep-wake regulation

Is equal to Research Master module PSY4416

Title	Ageing
Period	2
Code	PSY4067
ECTS credits	4
Organisational unit	Neuropsychology and Psychopharmacology
Coordinator	Sonja Kotz
Descriptions	This course covers a broad range of topics in the field of Cognitive Ageing. We will initially focus on healthy ageing to better understand processing changes that may arise in abnormal aging such as dementia and neurodegeneration. Important questions covered will include: What is ageing? What neurobiological and cognitive mechanisms determine whether a person ages pathologically, normally, or successfully? Can the ageing process be influenced? To address these questions, students will critically reflect on influential theories, state-of-the-art research, established research methods, and clinical interventions. General themes are physical ageing, neural ageing, cognitive ageing, pathological ageing (mild cognitive impairment, Alzheimer's disease, and other types of dementia), intervention strategies, and methodological issues in ageing research.
Goals	Knowledge of: Physical ageing, evolutionary theories of ageing, neural aging, amyloid cascade hypothesis, temporal lobe dysfunction, frontal lobe dysfunction, subcortical dysfunction, processing-speed theory, white matter decline, decline of cognitive control, inhibitory-deficit hypothesis, sensory ageing, default-mode network dysfunction, parietal lobe dysfunction, mild cognitive impairment, Alzheimer's disease, vascular dementia, successful ageing, reserve theories, compensation and intervention, emotional ageing, fronto-temporal dementia, semantic dementia.
Instruction language	EN
Prerequisites	
Recommended literature	E-reader.
Teaching methods	Lecture(s) PBL
Assessment methods	Attendance Written exam
Key words	physical, neural, cognitive, and emotional ageing, dementia, neurodegeneration

Is almost equal to Research Master module PSY4434.

In the master it is a practical training (2 credits), in the Research Master a skills training (3 credits).

Title	Practical training: Basic Cognitive Psychological Skills
Period	2
Code	PSY4066
ECTS credits	2
Organisational unit	Neuropsychology and Psychopharmacology
Coordinator	Eric Vuurman
Descriptions	<p>This course focuses on the acquisition and training of basic skills required in cognitive performance research. The course is centered around a psychological experiment in which students study the detrimental effects of arousal manipulation (environmental noise) on cognitive processing. Students will learn how to perform a field experiment and will undertake all the various stages that are necessary to acquire and analyse the data and report on the results. Students will be required to recruit a small number of subjects and to administer the test battery according to a pre-defined protocol. The test battery consists of paper and pencil tests that have been presented and discussed in previous courses. After data acquisition, a number of interactive sessions are planned in which students not only learn to explore and analyse their data with SPSS but also learn how to interpret the results. Students conclude the course by writing a journal style paper in APA format describing the experiment. Particular attention will be given to predicting and explaining the results within a theoretical perspective and comparing them with previous findings. An overview of the techniques and tests currently used to evaluate performance in a number of cognitive domains (such as language, perception, attention and executive functions), are also presented to students in this course.</p>
Goals	<p>Knowledge of: Psychological testing, data preparation, data analysis using multivariate techniques, report writing.</p>
Instruction language	EN
Prerequisites	
Recommended literature	Field, A. (2009). Discovering statistics using SPSS (4th ed.). London: Sage.
Teaching methods	Assignment(s) Lecture(s) PBL
Assessment methods	Attendance Final paper
Key words	field experiment, applied behavioural testing, data reduction and analysis techniques, report writing

PSY4098 Academic Skills & Research Proposal see HSP

Internships

Universal for almost all Master specialisations, exemption: WOP and NP (combination internship).

Title	Academic Skills & Research Proposal, Research Internship and Master's Thesis
Period	3-6
Code	PSY4098, PSY4078/4079 and PSY4091
ECTS credits	<p>40 (5, 10/15, and 10, respectively). The total research internship will be awarded 40 credits: 30 credits for the research activities, including the research proposal and 10 credits for the master's thesis. Academic Skills & The research proposal is awarded 5 credits (pass/fail). See PSY4098 for more details. The practical execution of the internship is awarded 25 credits (10 credits graded included in GPA (PSY4078); 15 credits pass/fail and thus not included in the GPA (PSY4079)). The master's thesis (graded) receives 10 credits (PSY4091).</p>
Organisational unit	Clinical Psychological Science
Coordinator	Sandra Mulkens
Descriptions	<p>The second part of the one-year master's program (from period 3 onwards), is devoted to conducting a research internship that involves 1) writing of a research proposal, and preparing and planning of the research project, 2) conducting the research project, and 3) analyzing the results of the research project. This work will result in an individually written 4) master's thesis. Step 1 will be done in period 3, steps 2 to 4 from period 4 onwards.</p> <p>The internship can be carried out at Maastricht University, at an external research institute or at other, more practically oriented institutions. In all cases, a student's research proposal and master's thesis will be evaluated by two assessors. At least one of these assessors is a staff member at the Faculty of Psychology and Neuroscience (FPN). The other assessor can be an external researcher. One of the assessors must hold a PhD, the other can be a PhD student.</p> <p>Information about research internships offered by faculty members can be found on AskPsy > Curriculum > internships/stages.</p> <p>Each specialisation has its own internship coordinator:</p> <p><i>Psychology and Law:</i> Kim van Oorsouw, Phone (043) 38 84050, 40 Universiteitssingel East, Room 3.767, Email: k.vanoorsouw@maastrichtuniversity.nl</p> <p><i>Health and Social Psychology:</i> 1) Sandra Mulkens and 2) Loes Kessels, 1) Phone (043) 38 84052, 40 Universiteitssingel East, Room 3.755, Email: s.mulkens@maastrichtuniversity.nl 2) Phone (043) 3882105, 40 Universiteitssingel East, Room 4.747 Email: lte.kessels@maastrichtuniversity.nl</p> <p><i>Work and Social Psychology:</i> Robert van Doorn, Phone (043) 38 81926, 40 Universiteitssingel East, Room 4.731, Email: r.vandoorn@maastrichtuniversity.nl</p> <p><i>Developmental Psychology:</i> Hans Stauder, Phone (043) 38 81933, 55 Oxfordlaan, Room 2.009, Email: h.stauder@maastrichtuniversity.nl</p>

	<p><i>Cognitive Neuroscience</i>: Amanda Kaas, Phone (043) 38 82172, 55 Oxfordlaan, Room 2.019, Email: a.kaas@maastrichtuniversity.nl</p> <p><i>Neuropsychology</i>: Esther Keulers, Phone (043) 38 82932, 40 Universiteitssingel East, Room 2.755, Email: esther.keulers@maastrichtuniversity.nl</p>
Goals	Knowledge of: Conducting a supervised empirical research project and summarising this research in a master's thesis.
Instruction language	EN
Prerequisites	The Research Internship can only be started when at least 8 credits of the compulsory courses have been obtained of the modules offered in periods 1 and 2. Furthermore, the research proposal must be assessed as sufficient by both assessors and must be ethically approved before the start. In addition: <ul style="list-style-type: none"> - Certain Research Internships may require that practical or skills training(s) have been completed.
Recommended literature	
Teaching methods	Assignment(s) Paper(s) Research Skills Working visit(s)
Assessment methods	Attendance Final paper (master's thesis) Observation Participation
Key words	academic skills, internship, research, research proposal, master's thesis

Article 2.2 Composition

Health & Social Psychology

The Health & Social Psychology track consists of the following theoretical parts (including the tutorial group and practical training meetings) and the accompanying credits:

- Manipulation 5 credits
- Self Regulation 5 credits
- Bad Habits 5 credits
- Planning Behaviour Change programs 5 credits

The track includes a compulsory apprenticeship consisting of the following parts.

- Academic Skills & Research proposal 5 credits
- Research internship 25 credits
- The master's thesis 10 credits

Exemption: WOP

Part I

Title	Research Proposal, Research Internship and Master's Thesis
Period	3-6
Code	PSY4093, PSY4076/4077 and PSY4099
ECTS credits	30 (5, 10/7, 8 respectively)
Organisational unit	Work and Organizational Psychology
Coordinator	Robert van Doorn
Descriptions	<p>Part of the second semester of the one-year master's programme (from period 3 onwards) covers planning and conducting a research internship (research project). Under supervision, students first write a proposal for the intended research. After the proposal is approved, students commence the research and complete the master's programme by writing the thesis.</p> <p>Each student has two supervisors who both assess the research proposal and the thesis. At least one of these assessors is a (senior) researcher at the Faculty of Psychology and Neuroscience (FPN). Students are referred to www.askpsy.nl for detailed information on and criteria for the WOP research internships</p>
Goals	Write a proposal and conduct a supervised research project and report on the research results via a master's thesis.
Instruction language	EN
Prerequisites	The Research Internship can only be started when at least 8 credits of the compulsory courses have been obtained of the modules offered in periods 1 and 2. In addition: certain Research Internships may require the completion of practical or skills training(s).
Recommended literature	
Teaching methods	Assignment(s) Paper(s) Research Skills Working visit(s)
Assessment methods	Attendance Final paper Observation Participation
Key words	proposal, internship, research, master's thesis

Article 2.2 Composition

The Neuropsychology track consists of the following theoretical parts (including the tutorial groups and practical training meetings) and the accompanying credits:

The course Brain Damage	4 credits
The course Behavioural Disorders	4 credits
The course Arousal and Attention	4 credits
The course Ageing	4 credits
Practical period 1	2 credits
Practical period 2	2 credits
Clinical Supervision	2 credits (only required for option 2, see below)

The track includes two variants of compulsory internships. The student chooses one of these 2 options:

1. Research variant including a research proposal (5 ECTS), a research internship (25 ECTS) and a master's thesis (10 ECTS).
2. Clinical variant including a research proposal (2 ECTS), a research internship (12 ECTS), a master's thesis (7 ECTS), a clinical internship (14 ECTS) and a clinical activities report (3 ECTS).

Deel I

Title	Research Proposal, Research Internship and Master's Thesis (Master NP clinical option)
Period	3-6
Code	PSY4080, PSY4086/4087 and PSY4082
ECTS credits	21 (2, 10/2, 7 respectively)
Organisational unit	Neuropsychology and Psychopharmacology
Coordinator	Esther Keulers
Descriptions	<p>The second part of the one-year master's program (from period 3 onwards), is devoted to arranging and conducting a research internship and a clinical internship for students choosing the clinical option.</p> <p>For the research internship students explore a research issue within their specialisation. Students choosing the clinical option of the Master's degree in Neuropsychology will conduct their research internship in relation to a clinical topic. Students commence their internship with the writing of a research proposal. Students complete the master's program by writing a thesis on research undertaken during their internship.</p> <p>The internship can be undertaken at the institute where the clinical internship is carried out or at Maastricht University. In all cases, a student's research proposal and master's thesis will be evaluated by two assessors. At least one of these assessors is a staff member at the Faculty of Psychology and Neuroscience (FPN). The other assessor might be an external researcher at, for example, the institute where the student collected the data. One of the assessors must hold a PhD, the other can be a PhD student. Information about research internships offered by external institutes or faculty members can be found AskPsy > Curriculum > Internship. This site also provides a detailed guide with practical information about the criteria for the research internship and the master's thesis.</p>
Goals	<p>Knowledge of: Conducting a supervised empirical research project and summarising the research results in the form of a master's thesis.</p>
Instruction language	EN
Prerequisites	<p>The Research Internship can only be started when at least 8 credits of the compulsory courses have been obtained of the modules offered in periods 1 and 2. In addition:</p> <ul style="list-style-type: none"> - Certain Research Internships may require that practical or skills training(s) have been completed.
Recommended literature	
Teaching methods	<p>Assignment(s) Paper(s) Patient contact Research Skills Working visit(s)</p>
Assessment methods	Attendance

	Final paper Observation Participation
Key words	internship, research, master's thesis

Deel II

	Clinical Internship, Clinical Supervision and Clinical Activities Report (Master NP clinical option)
Period	From period 2 onwards
Code	PSY4083, PSY4084 and PSY4085
ECTS credits	19 (14, 2, 3 respectively)
Organisational unit	Neuropsychology and Psychopharmacology
Coordinator	Esther Keulers
Descriptions	<p>The second part of the one-year master's program (from period 2 onwards) is devoted to arranging and conducting a research internship and a clinical Internship for students choosing the clinical option.</p> <p>For the clinical internship students conduct a 13-week fulltime clinical internship in an approved setting. The clinical internship can be conducted in conjunction with the research internship or separately. The aim of the clinical internship is to provide an introduction to the organisation and practice of health care, as well as basic experience in clinical diagnosis and therapeutic interventions. Students conducting a clinical internship are required to receive supervision at Maastricht University and write a clinical activities report (including 3 case reports) as a result of the internship.</p> <p>A detailed guide on clinical internships can be found on AskPsy > Curriculum > Internship Although not required to do so by the master's programme, students who wish to meet Dutch requirements for admission to advanced clinical training programmes are advised to fulfil the admission criteria for the GZ-opleiding.</p>
Goals	<p>Knowledge of:</p> <p>The work environment of the clinical psychologist. This internship gives students the opportunity to practice clinical skills in a real-life setting.</p>
Instruction language	EN
Prerequisites	
Recommended literature	
Teaching methods	<p>Assignment(s) Paper(s) Patient contact Skills Training(s) Working visit(s)</p>
Assessment methods	<p>Attendance Final paper Observation Participation</p>
Key words	clinical research, clinical practice, clinical training, psychodiagnostics, patient contact.

Title	Psychodiagnostics Registration
Period	6
Code	PSY4925
ECTS credits	-
Organisational unit	Neuropsychology and Psychopharmacology
Coordinator	Petra Hurks, Sven Stapert
Descriptions	<p>The success of a treatment or decision depends on the correct identification of the problematic situation: the diagnosis. Psychodiagnostics is the branch of psychology that evaluates individual problematic situations with psychological assessments. These assessments are used in judgments and in decision making processes that have important consequences. Examples include personnel selection processes, neurological evaluations and educational career decisions.</p> <p>To promote the quality of the psychodiagnostics profession, the Dutch Institute of Psychologists (NIP) has introduced a register for psychodiagnostics (i.e., the BAPD). In order to become registered, students are required to master the fundamental knowledge and skills that are rooted in the accepted psychodiagnostic principles. The registration is awarded by the NIP. Individuals who obtain the BAPD are incorporated in a public register that is managed by the NIP. Additional information about NIP registration and regulations can be found at: www.psynip.nl or on EleUM in the 'Community' tab under 'Internships'.</p>
Goals	Knowledge of: The registration is intended for students who aim for a career in a clinically oriented discipline of psychology or who plan to attend the Dutch postgraduate training programme for health care psychology (GZ-psychology).
Instruction language	NL
Prerequisites	<p>The psychodiagnostics registration (i.e., the BAPD) can be obtained for the 1-year FPN specialisations <i>Developmental Psychology, Neuropsychology, Health and Social Psychology, Psychology and Law and Work and Organisational Psychology</i> and the 2-year FPN specialisations <i>Neuropsychology, Psychopathology, and Forensic Psychology</i>. Registration is on the condition that students fulfil all the prerequisites set by the NIP, i.e., including a practical internship, writing three case reports, and having a specific theoretical background. With regard to the theoretical background: Students who graduate(d) in one of these FPN master's specialisations and have a (recent) FPN Bachelor's Degree in Psychology– fulfil the prerequisites regarding the theoretical background BAPD. Students who graduate(d) in one of the above FPN specialisations, but who hold a Bachelor's Degree in (I) Psychology issued by another university or (II) in any other field can potentially only obtain the registration through the NIP. This last-mentioned group of students should contact the FPN Examination Board in a timely manner, to discuss the alternatives.</p>
Recommended literature	
Teaching methods	<p>Patient contact</p> <p>Skills</p> <p>Training(s)</p>
Assessment methods	<p>Final paper</p> <p>Observation</p>

Key words

psychodiagnostics, clinical test use, health care psychologist