Maastricht University

Faculty of Psychology and Neuroscience / Faculty of Law / Faculty of Economics

Name minor: **Interfaculty Minor Human and Legal Decision-making**
(combining courses of FPN, FoL, SBE)

Full period of this minor: **September – December (period 1 and 2)**
ECTS credits in total of this minor: **24 ECTS**
Language of instruction: **English**

This (interfacultary) minor (24 ECTS) brings together perspectives on human and legal decision-making from law, neuroscience, psychology, philosophy, as well as economics. A joint collaboration between three UM faculties, it builds on the existing work of the Law, Economics (SBE) and Psychology & Neuroscience faculties, combining it with insights from and questions about neurolaw as well as its implications for legal and human decision-making. Researchers from all participating faculties are involved in the teaching of the associated courses.

Research has increasingly accumulated knowledge on the neuroscientific foundations and processes regarding human and legal decision-making. In this context, new scientific disciplines, such as decision neuroscience, forensic neuropsychology and neurolaw, have emerged and gained prominence. Partly due to the rapid advances that have been made, there is a general lack of understanding of the appropriate relationship between different fields of (social) sciences. This is evidenced by the rise of 'neuro-myths', such as the misconception that neuroimaging is capable of explaining decision-making behavior and legal behavior in a precise way and on individual level. Moreover, it remains unsettled to what extent and in which way judges and legislators ought to utilize these new types of evidence. Practicioners such as mental health professionals and lawyers are also faced with an increasing amount of neuroevidence and accordingly need to be aware of the benefits, dangers and challenges of this interdisciplinary approach.
The minor, as a whole, will provide the students with a basic understanding of the state of affairs regarding the current scientific knowledge on human and legal decision-making; the methodology used in research on decision-making; and finally the multifaceted relationship between the law, legal philosophy, neuroscience, psychology and economics. Owing to the variety of subjects covered by the minor, the content of the modules is adjusted to ensure that students from other disciplines are able to participate successfully in all courses.

The minor consists of four complementary courses; (1) neuropsychology & law, (2) legal decision-making & neurosciences, (3) law & neurosciences and (4) economic psychology. Below you may find the relevant information for each course including some examples of recommended literature; this may help you to gain some insight in the specific content and goals of each course.

Please be informed that there is a maximum of 57 participants for this minor program.

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For more information regarding the content of his minor, please contact david.roef@maastrichtuniversity.nl or nicki.vandijk@maastrichtuniversity.nl

Any questions regarding the formal registration procedure for this minor should be addressed to your home faculty as rules for permission to follow the minor (or to follow separate courses of this minor as an elective) may slightly differ in each faculty.

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Neuropsychology and law

Course period
period 1 (September – October)

Code
PSY3375

ECTS credits
6,0

Organisational unit
Faculty of Psychology and Neuroscience

Coordinator
Marko Jelicic

Description
The primary focus of this course is on the neurocognitive processes of criminal offenders. Contextual factors, such as the history and current state of neuropsychology and psychiatry, will be discussed to give students the prerequisite background knowledge of the topic. A considerable part of the course is devoted to neuropsychological abnormalities in criminal offenders who are affected by a psychiatric disorder. Attention will be given to the role of schizophrenia, bipolar disorder, and antisocial personality disorder and psychopathy. Another substantial part of the course pertains to offenders with an acquired brain injury. In this regard, traumatic brain injury, brain tumours as well as dementia will be addressed. The connection between neural abnormalities and criminal offences will be critically evaluated for each psychiatric or neurological disorder. A completely different side of neuropsychology and law, the effect of neurocognitive disorders in victims/witnesses of crimes on their eyewitness testimony, will also be dealt with.

Instruction language
EN

Prerequisites
Although there are no prerequisites for this course, some knowledge of neuroscience is necessary to understand the topics of this course. Therefore, in the first lecture a “crash course” on the structure and function of the brain will be given. In addition,

students without any knowledge of neuroscience are advised to read introductory chapters on the structure and function of the brain in basic books on neuropsychology (e.g., from B. Kolb & I.Q. Wishaw, Fundamentals of Human Neuropsychology, 5th, 6th or 7th edition).

Students report spending an average of 12 hours for each session.

Recommended literature
The literature for this course consists of state-of-the-art articles on forensic neuropsychology and law (and related issues). It is indicated for each session which reading materials should be studied beforehand. Examples of relevant literature:

Glenn, A.L. & Raine, A. (2014). Neurocriminology: Implications for the punishment, prediction and prevention of criminal behaviour. Nature Reviews: Neuroscience, 15, 54-63.
Fazel, S. et al. (2009). Neurological disorders and violence: A systematic review and meta-analysis with a focus on epilepsy and traumatic brain injury. Journal of Neurology, 256, 1591-1602.
Soyka, M. (2011). Neurobiology of aggression and violence in schizophrenia. Schizophrenia Bulletin, 37, 913-920.
Kiehl, K.A. & Hoffman, M.B. (2011). The criminal psychopath: History, neuroscience, treatment, and economics. Jurimetrics, 51, 355-396.

Teaching methods
PBL-tutorials (seven sessions) and lectures

Assessment methods
Written exam and paper

Important information: FPN electives are excluded in Grade Point Average (GPA)
At FPN the 3rd years electives are excluded in the calculation of the weighted average score of the examinations which are assessed on a ten-point scale. This regulation also applies to non-FPN students!

Legal decision-making and neurosciences

Course period
period 1 (September – October)

Code
LAW3024

ECTS credits
6,0
Coordinator
Ruben Knehans

Organisational unit
Faculty of Law

Description
In the legal arena, everything revolves around evidence and credibility. This course addresses the relevance and validity of various types of empirical evidence that regularly surface in courts of law. Particular attention is devoted to physiological measures (skin conductance and heart rate for example), brain imaging techniques (such as functional magnetic resonance imaging and positron emission tomography), neuropsychological assessments (cognitive tests and psychological questionnaires), and behavioral genetic evidence (twin and adoption studies but also research on specific genes such as monoamine oxidase A; “the warrior gene”). The decision-making processes that are essential to evaluate the credibility of such evidence will also take center stage. Students will be introduced to decision-making at an academic level and discover that the science behind it is real; it involves cognitive models of decision-making, psychometric testing, theoretical approaches to human error, logical analyses of arguments, and mathematical techniques to quantify the accuracy of decisions and the strength of evidence.

Please take note that although the title of this course resembles somewhat the name of the following course, i.e. ‘Law and Neurosciences’, there are some important differences between the two courses in terms content. While ‘legal decision-making and neurosciences’ explores primarily empirical and methodological issues relevant for the law, the course of ‘law and neurosciences’ (coordinator: David Roef) focuses specifically on different legal and philosophical questions raised by the interaction between neurosciences and the law (especially, but not exclusively from a criminal law perspective). In this sense the courses may complement, but don’t replace each other.

Instruction language
EN

Prerequisites
Although there are no prerequisites for this course, we expect good English language and writing skills. Furthermore, some basic knowledge of psychology, scientific methodology, and of neuroscience is useful to understand the topics of this course. Students who are not acquainted with these subjects are therefore required to study some introductory literature that will be made available during this course.

Students have reported spending an average of 12 hours for each session.

Recommended literature
The literature for this course consists of state-of-the-art articles on decision-making and neurobiological criminology.
Examples of representative literature:

Buckholtz, J. W., & Faigman, D. L. (2014). Promises, promises for neuroscience and law. *Current Biology, 24,* R861-R867.
Cornet, L. J. M. (2015). Using basic neurobiological measures in criminological research. *Crime Science, 4,* 1-16.

Dror, I. E. (2015). Cognitive neuroscience in forensic science: Understanding and utilizing the human element. *Philosophical Transactions of the Royal Society B: Biological Sciences, 370:* 20140255.
Swets, J. A., Dawes, R. M., & Monahan, J. (2000). Better decisions through science. *Scientific American, 283,* 82-87.

Teaching methods
PBL-tutorials (seven sessions) and lectures

Assessment methods
Written exam and paper or presentation

Maastricht University

Law & Neurosciences

Course Period:
Period 2 (October – December)

Code
Law3021

ECTS credits
6,0

Organisational unit
Faculty of Law

Coordinator
David Roef

Description
This course introduces students to the new interdisciplinary field of law, neuroscience and philosophy. It uses an integrative approach by addressing the relevancy of potential applications of neuroscience in the fields of both criminal law and civil law. The course aims, inter alia, to assist students in critically reflecting on the present and future possibilities pertaining to the intersection between law and neuroscience. It also explores how neuroscientific research may challenge the foundations and conditions of criminal and civil (tort) liability. The main themes of the course include the following: the neuroscientific challenge to free will and responsibility; the scientific and legal view on human agency and personhood; the problem of neuroreductionism (reducing mental states and behaviour to brain states); diagnosing and assessing mental capacities and disabilities; the use of neurological evidence in court; neuroscience and human rights and finally, we will focus on some neuro-criminological aspects and the predictive and rehabilitative use of neuroscientific techniques. Upon completion of this course, the student must be able to:

- understand the basic conditions of criminal and private law liability
- understand the different philosophical positions on the free will and determinism debate
- reflect on the neuroscientific challenges to free will, human agency and legal responsibility;
- understand the relevance of neuroscientific techniques as a diagnostic tool in order to determine mental capacities and disabilities, with a particular focus on the insanity defence;
- critically reflect on the use of science and the legal image of man;
- critically reflect on some neuro-myths;
- understand how neurosciences can contribute to our knowledge of pain assessment in tort liability;
- assess the value and limitations of neuroscientific evidence in court cases, including lie-detection;
- reflect on the value of neuroscientific techniques as a predictive tool for risk assessment;

- reflect on the use of neuroscientific techniques (especially direct brain interventions) to modify the brain in order to enhance people's responsibility

Instruction language
EN

Prerequisites
Although there are no prerequisites for this course, we expect good English language and writing skills. Also, some basic legal knowledge is necessary to understand the main topics of this course. Therefore, in the first two weeks some introductory lectures/knowledge clips will be given on the basic concepts of criminal law, especially for students without any knowledge of law. One is also required to study additionally chapters 2,4, and 6 from J. Hage & B. Akkermans (eds), Introduction to law, Springer, 2014 and chapters 1, 3 and 6 from J. Keiler & D. Roef (eds.), Comparative Concepts of Criminal Law, Cambridge, Intersentia, 2016. This additional literature will be made available in a reader.

Students report spending an average of 12-15 hours for each session.

Recommended literature
The literature for this course consists of state-of-the-art articles on neurolaw. It is indicated for each session which reading materials should be studied beforehand. Examples of relevant literature:

N. Vincent, 'On the relevancy of neuroscience to criminal responsibility', *Criminal Law and Philosophy*, 2009, 77-98;

M.S. Pardo & D. Patterson, *Minds, Brains , and Law. The Conceptual Foundations of Law and Neuroscience*, Oxford University Press, 2015, p.1-42; p. 79-140.

S. Morse, 'Determinism and the Death of Folk Psychology: Two Challenges to Responsibility From Neuroscience', *J.L.Sci & Techn*., 2008, 1-20;

F.X. Shen & O.D. Jones, 'Brain Scans as Evidence: Truths, Proofs, Lies and Lessons', *Mercer Law Review* ,2011, 861-883;

Teaching methods
PBL-tutorials (7 sessions) and lectures

Assessment methods
Written exam and paper

Economic psychology

Course period
period 2 (October – December)

Code
EBC2103

ECTS credits
6,0

Organisational unit
School of Business and Economics (SBE)

Coordinator
Peter Werner

Description
This course draws inspiration from the phenomenon which sees economists increasingly discovering psychology as a means to enrich their models of economic behaviour and well-being and to give them a better foundation. It aims to introduce students to the key concepts and current issues of economic psychology. The first part of the course addresses insights from psychology and behavioural economics associated with judgment and decision-making. Here, basic principles of rationality are compared with actual behaviour in decision-making. The second part of the course deals with applications of how psychological mechanisms influence economic decision-making in the field and the relevance of these mechanisms for law and public policy. Moreover, the course gives an introduction to the research field of neuroeconomics.

Instruction language
EN

Prerequisites
The course is taught in a self-contained manner. Basic familiarity with expected utility theory and statistical concepts (e.g., expected value) is very helpful but not necessary.
Students report spending an average of 12 hours per week on the course

Recommended literature
The literature for this course consists of the main textbook (listed below), journal articles, and a few supplementary book chapters. It is indicated for each session which reading materials should be studied beforehand.
Main textbook:
Hastie, Reid, and Robyn M. Dawes, eds. *Rational choice in an uncertain world: The psychology of judgment and decision making*. Sage, 2010.

Teaching methods

PBL-tutorials and lectures

Assessment methods
Written exam, presentation, participation