



Artificial Intelligence MSc

Vrije Universiteit Amsterdam - Faculteit der Exacte Wetenschappen - M Artificial Intelligence - 2016-2017

Research in Artificial Intelligence concerns the analysis and modelling of tasks that are commonly assumed to require human intelligence, as well as the design of systems that can perform or support such tasks. Such research requires a wide variance of activities, from observing and interviewing human expert to designing and implementing computer programs, and creating mathematical models.

Artificial Intelligence integrates computer science with (cognitive) psychology. Other ingredients are biology, linguistics, philosophy and logic, all used to understand and describe the underlying principles of human cognitive processes, including reasoning and natural language understanding. For these reasons Artificial Intelligence is a broad and multi-disciplinary research area.

The programme consists of a Bachelors study (taking 3 years) and a Master study (taking 2 years). The Bachelors study is dedicated to providing the student with a broad and thorough basis in Artificial Intelligence, whereas the Masters provides the student with an opportunity to specialise in an area and further deepen his knowledge of AI in general. Both Bachelors and Masters studies are organised by the Faculty of Sciences in close cooperation with the Faculty of Psychology and Pedagogy, and the Faculties of Arts. Furthermore, the students can follow courses at the Universiteit van Amsterdam. Information about the Bachelor programme can be found in a separate study guide.

Depending on the chosen Master programme the student attends lectures in other faculties, for example Psychology, Linguistics, Economy, Law, Social Sciences, and Biology. Graduation projects vary from practical to rather fundamental, depending on the preferences and capacities of the students. Students can go to companies, research institutes or universities either in The Netherlands or abroad.

Examples of projects and locations, and more information on what such a project entails, can be found at: [Term Projects](#).

Masters in Artificial Intelligence are employed by companies that develop AI-systems either for their own company (for example banks, insurance companies) or in commission for other companies (software companies). Masters in AI are also employed as consultants, for example for the management of knowledge within organisations. Research and education is another area where masters in AI build a future for themselves, for example at universities or research institutes doing research in Artificial Intelligence.

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Research Variant Cognitive Science

This specialisation focuses on the study of human cognition through computational methods. The programme is organised based on a close collaboration between the Faculty of Sciences (Department of Computer Science) and the Faculty of Psychology and Education (Department of Cognitive Psychology), and indeed includes courses from both departments.

Students in Cognitive Science come from a wide range of backgrounds – including psychology, computer science, artificial intelligence, philosophy, mathematics, neuroscience, and others – but share the common goal, to get a better understanding of the human mind through computational modelling. The developed models can roughly be applied from two perspectives. Firstly, from a more theoretical perspective, cognitive models (e.g., of perception, attention, or decision making) can serve as a useful tool for researchers to gain more insight in the dynamics of cognitive processes by building (and simulating) them. Secondly, from a more practical perspective, cognitive models can serve as a basis for the development of artefacts that either show or understand human-like behaviour. Examples of artefacts that show human-like behaviour are virtual characters in (serious) games, and examples of artefacts that understand human-like behaviour are intelligent support systems in cars or in military domains.

The programme consists of 120 credits

Note: Every programme, including the choice of optional courses, has to be discussed and agreed upon with the master coordinator or a personal mentor and approved by the Examination Board.

Opleidingsdelen:

- [Recommended Optional Courses](#)
- [Constrained Choice Data Analysis](#)
- [Compulsory Courses](#)
- [Constrained Choice](#)

Recommended Optional Courses

Vakken:

Naam	Periode	Credits	Code
Agent Systems	Periode 4	6.0	XMU_405123
Behaviour Dynamics in Social Networks	Periode 2	6.0	X_400113
History of digital cultures	Periode 3	6.0	XMU_418107
ICT4D: Information and communication technology for Development	Periode 5	6.0	X_405101
Internet programming	Periode 1	6.0	X_405082
Memory and Memory Disorders	Periode 2	6.0	P_MMEMORY

Mini-Master Project AI	Ac. Jaar (september)	6.0	XM_400428
Review Paper	Ac. Jaar (september)	6.0	P_MREVPAP
Seminar Attention	Periode 5	6.0	P_MSEMATT
Watson Innovation	Periode 2	6.0	X_405129

Constrained Choice Data Analysis

Vakken:

Naam	Periode	Credits	Code
Advanced Data Analysis	Periode 1	6.0	P_MADVDAT
Experimental Design and Data Analysis	Periode 5	6.0	X_405078

Compulsory Courses

Note: Every programme, including the choice of optional courses, has to be discussed and agreed upon with the master coordinator or a personal mentor and approved by the Examination Board.

Vakken:

Naam	Periode	Credits	Code
Brain Imaging	Periode 4	6.0	P_MBRIMAG
Interdisciplinary Research Methodology for IS	Periode 2	6.0	X_405085
Knowledge Engineering	Periode 2+3	6.0	X_405099
Machine Learning for the Quantified Self	Periode 6	6.0	XM_40012
Model-based Intelligent Environments	Periode 5	6.0	X_405056
Neural Models of Cognitive Processes	Ac. Jaar (september)	6.0	P_MNEUMOD
Seminar Cognitive Neuroscience	Periode 1	6.0	P_MSEMCNS

Constrained Choice

Vakken:

Naam	Periode	Credits	Code
Master Project	Ac. Jaar (september)	30.0	X_400285
Master Thesis: Research Project Cognitive Science	Ac. Jaar (september)	30.0	P_MTHRCSC

Socially Aware Computing

Opleidingsdelen:

- [Optional Courses](#)
- [Constrained Choice Data Analysis](#)
- [Compulsory Courses](#)

Optional Courses

Vakken:

Naam	Periode	Credits	Code
Advanced Logic	Periode 4	6.0	X_405048
Aging and Dementia	Periode 2, Periode 3+4	6.0	P_MAGINGD
Beleid en management	Periode 1	6.0	S_BLM
Brain Imaging	Periode 4	6.0	P_MBRIMAG
Computational Intelligence	Periode 2	6.0	XMU_417015
Coordination Dynamics: principles and applications	Periode 2	6.0	B_CLINCORDYN
Data Mining Techniques	Periode 5	6.0	X_400108
Dynamica van Lineaire Systemen	Periode 1	3.0	B_DYNAMICA
Energy Flow Models	Periode 1	3.0	B_ENERFLOW
Evolutionary Computing	Periode 1	6.0	X_400111
Fysieke veiligheid en crisisbeheersing	Periode 4	6.0	S_FVC
Governance of Security and Policing	Periode 2	6.0	S_GSP
Health Promotion and Disease Prevention	Periode 2	6.0	AM_470811
Health Psychology	Periode 2	6.0	AM_470730
History of digital cultures	Periode 3	6.0	XMU_418107
ICT4D: Information and communication technology for Development	Periode 5	6.0	X_405101
Information Retrieval 1	Periode 3	6.0	XMU_418043
Knowledge and Media	Periode 1	6.0	X_405065
Knowledge Representation on the Web	Periode 5	6.0	XMU_418169
Memory and Memory Disorders	Periode 2	6.0	P_MMEMORY
Mini-Master Project AI	Ac. Jaar (september)	6.0	XM_400428
Misdaanalyse en daderprofilering	Periode 2, Periode 4	6.0	R_Misd.anaC
Networked Organizations and Communication	Periode 2	6.0	S_NOC

Neural Models of Cognitive Processes	Ac. Jaar (september)	6.0	P_MNEUMOD
Ondernemerschap en innovatie, een relationeel perspectief	Periode 2	6.0	S_OIRP
Perception for Action	Periode 4	3.0	B_PERCACTION
Prevention of Mental Health Problems	Periode 3	6.0	AM_470840
Psychology of Effective Gaming	Periode 1	6.0	XMU_418145
Seminar Attention	Periode 5	6.0	P_MSEMATT
Seminar Cognitive Neuroscience	Periode 1	6.0	P_MSEMCNS
Serious Games	Periode 5	6.0	X_405097
Spatial Criminology	Periode 5	6.0	R_SpaCrim
Technology for Games	Periode 2	6.0	XMU_418146
The Social Web	Periode 4	6.0	X_405086
Veiligheid en burgerschap	Periode 2	6.0	S_VB
Watson Innovation	Periode 2	6.0	X_405129

Constrained Choice Data Analysis

Vakken:

Naam	Periode	Credits	Code
Advanced Data Analysis	Periode 1	6.0	P_MADVDAT
Experimental Design and Data Analysis	Periode 5	6.0	X_405078

Compulsory Courses

Vakken:

Naam	Periode	Credits	Code
Agent Systems	Periode 4	6.0	XMU_405123
Behaviour Dynamics in Social Networks	Periode 2	6.0	X_400113
Cognitive Psychology and its Applications	Periode 1	6.0	XM_40010
Intelligent Interactive Systems	Periode 1	6.0	XMU_418023
Interdisciplinary Research Methodology for IS	Periode 2	6.0	X_405085
Knowledge Engineering	Periode 2+3	6.0	X_405099
Machine Learning for the Quantified Self	Periode 6	6.0	XM_40012

Master Project	Ac. Jaar (september)	30.0	X_400285
Model-based Intelligent Environments	Periode 5	6.0	X_405056

Advanced Data Analysis

Vakcode	P_MADV DAT (815033)
Periode	Periode 1
Credits	6.0
Voertaal	Engels
Faculteit	Fac. der Gedrags- en Bewegingswetensch.
Coördinator	dr. M. Gallucci
Examinator	dr. M. Gallucci
Docent(en)	dr. M. Gallucci
Lesmethode(n)	Hoorcollege
Niveau	400

Doel vak

This course provides a theoretical overview and detailed practical knowledge concerning statistical analyses of psychological data.

Inhoud vak

After an introduction of the general linear model, with emphasis on estimation of effect sizes and hypothesis testing, the course concentrates on applications of the model, such as analysis of variance, regression analysis, path analysis, and logistic regression. Along with these techniques, issues such as mediation, moderation, and hypothesis testing are considered. The aim of the course is to enable students to plan, execute, and interpret appropriate statistical analyses for applied and experimental research data. Because the application of advanced statistical techniques is central to the course, students will have several assignments to analyze existing data sets, and interpret the results.

Onderwijsvorm

Lectures and tutorials.

Toetsvorm

Exam and assignments.

Literatuur

- Cohen, J., Cohen, P., West, S.G., & Aiken, L.S. (2003), Applied Multiple regression / correlation; analysis for the behavioural sciences (3rd ed.) Hillsdale, NJ: Erlbaum
- Additional material provided during the course.

Advanced Logic

Vakcode	X_405048 (405048)
Periode	Periode 4
Credits	6.0
Voertaal	Engels

Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. F. van Raamsdonk
Examinator	dr. F. van Raamsdonk
Docent(en)	dr. F. van Raamsdonk
Lesmethode(n)	Hoorcollege, Werkcollege
Niveau	500

Doel vak

The objective is to obtain a good understanding of modal logic and its use in computer science and artificial intelligence.

Inhoud vak

A thorough introduction to modal logics, and its applications in computer science and artificial intelligence. We will select some themes from the book *Modal Logics for Open Minds*, by Johan van Benthem: basic modal logic and possible world semantics, bisimulation and invariance, modal definability, decidability, ... In particular we treat the modal logics most relevant to computer science and AI: temporal, dynamic and epistemic logic.

Onderwijsvorm

Weekly 2 lectures and 1 exercise class, for the duration of 7 weeks.

Toetsvorm

A written exam and assignments that can make half a point bonus.

Literatuur

Johan van Benthem, *Modal Logics for Open Minds*, CSLI Publications 2010.

Aanbevolen voorkennis

The bachelor course *Logic and Modelling* or an equivalent introduction to first-order logic.

Doelgroep

mAI, mCS, mPDCS

Agent Systems

Vakcode	XMU_405123 ()
Periode	Periode 4
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. T. Bosse
Examinator	dr. M.C.A. Klein
Niveau	400

Inhoud vak

<http://studiegids.uva.nl/xmlpages/page/2016-2017/zoek-vak/vak/29783>

Overige informatie

This course is offered at the UvA. For more information contact: FNWI Education Service Centre, Science Park 904,

servicedesk-esc-science@uva.nl, +31 (0)20 525 7100.
Enrolment via <https://m.sis.uva.nl/vakaanmelden> is required.

Aging and Dementia

Vakcode	P_MAGINGD (815181)
Periode	Periode 2, Periode 3+4
Credits	6.0
Voertaal	Engels
Faculteit	Fac. der Gedrags- en Bewegingswetensch.
Coördinator	prof. dr. E.J.A. Scherder
Examinator	prof. dr. E.J.A. Scherder
Docent(en)	prof. dr. E.J.A. Scherder
Lesmethode(n)	Hoorcollege
Niveau	400

Doel vak

Provide an advanced course on the neuropathological, cognitive and behavioural consequences of aging and age- related neurodegenerative diseases, in particular dementia.

Inhoud vak

The neuropathology characteristic for aging and various subtypes of dementia will be related to specific functional neuronal circuits. Based on these functional neuronal circuits the clinical outcome in terms of cognitive and behavioural disorders will be explained. Specific attention will be given to the relationship between dementia and motor activity and between dementia and pain experience.

Onderwijsvorm

Plenary lectures, with an emphasis on interaction with the students.

Toetsvorm

Open-end questions or mc questions

Literatuur

E. Scherder. Aging and Dementia. Neuropsychology, motor skills and pain. VU Uitgeverij.

Overige informatie

This course will be lectured twice:

- In periode 2 the course is scheduled for the Research master Cognitive neuropsychology.
- In period 3 the course is scheduled for the Master psychology, track Clinical neuropsychology.

Behaviour Dynamics in Social Networks

Vakcode	X_400113 (400113)
Periode	Periode 2
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen

Coördinator	prof. dr. J. Treur
Examinator	prof. dr. J. Treur
Docent(en)	prof. dr. J. Treur
Lesmethode(n)	Hoorcollege, Practicum
Niveau	400

Doel vak

To learn how to identify, specify and predict different types of mental and social processes; to understand how individual and social behaviour emerges from mechanisms known from Cognitive, Affective and Social Neuroscience, and from Cognitive and Social Sciences; to be able to construct network models for mental and social interaction processes; to perform analysis based on these models using Network-Oriented Modeling software tools and empirical data.

Inhoud vak

This course is a multidisciplinary course, also accessible for students from other disciplines such as Neuroscience, Psychology or Social Sciences. Behaviour dynamics occurs in different forms, contexts and complexity. Complexity can occur in the mental processes within persons or in social interaction processes, or in both. Both types of processes can be adaptive: mental processes can change due to learning, and social interactions can also evolve over time. Theories and findings from Cognitive, Affective and Social Neuroscience and also from Cognitive and Social Sciences are presented and used to get insight in the underlying mechanisms that form a solid scientific basis for modelling of these processes. In the course a Network-Oriented Modeling approach based on temporal-causal networks is used to model both these internal mental processes (as networks of mental states) and social interaction processes (as social networks). During the course several examples are studied. These examples cover imagination and dreaming by internal simulation, integration of emotions in all kinds of mental and social processes, learning of emotion regulation, ownership and attribution of actions, empathic social responses, empathic joint decision making, development of shared understanding and collective action, and different principles for evolving social networks.

The dynamics of such processes is modeled, simulated and analysed (including verification and validation) in this course using dedicated and easy to use modelling environments for Network-Oriented Modeling; no programming is needed. In the last few weeks of the course a more ambitious final assignment is addressed, which can be worked out to a paper that may be submitted to an international conference where it could be presented and provide a publication.

Onderwijsvorm

Combinations of lectures and practical assignments.

Toetsvorm

Practical assignments.

Literatuur

Treur, J., Network-Oriented Modeling: Addressing Complexity of Cognitive, Affective and Social Interactions. Series on Understanding Complex Systems, Springer Publishers, October 2016.

URL: <http://www.springer.com/gp/book/9783319452111#aboutBook>

doi: <http://dx.doi.org/10.1007/978-3-319-45213-5>

Table of Contents: <http://www.few.vu.nl/~treur/cve/Papers/NOMToC.pdf>

In digital form free downloadable from the VU.

Aanbevolen voorkennis

Some background in modeling.

Doelgroep

mAI and multidisciplinary master studies from Psychology, Neurology and Social Sciences

Beleid en management

Vakcode	S_BLM ()
Periode	Periode 1
Credits	6.0
Voertaal	Nederlands
Faculteit	Faculteit der Sociale Wetenschappen
Coördinator	R.J. van Putten MA MSc.
Examinator	dr. D.B.D. Bannink
Docent(en)	dr. mr. A.J.G.M. van Montfort, prof. dr. W.A. Trommel, dr. D.B.D. Bannink, R.J. van Putten MA MSc.
Lesmethode(n)	Hoorcollege, Werkgroep

Doel vak

Studenten die dit vak hebben gevolgd, hebben inzicht in bestuurlijke beheersingsinstrumenten en hebben oog voor problematische beheersingsambities van het bestuur in een laatmoderne samenleving. Daarbij beschikken ze zowel op beleidsniveau als op meer reflectief niveau over concepten en perspectieven die helpen om te 'besturen voorbij beheersen'.

Studenten hebben na dit vak kennis van en inzicht in:

1. de relatie tussen maakbaarheid, bestuur en (laat)moderne samenleving;
2. beheersingsinstrumenten van de overheid;
3. bestuurlijke en maatschappelijke ontwikkelingen die 'besturen via beheersing' problematisch maken;
4. problemen met beheersingsdenken in het bestuur vanuit bestuurskundig, bestuurssociologisch en bestuursfilosofisch perspectief;
5. perspectieven op 'besturen voorbij beheersen' in termen van 'bescheiden bestuur';
6. een kritische bestuurskundige benadering van bestuur in de laatmoderne samenleving.

Studenten kunnen na dit vak:

1. zelfstandig in een zelfgekozen casus uit de (semi)publieke sector problemen met beheersing analyseren vanuit bestuurskundig, bestuurssociologisch en bestuursfilosofisch perspectief en vervolgens oplossingsrichtingen doordenken en voorstellen in termen van 'bescheiden bestuur' doen, op basis van theorieën en concepten die in de voorgeschreven literatuur zijn aangereikt;
2. via toepassing van de literatuur op de gekozen casus een kritische analyse uitvoeren en creatief met nieuwe bestuurskundige theorieën en inzichten omgaan bij het uitwerken van een oplossingsrichting;
3. via toepassing van de literatuur op de gekozen casus kritisch op de lesstof reflecteren vanuit de casus;
4. op academisch masterniveau schriftelijk rapporteren over de

bevindingen van hun analyses, voorstellen en reflecties.

Inhoud vak

Besturen heeft in de moderne samenleving steeds meer trekken gekregen van pogingen tot het maken en perfectioneren van de samenleving: modern besturen is beheersen. Hierachter schuilen idealen van maakbaarheid. De typische gestalten hiervan uit de twintigste eeuw zijn de ontwikkeling van bureaucratie en verzorgingsstaat. Ondanks veel kritiek op de maakbaarheidsambities lijkt het streven naar beheersing alleen maar groter geworden. Zo dreigt nu een preventiestaat te ontstaan, waarbij de staat steeds indringender in de samenleving optreedt. In dit vak gaan we met deze thematiek aan de slag. Twee vragen staan centraal. Ten eerste: in hoeverre is besturen door beheersen problematisch geworden en waarom? Vanuit sociologisch, filosofisch en beleidskundig perspectief wordt het beheersingsstreven geanalyseerd. Ten tweede: hoe kan 'besturen voorbij beheersen' gestalte krijgen? Dan gaan we theoretisch en empirisch op zoek naar nieuwe, meer bescheiden, perspectieven op bestuur. Studenten verdiepen zich tijdens dit vak dus in een fundamenteel vraagstuk voor zowel de praktijk van het publiek bestuur als de bestuurswetenschappen. Studenten worden uitgedaagd om kritisch en normatief te reflecteren op actuele bestuurlijke ontwikkelingen in een zelfgekozen casus.

Toetsvorm

Schriftelijke opdracht

Literatuur

- Nader op te geven c.q. te verstrekken literatuur en beleidsdocumenten.

Doelgroep

Masterstudenten Bestuurskunde

Brain Imaging

Vakcode	P_MBRIMAG (815103)
Periode	Periode 4
Credits	6.0
Voertaal	Engels
Faculteit	Fac. der Gedrags- en Bewegingswetensch.
Coördinator	dr. T.H.J. Knapen
Examinator	dr. T.H.J. Knapen
Docent(en)	dr. T.H.J. Knapen, D.M. van Es MSc
Lesmethode(n)	Hoorcollege
Niveau	400

Doel vak

Students will learn to analyse and interpret imaging data from different modalities, such as fMRI and EEG. Emphasis will be placed on the analysis of imaging data as time series.

Inhoud vak

Treatment of the mathematical and physical concepts of the different recording techniques, among which basic linear algebra, Fourier analysis and GLM.

Students will learn to programmatically analyse fMRI and EEG data using Python. Standard GLM analysis for fMRI is conducted using FSL.

Half of the course will be practicals in which students will gain hands-on experience with EEG and fMRI data analysis using open-source tools. Each student will be required to discuss one paper from the field at the end of the course.

Onderwijsvorm

Class teaching, Practicals, Presentations

Toetsvorm

Final Exam, open-end questions 40%
Practical assignments 40%
Article presentation 20%

Literatuur

Handbook of Functional MRI Data Analysis, Poldrack et al, Cambridge press. Further EEG analysis literature to be announced.

Overige informatie

Prior knowledge of Python programming and statistics is recommended.

Cognitive Psychology and its Applications

Vakcode	XM_40010 ()
Periode	Periode 1
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. A.V. Belopolskiy
Examinator	dr. A.V. Belopolskiy
Docent(en)	dr. A.V. Belopolskiy
Lesmethode(n)	Hoorcollege
Niveau	400

Doel vak

The course aims to provide an overview of cognitive psychology and its applications

Inhoud vak

The course covers a number of central principles from the area of cognitive psychology and how these principles can be applied in the design of modern man-machine systems including human-computer systems. A variety of topics will be discussed such as mental workload, decision-making, driving behavior, route finding, and display design.

Onderwijsvorm

Lectures

Toetsvorm

Open-end exam

Literatuur

To be announced

Doelgroep

The course Cognitive Psychology and its Applications will be part of the new RM Socially Aware Computing (FEW)

Overige informatie

The course Cognitive Psychology and its Applications is a core course in the newly developed RM Socially Aware Artificial Intelligence (AI, FEW) which will start 2016/2017. Two core qualifications of a graduate with a Master Diploma in Socially Aware Artificial Intelligence are: -"Has basic knowledge of physiological, psychological, or social aspects of human functioning that can be exploited in Socially Aware Artificially Intelligent systems." -"Has in-depth knowledge, insight and skills in at least one area of the human-oriented disciplines, e.g. Clinical and Cognitive Psychology, Social Sciences, Movement Sciences, Criminology, or Medicine." The course Cognitive Psychology and its Applications contributes to these two qualifications.

Computational Intelligence

Vakcode	XMU_417015 ()
Periode	Periode 2
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	prof. dr. A.E. Eiben
Examinator	prof. dr. A.E. Eiben
Lesmethode(n)	Hoorcollege
Niveau	400

Inhoud vak

<http://studiegids.uva.nl/xmlpages/page/2016-2017/zoek-vak/vak/22870>

Overige informatie

This course is offered at the UvA. For more information contact: FNWI Education Service Centre, Science Park 904, servicedesk-esc-science@uva.nl, +31 (0)20 525 7100. Enrolment via <https://m.sis.uva.nl/vakaanmelden> is required.

Coordination Dynamics: principles and applications

Vakcode	B_CLINCORDYN (900666)
Periode	Periode 2
Credits	6.0
Voertaal	Engels
Faculteit	Fac. der Gedrags- en Bewegingswetensch.
Coördinator	dr. M. Roerdink
Examinator	dr. M. Roerdink
Docent(en)	dr. M. Roerdink
Lesmethode(n)	Hoorcollege, Computerpracticum, Practicum, Bijeenkomst, Deeltoets extra zaalcapaciteit
Niveau	400

Doel vak

The coordination dynamics approach is pursued to study how patterns of coordinated movement come about, persist and change as a function task constraints, expertise and pathology. The student is acquainted with the key principles, concepts and methods of coordination dynamics. The student can explain these aspects in a qualitative manner. The student is able to indicate how these aspects may contribute to assessments and interventions in the context of sports and rehabilitation. The student can interpret, present and discuss scientific literature in the area of coordination dynamics. The student can design new coordination dynamics experiments. Students can critically evaluate the usefulness of coordination dynamics literature for science and education.

Inhoud vak

Coordination dynamics is governed on the one hand by principles of self-organization, and on the other hand by intentionality, perceptual information and explicit knowledge. Coordination patterns exist at multiple levels: 1. dynamics within or between body segments of a moving person; 2. dynamics between moving segments of multiple persons and 3. dynamics between person and external events, as well as between persons. Coordination dynamics provides a framework to study the nature of pathological, normal and expert movements by assessing stability and loss of stability of coordination patterns as a function of training and rehabilitation.

The first part of the course provides an overview of the key principles, concepts and methods of coordination dynamics by adopting a 3-stage empirical approach: 1. gaining background theoretical information through lectures and literature, 2. gaining hands-on experience by participating in experiments, formulating hypotheses and analyzing the so-obtained data, 3. gaining a thorough understanding of the key aspects of coordination dynamics by linking theory and practice.

The second part of the course focuses on the application of coordination dynamics in sports and rehabilitation, again by adopting a 3-stage empirical approach. In the context of rehabilitation, specific emphasis will be placed on interventions based on environmental coupling aimed at facilitating desired coordination patterns and/or stabilizing existing unstable coordination patterns. In the context of sports, the nature of interactions between two or more athletes will be the focal point, including their cooperative and competitive effects on pattern formation and coordinative stability.

Throughout the course, students will work individually and in small groups on journal club assignment using (relatively) new coordination dynamics literature from one of the 5 proposed areas of interest. Core aspects of the assignment are 1) highlighting the central concepts of the coordination dynamics framework employed in the paper, 2) presenting and discussing the novel insights obtained, 3) describing the next step(s) in terms of experimental research, and 4) elaborating on the suitability of the selected papers as reading material for next year's course.

Onderwijsvorm

Amount of contact hours (36 hrs), divided in:

Lectures: 10 * 1.75 hrs

Laboratories and journal club workshop: 2 * 2.00 hrs

Computer Practicals: 5 * 2.00 hrs

Optional Midterm Exam: 1 * 1.75 hrs

Final Exam: 2.75 hrs

Self study: 132 hrs

Toetsvorm

Journal club assignments (presentation and writing assignment) and two written closed-book exams with open-ended questions (optional mid-term exam and compulsory final exam). The final grade is established with an accuracy of 0.5 and is determined by the optional midterm exam (35%), the final exam (35%), the journal club presentation (10%) and the journal club writing assignment (20%). However, in case the grade of the optional midterm exam is lower than that of the compulsory final exam, only the grade obtained for the Final Exam will count (i.e., Midterm Exam [0%], Final Exam [70%], Journal Club [30%]). The same holds for students who did not complete the midterm exam.

Literatuur

A selection of relevant book chapters and articles.

Vereiste voorkennis

Basic understanding of statistics (What is a standard deviation?), sine waves (What is the amplitude, offset, frequency and phase?), integral and differential calculus (What is the derivative of a sine wave?) and Matlab (Can you run a script?). Please note that Matlab scripts and functions are provided and so programming skills are not required for the computer practicals. Computer practicals are included to become acquainted with the handling and interpretation of the experimental data and associated coordination dynamics outcome measures).

Intekenprocedure

For more info on journal club workshops, laboratories, (computer) practicals etc.
please see Blackboard.

Data Mining Techniques

Vakcode	X_400108 (400108)
Periode	Periode 5
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. M. Hoogendoorn
Examinator	dr. M. Hoogendoorn
Docent(en)	dr. M. Hoogendoorn
Lesmethode(n)	Hoorcollege
Niveau	500

Doel vak

The aim of the course is that students acquire data mining knowledge and skills that they can apply in a business environment. How the aims are to be achieved: Students will acquire knowledge and skills mainly through the following: an overview of the most common data mining algorithms and techniques (in lectures), a survey of typical and interesting data mining applications, and practical assignments to gain "hands on" experience. The application of skills in a business

environment will be simulated through various assignments of the course.

Inhoud vak

The course will provide a survey of basic data mining techniques and their applications for solving real life problems. After a general introduction to Data Mining we will discuss some "classical" algorithms like Naive Bayes, Decision Trees, Association Rules, etc., and some recently discovered methods such as boosting, Support Vector Machines, and co-learning. A number of successful applications of data mining will also be discussed: marketing, fraud detection, text and Web mining, possibly bioinformatics. In addition to lectures, there will be an extensive practical part, where students will experiment with various data mining algorithms and data sets. The grade for the course will be based on these practical assignments (i.e., there will be no final examination).

Onderwijsvorm

Lectures (h) and compulsory practical work (pra). Lectures are planned to be interactive: there will be small questions, one-minute discussions, etc.

Toetsvorm

Practical assignments (i.e. there is no exam). There will be two assignments done in groups of three. There is a possibility to get a grade without doing these assignments: to do a real research project instead (which will most likely to involve more work, but it can also be more rewarding). For the regular assignments the first assignment counts for 40% and the second for 60%. The grade of both assignments needs to be sufficient to pass the course.

Literatuur

Ian H. Witten, Eibe Frank, Mark A. Hall, Data Mining: Practical Machine Learning Tools and Techniques (Third Edition). Morgan Kaufmann, January 2011
ISBN 978-0-12-374856-0

Aanbevolen voorkennis

Kansrekening and Statistiek or Algemene Statistiek (knowledge of statistics and probabilities) or equivalent. Recommended: Machine Learning.

Doelgroep

mBA, mCS, mAI, mBio

Dynamica van Lineaire Systemen

Vakcode	B_DYNAMICA (900314)
Periode	Periode 1
Credits	3.0
Voertaal	Nederlands
Faculteit	Fac. der Gedrags- en Bewegingswetensch.
Coördinator	dr. R.J. van Beers
Examinator	dr. R.J. van Beers
Docent(en)	dr. R.J. van Beers
Lesmethode(n)	Hoorcollege, Computerpracticum

Doel vak

Het gedrag van veel systemen in de bewegingswetenschappen, van biochemisch proces tot bewegingsapparaat, kan alleen worden beschreven in termen van differentiaalvergelijkingen. De theorie van lineaire dynamische systemen is een belangrijk hulpmiddel om het gedrag van deze systemen te begrijpen. Doel van de cursus is je bekend te maken met de beginselen van de theorie. Na het volgen van de cursus ben je in staat eenvoudige systemen te beschrijven in de vorm van een (gelineariseerde) differentiaalvergelijking of toestandsmodel, en het gedrag daarvan te interpreteren.

Inhoud vak

Eerste- en tweede-orde systemen en tijdvertragingen worden besproken aan de hand van hun differentiaalvergelijkingen en hun standaardresponsies. Deze eenvoudige systemen geven een goed beeld van de essentie van het gedrag van lineaire dynamische systemen. Het toestandsmodel wordt geïntroduceerd als een algemene manier om lineaire dynamische systemen te beschrijven. Er worden methoden gepresenteerd om toestandsmodellen op te stellen, uit een differentiaalvergelijking dan wel door koppeling van deelsystemen, en deze te analyseren. In werkelijkheid zijn vrijwel alle dynamische systemen in meerdere of mindere mate niet-lineair. Toch is het vaak zinvol om ze lokaal bij benadering als lineair te beschouwen. In de cursus leer je hoe je systemen kunt lineariseren, en daarmee relevante informatie over het niet-lineaire systeem verkrijgt. Diverse voorbeelden uit de bewegingswetenschappen illustreren de stof.

Onderwijsvorm

Hoorcolleges in combinatie met computerpractica en inleveropdrachten.

Urenverdeling:

16 uur hoor/responsiecollege;

24 uur voorbereiding colleges/practica;

21 uur computerpractica;

17 uur tentamenvoorbereiding;

2 uur tentamen.

Toetsvorm

schriftelijk tentamen

Het eindcijfer wordt bepaald voor 90% bepaald door het cijfer voor het schriftelijk gesloten boek tentamen, en voor 10% door de beoordeling van inleveropdrachten. Dit zijn geselecteerde practicumopdrachten waarvan de uitwerking schriftelijk moet worden ingeleverd.

Literatuur

Syllabus (interne publicatie).

Vereiste voorkennis

In deze cursus wordt ervan uitgegaan dat de student de stof behandeld in de cursussen Wiskunde (met name integreren en differentiëren, differentiaalvergelijkingen, en matrixrekening) en Meten van Fysische Grootheden beheerst. Bij de voorbeelden wordt uitgegaan van enige kennis op het gebied van Biomechanica.

Intekenprocedure

De indeling van werkgroepen/(computer)practica/tutorgroepen etc. vindt plaats via Blackboard.

Overige informatie

Deze cursus maakt deel uit van de minor BWSB. Het wordt aanbevolen om dit vak te volgen in combinatie met het vak Simulatiemodellen van skeletsystemen.

Energy Flow Models

Vakcode	B_ENERFLOW (900675)
Periode	Periode 1
Credits	3.0
Voertaal	Engels
Faculteit	Fac. der Gedrags- en Bewegingswetensch.
Coördinator	dr. J.J. de Koning
Examinator	dr. J.J. de Koning
Docent(en)	dr. J.J. de Koning
Lesmethode(n)	Hoorcollege, Computerpracticum
Niveau	500

Doel vak

To provide the student with knowledge about energy flow models, and so to enable the student to apply this knowledge in the modelling of human endurance performance.

Inhoud vak

Research in which exercise physiology and biomechanics are combined as a 'toolbox' is apparently unique and successful. This course familiarizes the student with one branch of this approach. Energy flow models, based on power equations, will be used to study performance determining factors in endurance sports. This course explains the technique of modelling, how parameter values are obtained from experiments and how simulations with the model can be done. The student will construct a model of an endurance athlete to study the effect of parameter values on performance in cycling, speed skating and running. The models will be made in MATLAB. Knowledge of MATLAB is necessary to be successful in this course.

Onderwijsvorm

Lectures and guided practical;
84 hours (from which 28 practical, 6 lecture, 2 exam and 48 self study).

Toetsvorm

Written examination and practical report (30%/70%).

Literatuur

A selection of articles and practical guide on Blackboard.

Vereiste voorkennis

900104: Biomechanica (Students are expected to have sufficient knowledge of this subject);

900215: Mechanische analyse van het menselijk bewegen (Students are expected to have sufficient knowledge of this subject)

Intekenprocedure

For more info on workgroups, laboratories, (computer) practicals etc. please see Blackboard.

Evolutionary Computing

Vakcode	X_400111 (400111)
Periode	Periode 1
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	prof. dr. A.E. Eiben
Examinator	prof. dr. A.E. Eiben
Docent(en)	prof. dr. A.E. Eiben, J.V. Heinerman MSc
Lesmethode(n)	Hoorcollege
Niveau	400

Doel vak

To learn about computational methods based on Darwinian principles of evolution. To illustrate the usage of such methods as problem solvers and as simulation tools. To gain hands-on experience in performing experiments.

Inhoud vak

The course is treating various algorithms based on the Darwinian evolution theory. Driven by natural selection (survival of the fittest), an evolution process is being emulated and solutions for a given problem are being "bred". During this course all "dialects" within evolutionary computing are treated (genetic algorithms, evolutiestrategieën, evolutionary programming, genetic programming, and classifier systems). Applications in optimisation, constraint handling, machine learning, and robotics are discussed. Specific subjects handled include:

various genetic structures (representations), selection techniques, sexual and asexual variation operators, (self-)adaptivity. Special attention is paid to methodological aspects, such as algorithm design and tuning. If time permits, subjects in Artificial Life will be handled. Hands-on-experience is gained by a compulsory programming assignment.

Onderwijsvorm

Oral lectures and compulsory programming assignment (in teams of 3). Highly motivated students can replace the programming assignment by a special research track under the personal supervision of the lecturer (s).

Toetsvorm

Written exam and programming assignment (weighted average).

Literatuur

Eiben, A.E., Smith, J.E., Introduction to Evolutionary Computing. Springer, 2015, 2nd edition, ISBN 978-3-662-44873-1.

Vereiste voorkennis

Programming skills are necessary to do the practical assignment.

Doelgroep

mBA, mAI, mCS, mPDCS

Experimental Design and Data Analysis

Vakcode	X_405078 ()
Periode	Periode 5
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. E.N. Belitser
Examinator	dr. E.N. Belitser
Docent(en)	dr. E.N. Belitser
Lesmethode(n)	Hoorcollege, Practicum
Niveau	400

Doel vak

In this course the student is acquainted with the most common experimental designs and regression models. Furthermore, nonparametric tests and bootstrap methods are discussed. On completion of this course the student should be able to:

- design experiments and analyse the results according to the design,
- analyse data using the common ANOVA designs,
- analyse data using linear regression or a generalized linear regression model,
- perform basic nonparametric tests,
- perform bootstrap and permutation tests.

Inhoud vak

Regression models try to explain or predict a dependent variable using measured independent variables. Statistical methods are needed if there is random variation in the dependent variables. We will discuss multiple linear regression, analyses of variance (ANOVA), generalized linear regression models. All methods will be illustrated with practical examples. Especially in the case of ANOVA it is necessary that the study is well designed in order to draw sound conclusions from an experiment or survey. In this course a few well known designs (completely randomized, randomized block etc.) and the associated analyses of variance are discussed. The remainder of the course is be dedicated to non-parametric testing methods and bootstrap methods:

- Wilcoxon test for (one and two samples),
- Kolmogorov-Smirnov test (two samples),
- rank correlation tests,
- permutation and bootstrap tests.

All analyses are carried out by using the statistical package R.

Onderwijsvorm

Lectures, computer classes, discussions of the computer assignments.

Toetsvorm

Weekly computer assignments and final assignment. The final grade is based on the written reports of all these assignments.

Literatuur

- Slides of the lectures,
- R manual,
- assignments.

An introductory book on statistics (containing the prerequisite knowledge for this course) is for example

- Statistical reasoning for everyday life, J.O. Bennett, W. Briggs, M.F. Triola.

For more background on the topics in this course, the following books are recommended:

- Linear models with R, by J.J. Faraway (emphasis on the implementation in R);
- Extending the linear model with R, by J.J. Faraway (emphasis on the implementation in R);
- A first course in the design of experiments; a linear models approach, by D.C. Weber and J.H. Skillings (emphasis on the designs, also implementation in SAS).

Vereiste voorkennis

Introductory statistics.

Aanbevolen voorkennis

Probability and statistics courses.

Doelgroep

mAI, mCS

Overige informatie

All assignments are to be solved using the statistical package R (<http://www.r-project.org/>).

Fysieke veiligheid en crisisbeheersing

Vakcode	S_FVC ()
Periode	Periode 4
Credits	6.0
Voertaal	Nederlands
Faculteit	Faculteit der Sociale Wetenschappen
Coördinator	dr. mr. W.J. Kortleven
Examinator	dr. mr. W.J. Kortleven
Docent(en)	dr. J.J. Wolbers, dr. mr. W.J. Kortleven
Lesmethode(n)	Hoorcollege, Werkgroep
Niveau	500

Doel vak

Het doel van het vak Fysieke veiligheid en crisisbeheersing is studenten laten kennismaken met en kritisch leren reflecteren op theorieën over en instrumenten voor de beheersing van risico's en crises in het domein van de fysieke veiligheid.

Inhoud vak

Het vak Fysieke veiligheid en crisisbeheersing biedt een kennismaking met en reflectie op het brede en heterogene domein van de fysieke veiligheid (in het Engels meestal aangeduid als (public) safety). Het gaat om de beheersing van typen onveiligheid die zeer uiteenlopen, onder andere qua oorsprong (natuurlijk en man-made), schaal van het gevaar (vgl. verkeersongevallen en de risico's van kernenergie) en mate van zekerheid van het gevaar (vgl. de onzekere risico's van nanotechnologie en de zekere risico's van een staalfabriek). Wat de verschillende soorten onveiligheid die onder de noemer fysieke veiligheid worden geschaard ondanks alle verschillen gemeen hebben, is dat een kwade menselijke intentie in de regel geen rol speelt.

Het vak is, na een inleidend college, verdeeld in twee delen van elk drie werkcolleges. Deel 1 gaat over verschillende aspecten van risicobeheersing: de omgang met risico's die zich (nog) niet verwerkelijkt hebben. Aan de orde komen onder andere de rol van de overheid in relatie tot de rest van de maatschappij en verschillende theorieën over en instrumenten voor de beheersing van risico's. Deel 2 gaat over crisisbeheersing: risico's die zich op een ingrijpende manier verwerkelijkt hebben. Wat gebeurt er en wat zou er moeten gebeuren als een ongewenste gebeurtenis toch plaatsvindt en schade aan levens, gezondheid, milieu en/of maatschappelijke structuren aanricht? Hoe worden de gevolgen zoveel mogelijk verzacht? Zijn de gebruikelijke manieren van crisisbeheersing adequaat?

Tijdens de werkcolleges worden het theoretische debat over en ontwikkelingen in de beheersing van fysieke veiligheidsrisico's en -crises geplaatst in een bredere maatschappelijke context en verbonden met bestuurs- en organisatiewetenschappelijke theorieën over o.a. wicked problems, netwerk-governance, maakbaarheid en 'gulzigheid', bureaucratie vs. professionalisme, interprofessionele en interorganisatorische samenwerking, en organisationeel leren

Onderwijsvorm

Werkcolleges.

Toetsvorm

Eindpaper

Literatuur

Wordt via Blackboard bekendgemaakt.

Doelgroep

Masterstudenten Bestuurskunde, richting Besturen van Veiligheid

Governance of Security and Policing

Vakcode	S_GSP ()
Periode	Periode 2
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Sociale Wetenschappen
Coördinator	S. Cankaya
Examinator	S. Cankaya
Docent(en)	S. Cankaya
Lesmethode(n)	Hoorcollege
Niveau	500

Doel vak

The aim of this course is to make the students familiar with the state of the art of academic knowledge of the governance of policing & security. The course's overall goals are as follows.

1. After this course the students understand key concepts and theories in governance of policing & security;
2. After this course the students can apply key concepts and theories in governance of policing & security on empirical cases;
3. After this course the students can critically reflect on both theoretical and empirical knowledge presented in the field of international governance of security and policing.

Inhoud vak

In this course, students learn about the most important aspects of security governance at the beginning of the 21st century. They will acquire knowledge of how security governance functions at various levels and how these levels interact, complement over overlap one another. At the end of the course, students will have acquired a comprehensive overview of how public authorities address security challenges and how they increasingly rely on public-private cooperation to achieve their strategic aims.

The seminar seeks to expand the analytical knowledge of students about the governance of security from an international and comparative perspective. Through interactive seminars and Q & A sessions, critical reflection will be stimulated on the distribution of power and influence between relevant security actors. The sequence of seminar lectures will focus on the following topics:

1. Introduction: The international governance of security and policing, developments in governance and state sovereignty and the interplay between multi-lateral security actors and nation states
2. Migration and mobility: border control and surveillance, including refugee crises
3. Counter-terrorism and radicalisation
4. Comparing police systems
5. Investigation versus intelligence
6. International police cooperation
7. Civil-military cooperation and the use of force

Onderwijsvorm

Interactive lectures and other forms. Students are required to read the compulsory literature for each lecture and be prepared to answer questions about the readings in class. They are also invited to read recommended literature and present a summary in class.

Toetsvorm

Assessment is based on active participation in the seminar and a portfolio built by students throughout the seminar. The individual portfolio consists of an research paper of 3500-4000 words (excluding literature references and footnotes) about one central research question (see below for further detail).

Literatuur

Students are expected to be familiar with main governance concepts. If not, please read Jan Kooiman (2005), *Governing as Governance*, London,

Sage (ISBN 0-7619-4036-7 pbk), prior to the start of the seminar. Other articles and/or books will be announced on Blackboard.

Doelgroep

Master students Bestuurskunde & Politicologie.

Overige informatie

Students are supposed to have read the literature prior to each lecture. They are also expected to participate actively in discussions.

Please bear in mind that this seminar is in English. This means that passive and active command of the English language in reading, writing and speaking is required, particularly in view of the written essays. It is compulsory to write and submit the essay in the English language. We have international students in the course, so please do exclusively speak English in the classroom to enable a good and satisfactory learning experience for everyone.

Health Promotion and Disease Prevention

Vakcode	AM_470811 ()
Periode	Periode 2
Credits	6.0
Voertaal	Engels
Faculteit	Fac. der Aard- en Levenswetenschappen
Coördinator	dr. M.C. Adriaanse
Examinator	dr. M.C. Adriaanse
Docent(en)	dr. M.C. Adriaanse, prof. dr. I.H.M. Steenhuis, dr. W. Kroeze
Lesmethode(n)	Hoorcollege, Werkgroep
Niveau	500

Doel vak

1. To provide a solid basis in understanding elementary aspects of the theory, research and practice in the field of health promotion & disease prevention
2. To write a scientific study protocol in English about the planned development and evaluation of a preventive health intervention.

Inhoud vak

This course, fits in the program of the specialization Prevention and Public Health. Within this specialization you are trained to become a health promotor who is able to work in a theory- & evidence-based way and is able to link research, practice and policy. The courses within this specialization are structured according to the six steps of Intervention Mapping. These steps are: 1) Needs assessment, 2) Preparing matrices of change objectives, 3) Selecting theory-informed intervention methods and practical applications, 4) Producing program components and materials, 5) Planning program adoption, implementation, and sustainability and 6) Planning for evaluation. The course Health Promotion and Disease Prevention will introduce you to the six steps of Intervention Mapping. Specific emphasize will be put on step 2 and 3 with a focus on primary prevention.

This course focuses on lifestyle/ health behaviors and environmental

differences related to health and diseases among individuals and populations. The ultimate goal is to improve peoples' health status and quality of life by health promotion interventions. Some examples of the topics that will be addressed are:

- Intervention mapping; designing theory- and evidence-based health promotion programs.
 - Theory-based intervention methods and strategies; theoretical methods that can help to change several of the most important determinants of health behaviors.
 - Computer tailoring & e-health: Use of new media provides opportunities and challenges for the implementation of health education interventions
 - Environmental influences on health. The physical environment and health interact. The importance of environmental interventions and their effect on health are postulated.
 - Health-related quality of life; the role of perceived mental and physical health status in the development of interventions.
 - Effect and process evaluation; principals, perspectives on process evaluation, and determining the effects of health promotion programs.
- Core element in this course is writing a study protocol in English, describing the design of a health promoting or disease preventing intervention trial.

Onderwijsvorm

This course is rewarded with 6 ECTs and runs in Nov-Dec 2016. Health Promotion and Disease Prevention is a full-time course, this means that 42 hours a week are necessary to pursuit the goals of this course. Regular attendance during the weeks is mandatory.

Teaching activities include: Lectures, tutorials, guest lecturers, group assignment (study protocol), peer review sessions and self study.

Toetsvorm

Grades will be based on the assignment (study protocol) and a written exam that includes multiple choice and open-ended questions. The final grade is being determined by the study protocol (25%) and written exam (75%). The study protocol as well as the written exam must have a grade 5.5 or higher.

Literatuur

The following book is required for students who follow the specialization Prevention and Public Health. Planning Health Promotion Programs: An Intervention Mapping Approach, 3rd Edition, by L. Kay Bartholomew, Guy S. Parcel, Gerjo Kok, Nell H. Gottlieb, Maria E. Fernandez. February 2011, Hardcover (E-book also available). Chapters which are applicable to this course will be announced through BB.

In addition, students will use a course manual, and additional course materials are provided on Blackboard.

Vereiste voorkennis

At the start of this course, we expect you to master knowledge, insight, attitude and skills at a level which is comparable to the final qualifications stated by the Bachelor Health Sciences at the VU.

Aanbevolen voorkennis

The following courses of the Bachelor health sciences are strongly recommended: 'Preventie' and 'Gezondheidscommunicatie'.

Doelgroep

Students with a Bachelor degree or pre-masters in Health Sciences with interest in the field of prevention and public health.

Intekenprocedure

Registration for this course via VU-net. Registration for the assignment in subgroups via Blackboard; obligated 1 week before the start of the course.

Overige informatie

This course is compulsory within the Master specialization Prevention & public health. The following courses of the Bachelor health sciences are strongly recommended: 'Preventie' and 'Gezondheidscommunicatie'.

Health Psychology

Vakcode	AM_470730 ()
Periode	Periode 2
Credits	6.0
Voertaal	Engels
Faculteit	Fac. der Aard- en Levenswetenschappen
Coördinator	B.A. van der Wende MSc
Examinator	prof. dr. I.H.M. Steenhuis
Docent(en)	prof. dr. I.H.M. Steenhuis
Lesmethode(n)	Hoorcollege, Werkgroep
Niveau	400

Doel vak

Knowledge:

- You can explain what health psychology is;
- You have insight in and can explain the (historical and recent) development of the field of health psychology;
- You can explain what tertiary prevention is;
- You understand and have insight into the fundamental elements of coping, compliance, stigmatization, doctor-patient communication, self-regulation and psychosomatic disorders. You can explain these before mentioned topics in terms of theory and research;
- You have knowledge of intervention programs in health psychology (tertiary prevention) in theory and practice;
- You have knowledge of research in health psychology.

Skills:

- You are able to interpret and apply scientific literature in the field of health psychology;
- You are able to develop a feasible Mhealth intervention plan (mobile app aimed at tertiary prevention) based on intervention mapping steps 1-4 with a specific focus on steps 3 and 4;
- You are able to pitch an idea for a theory-based health psychology intervention (tertiary prevention) in order to bring in funding, in under 10 minutes;
- You are able to pitch in English;
- You can write a short paper in English on the theory regarding a predetermined theme and are able to reflect if and in what way the reality of a guest lecturer (patient) is in accordance with this theory.

Inhoud vak

This course, fits in the program of the specialization Prevention and Public Health. Within this specialization you are trained to become a health promoter who is able to work in a theory- & evidence-based way and is able to link research, practice and policy.

The courses within this specialization are structured according to the six steps of Intervention Mapping. These steps are: 1) Needs assessment, 2) Preparing matrices of change objectives, 3) Selecting theory-informed intervention methods and practical applications, 4) Producing program components and materials, 5) Planning program adoption, implementation, and sustainability and 6) Planning for evaluation

The course Health Psychology will pay special attention to step 3 and 4 of Intervention Mapping with a focus on tertiary prevention.

Health Psychology refers to the psychological aspects of health, illness and the health care system. In the current course 'Health Psychology', six different subjects regarding tertiary prevention, which are relevant in the field of Health Psychology, will be discussed. Psychological aspects which are relevant in treatment of diseases and coping with (chronic) diseases will be studied, as well as the way we can influence these aspects. Questions to be studied will be for example 'How can we improve compliance of patients with diabetes?', and 'How can we improve communication between health care workers and their patients?', and 'How can we diminish stigmatization of HIV-patients?'. These and other questions will be studied in six cases. In all cases, first underlying determinants or psychological processes of the problems have to be studied. Second, interventions to tackle the presented problems or research into the different problems will be studied.

Onderwijsvorm

This course is rewarded with 6 ECTs. Health Psychology is a part-time course, this means that 21 hours a week are necessary to pursuit the goals of this course. Regular attendance during the weeks is mandatory.

Teaching activities include:

Lectures, tutorials, workgroups, patient guest lectures, pitch session.

During the course we use blackboard. Here you can find information, e.g. lectures or alterations to the schedule et cetera.

Toetsvorm

In order to pass for the course you must:

1. Write a plan for the systematic development of an M-health Intervention (mobile app aimed at tertiary prevention) in which you briefly describe Intervention Mapping steps 1 and 2 and emphasize Intervention Mapping steps 3 and 4. In addition you have to pitch your elaborated intervention plan in order to bring in funding. You will carry out this assignment in couples (pass mark is 5.5);
2. Hand in your PowerPoint slides (or other materials that you used for the presentation);
3. Attend the three guest lectures by patients;
4. Hand in an individually written report about one of the guest lecturers before the end of the course (pass mark is 5.5);
5. Pass the written exam (pass mark is 5.5).

The final mark for the course is being determined by:

- Assignment 1 consisting of the intervention plan and the corresponding

pitch (40%);

- The paper about the guest lecture (10%);
- The written exam (50%).

Literatuur

The following book is required for students who follow the specialization Prevention and Public Health:

Planning Health Promotion Programs: An Intervention Mapping Approach, 4rd Edition, by L. Kay Bartholomew, Guy S. Parcel, Gerjo Kok, Nell H. Gottlieb, Maria E. Fernandez. March 2016, Hardcover (E-book also available)

Chapters which are applicable to the course Health Psychology will be announced through BB.

Furthermore, we will use the following book during this course:
French, D., Vedhara, K., Kaptein, A.A., & Weinman, J. (2010). Health Psychology. West Sussex: BPS Blackwell.

Other literature will be announced in the course manual.

Vereiste voorkennis

At the start of this course, we expect you to master knowledge, insight, attitude and skills at a level which is comparable to the final qualifications stated by the Bachelor Health Sciences at the VU.

Specific entry requirements are:

- Knowledge about Intervention Mapping Protocol
- Knowledge about primary and secondary prevention

Aanbevolen voorkennis

The following course of the Master health sciences is strongly recommended: 'Health Promotion and Disease Prevention'.

Doelgroep

Master students Health Sciences. All other students need approval of the course coordinator and the examination committee of their own program.

Intekenprocedure

Registration for this course via VU-net.

History of digital cultures

Vakcode	XMU_418107 ()
Periode	Periode 3
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	O.W. Schrofer
Examinator	O.W. Schrofer
Niveau	400

Inhoud vak

Overige informatie

This course is offered at the UvA. For more information contact: FNWI Education Service Centre, Science Park 904, servicedesk-esc-science@uva.nl, +31 (0)20 525 7100.

Enrolment via <https://m.sis.uva.nl/vakaanmelden> is required.

ICT4D: Information and communication technology for Development

Vakcode	X_405101 ()
Periode	Periode 5
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. K.S. Schlobach
Examinator	dr. K.S. Schlobach
Docent(en)	dr. K.S. Schlobach, dr. V. de Boer
Lesmethode(n)	Hoorcollege, Werkcollege
Niveau	400

Doel vak

In the developed world Computers are ubiquitous, and ICT has rapidly grown into a critical asset for economic, technological, scientific and societal progress. The main objectives of this course are:

1) to make the next generation of Computer Scientists aware of:

a) The importance of ICTs for the developing world and the unexpected way developing countries are leapfrogging into the information age

b) The opportunities and challenges that exist for an information scientist in the area of 'development4development'

c) The influence of context in a typical ICT4D project

d) The complexity of deploying an ICT project within a development context, and how to tackle this.

2) to equip the students with some initial project management, technological and programming skills specific to an ICT deployment in a developing country.

Positioned at the heart of the VU's vision of social relevance as one of the guiding principles, the core aim of the course is to raise the awareness that we as Computer Scientists can make a significant difference by sharing our expertise according to well established principles of international development.

Inhoud vak

This course gives an introduction to the relatively new field of ICT4D and will be given jointly by experts from the Department of Computer Science (CS) and the Center for International Cooperation (CIS) with lecturers from both backgrounds who will focus on their areas of expertise.

In the course we will give an overview over methodology, technology and the social dimension of the usage of Information Technology in the context of Development. We will introduce a general framework for ICT4Development. Subsequently, lecturers from CIS will teach you how to analyse a development problem and introduce the analytical methods

required for an indepth understanding of a potential development support project. Lecturers from CS will provide some initial technological knowledge required for running an ICT project in a developing country, such as Voice technology or database technology on small, inexpensive, hardware. It will give an overview over technology already applied, such as specific networks, connection types, hardware as well as specific software environments, but also introduce basic concepts in project management for ICT projects.

In lectures, you will first be introduced to a number of tools, techniques and programming languages that can be used for ICT4D projects. We will introduce case studies, highlight real-world ICT4D projects, both from inside and outside academia. We will discuss requirements and strategies used in the projects. We will present a number of initiatives in which the VU is involved in. To prepare for the lectures, you will read related literature provided by the lecturers.

In the tutorial lectures, students will first get familiar with the tools and techniques introduced in the practical lectures. We will assess your skills in assignments.

Onderwijsvorm

The course will be a combination of lectures and project work.

Toetsvorm

Practical assignment

Literatuur

Collection of papers.

Doelgroep

mAI, mCS, mIS

Information Retrieval 1

Vakcode	XMU_418043 (418043)
Periode	Periode 3
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Niveau	500

Inhoud vak

<http://studiegids.uva.nl/xmlpages/page/2016-2017/zoek-vak/vak/25718>

Intekenprocedure

Registration is required via <https://www.sis.uva.nl> until four weeks before the start of the semester.

Intelligent Interactive Systems

Vakcode	XMU_418023 (418023)
Periode	Periode 1
Credits	6.0

Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Niveau	400

Inhoud vak

<http://studiegids.uva.nl/xmlpages/page/2016-2017/zoek-vak/vak/23835>

Doelgroep

mIS

Overige informatie

This course is offered at the UvA. For more information contact: FNWI Education Service Centre, Science Park 904, servicedesk-esc-science@uva.nl, +31 (0)20 525 7100.

Enrolment via <https://m.sis.uva.nl/vakaanmelden> is required.

Interdisciplinary Research Methodology for IS

Vakcode	X_405085 ()
Periode	Periode 2
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	prof. dr. J.M. Akkermans
Examinator	prof. dr. J.M. Akkermans
Docent(en)	prof. dr. J.M. Akkermans, dr. D. Ceolin
Lesmethode(n)	Hoorcollege
Niveau	500

Doel vak

This course helps prepare students for scientific research and particularly their Master research project and thesis.

After completion of the course the student:

- is able to formulate a research design containing appropriate research questions and how they are answered through applicable research methods, the latter covering qualitative, quantitative and constructive methodologies typical to the IS field
- is able to argue for his/her research design with solid argumentation explaining the underlying assumptions, pros and cons etc. of the chosen methods.
- is able to collect and process the research data according to the different IS research methodologies and to critically judge the obtained results in relation to the research questions
- is able to describe and critically discuss the above activities in a written report, and to present and discuss the results to a scientific audience

Inhoud vak

The course provides an interdisciplinary overview of and hands-on work with different scientific research methods, with an emphasis on ICT/information systems and technologies in interaction with their human, social and organizational contexts.

Topics are:

- scientific research and its goals, the idea of scientific method, in the context of Information Sciences;
- conceptualizing and framing the research questions you want to answer;
- making a research design and planning your research;
- IS conceptualization, theory formation and validation/triangulation;
- research methods and their assumptions, pros and cons (e.g. interview, observation, case study, field and action research, modelling and simulation, experiment, survey, statistical analysis, IS/ICT artefact system design and development);
- how do you (and others) know that your research results are valid?
- scientific argument, communication and research report writing.

Onderwijsvorm

The focus is on students getting hands-on experience with different research methods applied to open-ended research questions.

The setting of the assignment work is that of a continuing research case investigation that emulates different stages of a scientific research project.

The research case question to be investigated differs from year to year.

A representative example is: What is it for systems to be considered "smart" (e.g. smart homes, smart city, smart energy, e-health, etc), and how can we solve problems by making (socio-technical) systems "smarter" with the help of ICT technologies and to the benefit of people?

Students receive weekly feedback on their assignments in discussion sessions with staff supervisors, and are able to improve upon them during the course, until the final portfolio has to be handed in at the end of the course.

Toetsvorm

Portfolio containing a set of group and individual assignments.

Students receive weekly feedback on their assignments, and are able to improve upon them, until the final portfolio has to be handed in at the end of the course.

Literatuur

Textbook: Colin Robson: Real World Research, 3rd Ed., Wiley, 2011 [Note: this book is available in hardcover, paperback and a digital edition].

Other sources are made available via Blackboard.

Vereiste voorkennis

Basic knowledge of qualitative and quantitative research methods.

Doelgroep

mAI, mIS

Overige informatie

This course is taught jointly with UvA under the name Interdisciplinary Research Methodology for IS

For UvA, see

<http://studiegids.uva.nl/xmlpages/page/2014-2015/zoek-vak/vak/742475>

Internet programming

Vakcode	X_405082 ()
Periode	Periode 1

Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. S. Voulgaris
Examinator	dr. S. Voulgaris
Docent(en)	dr. S. Voulgaris
Lesmethode(n)	Hoorcollege
Niveau	400

Doel vak

Guide the student through the design and development of Network and Web applications.

Inhoud vak

The course discusses the principles for understanding, designing, and developing Internet applications. This includes programming the network (sockets, threads, RPC, RMI), programming the web interface (servlets, PHP, Javascript, AJAX), and setting up secure communication channels. Throughout the course, as well as in the context of the lab assignments, attention is paid to practical issues of applying these concepts.

Onderwijsvorm

Lectures combined with lab assignments

Toetsvorm

Final exam plus lab assignments

Literatuur

Course slides

Vereiste voorkennis

Knowledge of C, Java

Aanbevolen voorkennis

Good knowledge of both C and Java

Doelgroep

mAI, mCS, mPDCS

Knowledge and Media

Vakcode	X_405065 (405065)
Periode	Periode 1
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. T. Kuhn MSc
Examinator	dr. T. Kuhn MSc
Docent(en)	dr. T. Kuhn MSc
Lesmethode(n)	Werkcollege
Niveau	500

Doel vak

The goal of the course is to provide insights in the concepts of information organization, knowledge representation, ontologies, and knowledge processes in relation to various ICT-based media.

Inhoud vak

This course treats the principles and theories that form the foundation of information organization and knowledge-intensive processes, and puts them in relation to various media applications. Knowledge processes are those processes that use knowledge (reasoning), document knowledge (representation), acquire knowledge or transfer knowledge (teaching). The relation between knowledge processes and media will be explored, and various types of applications will be discussed.

Onderwijsvorm

Working lectures

Toetsvorm

Portfolio

Literatuur

Articles announced through Blackboard

Knowledge Engineering

Vakcode	X_405099 ()
Periode	Periode 2+3
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. A.C.M. ten Teije
Examinator	dr. A.C.M. ten Teije
Docent(en)	dr. A.C.M. ten Teije
Lesmethode(n)	Hoorcollege
Niveau	400

Doel vak

goals:

- 1) to be able to elicitate knowledge from experts by using several elicitation techniques
- 2) to be able to build all CommonKads models that play a role in the development of a knowledge based system, this includes the context of the KBS and the expertise model based
- 3) to be able to implement the expertise model as a prototype
- 4) to be able to reflect on your own process of modelling and building a knowledge based system, and to reflect on your product (=which are the models and the implementation)

Inhoud vak

Knowledge Engineering is a discipline that involves integrating knowledge into a program for solving a complex problem, which requires human expertise. Typical tasks are classification, diagnosis, planning

etc. In the course we use CommonKADS as the methodology for the process of modeling the organisation, the context and the knowledge intensive tasks.

This methodology give clear guidelines and concrete templates for modeling the organisational aspects and the expertise model, which is the core model of knowledge based system. The notion of pattern-based knowledge modeling is a key issue in the knowledge modelling process. The goal of the final project is to perform the entire knowledge technology process for a knowledge intensive problem of your own choosing, starting with context analysis, up to a (partial) implementation of the knowledge based system.

Onderwijsvorm

Lectures, assignments, group project

Toetsvorm

Assignment, project reports.

Literatuur

Schreiber, Akkermans, Anjewierden, de Hoog, Shadbolt, van de Velde, Wielinga: Knowledge Engineering & Management. The MIT Press, Cambridge MA, 2000, ISBN 0-262-19300-0.

Doelgroep

mAI, mIS, mCS-TAI

Knowledge Representation on the Web

Vakcode	XMU_418169 ()
Periode	Periode 5
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. K.S. Schlobach
Lesmethode(n)	Hoorcollege, Onderwijs

Inhoud vak

<http://studiegids.uva.nl/xmlpages/page/2016-2017/zoek-vak/vak/29579>

Intekenprocedure

Registration is required via <https://www.sis.uva.nl> before the start of the semester.

Machine Learning for the Quantified Self

Vakcode	XM_40012 ()
Periode	Periode 6
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. M. Hoogendoorn
Examinator	dr. M. Hoogendoorn
Lesmethode(n)	Hoorcollege, Practicum

Doel vak

The quantified-self refers to large-scale data collection of a user's behavior and context via a range of sensory devices, including smart phones, smart watches, ambient sensors, etc. These measurements contain a wealth of information that can be extracted by means of machine learning techniques, for instance for the purpose of predictive modeling. In addition, machine learning techniques can be a driver for adaptive systems to support users in a personalized way based on the aforementioned measurements. The type of data does however require specialized machine learning techniques to fully exploit the information contained in the data. Examples of challenges include the temporal nature of the data, the variety in the type of data, the different granularity of various sensors, noise, etcetera. The main aims of this course are to:

- * Understand the challenges imposed by quantified-self data upon machine learning techniques.
- * Become familiar with machine learning techniques for predictive modeling that are able to cope with these challenges.
- * Become familiar with machine learning techniques that drive adaptive feedback and support.
- * Understand how different machine learning approaches can be united in a single system.

The student should become familiar with the more theoretical side of the domain and the current state-of-the-art in research. In addition, the student will learn how to apply this knowledge in a practical setting.

Inhoud vak

The course will provide an overview of relevant state-of-the-art machine learning techniques. More in specific, it will address:

- Feature engineering (how do we come from raw data to usable features):
 - * Identifying (temporal) features
 - * Unifying time scales
 - * Handling missing data
- Learning of user patterns:
 - * Temporal machine learning approaches such as recurrent neural networks, time series analysis
 - * Similarity-based approaches using time (including dynamic time warping)
 - * Association rules (including numerical variants)
- Adaptive feedback and support
 - * Reinforcement learning
 - * Nearest neighbor approaches
- Integration of the various components.

In addition, a number of real-life applications will be discussed. Next to lectures, there will be an extensive practical part, where students will learn to work with various algorithms and data sets. As a final assignment, the students will develop a mobile-based system which incorporates several techniques treated during the lecture.

Onderwijsvorm

The course will be taught in four weeks. During the first two weeks the emphasis will be on lectures (l) and assignments associated with the material covered in the lectures. These assignments will form the basis for the final assignment, which is a project (pro) to build a data-driven intelligent system for the quantified self.

Toetsvorm

Written exam (E) (50%) and practical assignments (A) (50%). For both parts the grade needs to be sufficient to obtain a final grade. For the practical assignments the final assignment counts for 60% while the smaller assignments associated with the lectures count for 40% in total.

Literatuur

Papers and reader, made available via blackboard.

Aanbevolen voorkennis

Programming experience.

Doelgroep

XM_AI, XM_BA, XM_CS

Overige informatie

Lecturer:

Dr.M. Hoogendoorn

Master Project

Vakcode	X_400285 (400285)
Periode	Ac. Jaar (september)
Credits	30.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Lesmethode(n)	Hoorcollege
Niveau	600

Doel vak

The Master programme in Artificial Intelligence is a scientific programme that aims to provide the student with the knowledge, experience and insights needed to autonomously carry out his/her professional duties. The programme is designed to prepare the student for further education as scientific researcher (Ph. D. studies) as well as to offer a solid basis for a career in business at an academic level. Moreover, the programme aims at educating the student as to acquire a practical understanding of the position of the field of Artificial Intelligence within a broad scientific, philosophic and social context.

Inhoud vak

Each Master AI programme is finished with a master project AI. This; can be an individual project as well as a group project. Information; about projects (incl. internships) can be found on the Internet pages; of the AI divisions. Internships proposed by the student him/herself; need approval in advance from a member of staff, who will also be; involved with supervising the project.

The size of the graduation projects is as such that with adequate; foreknowledge and complete study, the project can be finished within; 6 months.

The student participates in the KIM (Kunstmatige Intelligentie; Meeting). See blackboard KIM.

Onderwijsvorm

The Master Project has always to be supervised by a staff member, in the case of an internship in cooperation with a supervisor in the company. Internships proposed by the student him/herself need approval in advance from a member of staff, who will cooperate with supervising the project.

Toetsvorm

The final grade will be based on the quality of the research, the written thesis, the KIM presentations and the participation in the KIM.

Doelgroep

mAI

Overige informatie

For all rules, assessment criteria, contact persons, and many practical tips for your master project, see the KIM blackboard page (inclusive the "Manual for the Master Project AI") and <http://wiki.cs.vu.nl/mp>

Master Thesis: Research Project Cognitive Science

Vakcode	P_MTHRCSC (815067)
Periode	Ac. Jaar (september)
Credits	30.0
Voertaal	Engels
Faculteit	Fac. der Gedrags- en Bewegingswetensch.
Coördinator	prof. dr. J.L. Theeuwes
Examinator	prof. dr. J.L. Theeuwes
Niveau	400

Doel vak

To learn how to perform research and report about it. Projects involve basic research, applied research, research concerning modeling, or a combination of these.

Inhoud vak

Students participate in a research project concerning Cognitive Science. The Thesis can be done at the department of Cognitive Psychology (FPP), the department of Artificial Intelligence (FEW), an external research organization (for example TNO), a company, or another (foreign) university.

Before starting, a written research plan should be submitted to the head of the department of Cognitive Psychology or the head of the department of Artificial Intelligence. Participation in a research project can only start after approval of the research plan. The research performed by the student forms the basis for the Thesis. The Master Thesis should be written in article style. Students will be supervised by a person from the academic staff of the department of Cognitive Psychology or the department of Artificial Intelligence. There will be at least one meeting a week between the student and the supervisor.

Toetsvorm

The final grade for the Master Thesis will be based on the quality of both the research and the written thesis. Grading will be done by the

direct supervisor and the head of the department.

It is required that

students present their research in the form of a talk during a research meeting. Students are also required to attend at least four research meetings at the department of Cognitive Psychology. It is finally required that students participate in the KIM meetings according to the rules as outlined on the web- site of the KIM meetings.

Memory and Memory Disorders

Vakcode	P_MMEMORY (815102)
Periode	Periode 2
Credits	6.0
Voertaal	Engels
Faculteit	Fac. der Gedrags- en Bewegingswetensch.
Coördinator	dr. R.J. Godijn
Examinator	dr. R.J. Godijn
Docent(en)	dr. R.J. Godijn
Lesmethode(n)	Hoorcollege
Niveau	400

Doel vak

The course aims to give students an overview of memory at the cognitive and neurophysiological level, and to give students the background to interpret memory disorders in patients with brain damage.

Inhoud vak

The course focuses on various approaches in the study of human memory and memory disorders. We will discuss working memory, encoding-retrieval interactions, interference and forgetting implicit memory, and the brain substrate of memory. We will also discuss clinical testing of memory, and memory loss after local brain damage, dementia, and other conditions.

Onderwijsvorm

12 two- hour lectures and workshops, assignments and oral presentations.

Toetsvorm

Quizzes, presentations and research proposal.

Literatuur

Various papers, to be announced via Blackboard.

Overige informatie

This course is taught every two years. It is not taught in 2015-16, but will be taught again in 2016-17.

Students who took the course in 2014-15, but did not pass it, have the right to one resit in 2015-16. Please contact the course coordinator in that case.

Mini-Master Project AI

Vakcode	XM_400428 (400428)
Periode	Ac. Jaar (september)

Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. M. Hoogendoorn
Examinator	dr. M. Hoogendoorn
Niveau	500

Doel vak

Gaining deeper insight into a specific topic in AI.

Inhoud vak

This course consists of a small project on a specific topic in AI, selected in agreement with your supervisor. The project may have various forms, such as a literature study, the design of a piece of software, or exploring a research question. The results of the project are described in a brief report. To start, students should contact the coordinator of the projects: dr. M. Hoogendoorn (m.hoogendoorn@vu.nl).

Onderwijsvorm

Individual project and written report.

Toetsvorm

The end grade is based on both the project and the written report.

Doelgroep

mAI

Overige informatie

Depending on the interest of the student, a specific topic is selected and an individual supervisor is assigned.

Misdaadanalyse en daderprofilering

Vakcode	R_Misd.anaC (212404)
Periode	Periode 2, Periode 4
Credits	6.0
Voertaal	Nederlands
Faculteit	Faculteit der Rechtsgeleerdheid
Coördinator	dr. J.J. van der Kemp
Examinator	dr. J.J. van der Kemp
Docent(en)	dr. J.J. van der Kemp
Lesmethode(n)	Hoorcollege, Werkcollege
Niveau	400

Doel vak

Studenten kennis en inzicht geven over de wetenschappelijke stand van zaken van de theorie en praktijk van verschillende typen van misdaadanalyse.

Inhoud vak

Misdaadanalyse is het gebruiken van (wetenschappelijke) methoden voor het analyseren van criminaliteit op strategisch, tactisch en operationeel niveau. Zo worden jaarlijkse trends van typen misdrijven

onderzocht, maar ook analyses gedaan van lopende - operationele - zaken. Het vakgebied van de misdaadanalist ontwikkelt zich in hoog tempo, waarbij de interactie tussen de praktijk en de wetenschap van groot belang is.

In de colleges wordt aandacht besteed aan de actuele ontwikkeling binnen de opsporing en handhaving naar informatie- en probleemgestuurd werken om het kader te schetsen van de rol die misdaadanalyse daarin speelt. De methoden en technieken van Misdaadanalyse en Daderprofilering komen ook terug in het analyseren van interventies, bijv. een gebiedsgebonden aanpak van de politie, of het analyseren van delictscenario's bij de behandeling van TBS-ers.

Een selectie van methoden van misdaadanalyse en daderprofilering komt aan bod en worden deze voorzien van wetenschappelijke reflectie. Achtereenvolgens zullen strategische analyses vanuit probleemgestuurd (POP-policing) perspectief en geografische analyses als Hot Spots worden besproken. Meer specialistische vormen van criminaliteitsanalyse, bekend als gedragskundige analyse, als geografische en psychologische daderprofilering sluiten de reeks af.

Verskillende vormen van misdaadanalyse zullen in de toekomst een steeds grotere rol spelen in de preventie en de opsporing en interventie van criminaliteit, alsmede bij het ontwikkelen van beleid door politie, justitie, het openbaar bestuur en de beveiligingsindustrie.

Toetsvorm

Nader bekend te maken via blackboard.

Literatuur

Nader bekend te maken via blackboard

Vereiste voorkennis

De voorkennis die is vereist voor de Master Opsporingscriminologie: misdaadprofielen en misdaadbestrijding geldt als vereiste voorkennis voor het vak Misdaadanalyse en Daderprofilering.

De kennis wordt gedefinieerd als de stof beheersen en kunnen toepassen van de boeken:

Dijk, J.J.M. van, W. Huisman & P. Nieuwbeerta (2014) Actuele criminologie (8e druk) Den Haag: Sdu Uitgevers.

Bijleveld, C.C.J.H. (2013) Methoden en Technieken van onderzoek in de Criminologie (5e druk) Den Haag: Boom Juridische uitgevers.

Kronenberg, M. en B. de Wilde (2015) Grondtrekken van het Nederlandse Strafrecht (6e druk) Den Haag: WoltersKluwer.

Intekenprocedure

Het collegejaar 2016-2017 wordt het vak tweemaal aangeboden. In periode 2 en in periode 4. Periode 2 is alleen toegankelijk voor de studenten die in februari 2016 met de opleiding zijn begonnen. Deze studenten zullen voor het vak worden ingeschreven.

Alle overige studenten kunnen het vak in periode 4 volgen.

Model-based Intelligent Environments

Vakcode	X_405056 (405056)
Periode	Periode 5

Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. M.C.A. Klein
Examinator	dr. M.C.A. Klein
Docent(en)	prof. dr. J. Treur, dr. M.C.A. Klein, dr. T. Bosse
Lesmethode(n)	Hoorcollege
Niveau	500

Doel vak

The student will understand different ways in which computerized models can be used in intelligent support systems, and will develop a prototype of such a system based on approaches described in the literature.

Inhoud vak

During their bachelor and first year of the master, students have learned to model human processes using different techniques and at different levels of abstraction. In addition, they have learned to use such models for analysis of situations and reasoning about effective support. In this course, the modeling knowledge will be further deepened and applied to a specific domain or scenario. Scientific literature and applications of model-based reasoning will be studied. The student will develop a prototype of an application based on models relevant for a scenario chosen by the student. By building this prototype, the student shows that he/she masters the modeling approaches and is able to apply this in a specific domain or scenario.

Onderwijsvorm

Lectures and project.

Toetsvorm

Assignments.

Literatuur

Papers

Aanbevolen voorkennis

Introduction to Modeling and Simulation, Integrative Modeling

Networked Organizations and Communication

Vakcode	S_NOC ()
Periode	Periode 2
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Sociale Wetenschappen
Coördinator	dr. A. Nerghes
Examinator	dr. A. Nerghes
Docent(en)	dr. A. Nerghes
Lesmethode(n)	Hoorcollege, Werkgroep
Niveau	600

Doel vak

Students who have completed the seminar will be able to critically approach, interpret, and compare theories and literature on social networks, semantic networks, and networked organizations. They can write a literature review or about the developing field of networked organizations and communication. Moreover, they can carry out a small-scale research project (in groups) using a network software tool to conduct social and semantic network analysis, and reflect on the results.

Inhoud vak

The seminar Networked Organizations and Communication aims at gaining in-depth insight into networked organizations and network analysis. The seminar begins with an introduction to network theory, general terms, and concepts. On the basis of recent network literature, the seminar then focuses on how organizations and organizational members become more connected to each other (e.g., through actor similarity, communication patterns, etc.). A particular focus will thus be on gaining insights into social and semantic networks and on the software program with which one can analyze and visualize social or semantic networks. This course addresses three aspects of organizational networks: structure, content and meaning.

Toetsvorm

Possibly small tests during class, individual literature review , group assignment (research project), and an individual reflection assignment.

Aanbevolen voorkennis

All students are recommended to study chapters 1, 2, 3, 7, and 10 of Kadushi, C., 2012: Understanding social networks. Oxford University Press: New York.

Intekenprocedure

In this course you can not enroll yourself for the tutorials, but you will be assigned by the course coordinator. You will find to which tutorial you are assigned in your personal schedule in VUnet.

Note: You do have to register for the course, with the remaining corresponding parts!

Neural Models of Cognitive Processes

Vakcode	P_MNEUMOD (815051)
Periode	Ac. Jaar (september)
Credits	6.0
Voertaal	Engels
Faculteit	Fac. der Gedrags- en Bewegingswetensch.
Coördinator	dr. W. Kruijne
Examinator	dr. W. Kruijne
Docent(en)	dr. W. Kruijne
Lesmethode(n)	Hoorcollege
Niveau	400

Doel vak

Computational models are an important feature in cognitive neuroscience. When used appropriately, they allow for the integration of findings from a wide range of experiments, as well as detailed predictions. As opposed to many theories, they are rich in detail and allow for a mechanistic view on how the brain operates.

In this course, you will:

- > Learn about how models can enrich the field of cognitive neuroscience
- > Gain insight into different types of models, their strengths and weaknesses
- > Obtain in-depth knowledge about several specific models
- > Get hands-on experience with a variety of models

Inhoud vak

The course starts with a general introduction on models within the field of cognitive neuroscience, and getting familiar with the software used in the practical sessions. Then, you will learn about some prototypical neural models, and their applications within (and beyond) your field. The practical sessions will have you explore the inner workings of these models, by means of exercises and essay questions.

In the second half of the course, you will learn about a wider variety of models, with different levels of abstraction. Furthermore, you will dive into (and present) articles where models, inspired by the prototypical ones discussed in the lectures, have been applied in cognitive neuroscience.

Onderwijsvorm

Lectures and discussion, computer tutorial and practicals, one oral presentation.

Toetsvorm

Grades are based on a weighted average of performance on a final exam, the oral presentation and the practical sessions.

Literatuur

articles, tutorials and other reading material on blackboard

Overige informatie

This course is taught every two years. It is taught in 2015-16, but not in 2016-17.

Ondernemerschap en innovatie, een relationeel perspectief

Vakcode	S_OIRP ()
Periode	Periode 2
Credits	6.0
Voertaal	Nederlands
Faculteit	Faculteit der Sociale Wetenschappen
Coördinator	prof. dr. P.C. van der Sijde
Examinator	dr. ir. M.P.J. van der Gaag
Docent(en)	prof. dr. P.C. van der Sijde, I. Borst
Lesmethode(n)	Hoorcollege, Werkgroep

Doel vak

Je ontwikkelt kennis van en inzicht over ondernemerschap en innovatie vanuit theoretische perspectieven waarin samenwerking, netwerken en inbedding centraal staan en leert een verband te leggen tussen de theorie en praktijk op dit gebied. De concrete leerdoelen van dit vak zijn als volgt geformuleerd:

Na afloop van dit vak heb je kennis en inzicht verworven over:

- ondernemerschap, innovatie, netwerken en sociaal kapitaal
- gehanteerde onderzoeksmethoden in deze domeinen

Ben je in staat om:

- een verband te leggen tussen bovenstaande theorieën en de praktijk van ondernemerschap en innovatie
- op basis van interviews met daadwerkelijke ondernemers over een praktijkprobleem t.a.v. ondernemerschap en innovatie, onderzoekbare vragen te formuleren
- relevante theoretische concepten te operationaliseren voor (kleinschalig) empirisch onderzoek
- onderzoeksmateriaal te analyseren aan de hand van ontwikkelde operationalisaties
- mondeling en schriftelijk te rapporteren over de toepasbaarheid van relationeel onderzoek op de uitdaging van innovatie en ondernemerschap (organisatie vernieuwing)

Inhoud vak

In dit vak wordt aandacht besteed aan hedendaagse vraagstukken met betrekking tot vernieuwing van en in organisaties vanuit een netwerk perspectief. Dit betekent dat we zullen kijken naar hoe ondernemerschap en innovatie beïnvloed worden door de aard en inhoud van de netwerken waarin deze organisaties zijn ingebed en de relaties die medewerkers onderling ontwikkelen. Ondernemerschap wordt hier gezien als het benutten van kansen ongeacht de beschikbare middelen door middel van proactief en innovatief gedrag en het nemen van risico's. Innovatie wordt hier gezien als het ontwikkelen van combinaties die als nieuw (novel) worden gezien voor de organisatie en de markt waarin deze organisatie actief is. Een belangrijk aandachtspunt in het vak vormt de vertaling van theorie naar praktijk en vice versa. Dit betekent dat bij het bespreken van wetenschappelijke literatuur steeds de vraag zal worden gesteld wat de beschreven bevindingen betekenen voor bestaande en nieuwe organisatie. Maar ook dat we zullen kijken welk onderzoek nodig is om ondernemers en werknemers te ondersteunen bij hun ondernemende en innovatieve processen en hoe dergelijk onderzoek vorm gegeven kan worden.

Onderwijsvorm

Het vak bestaat uit drie delen.

Het eerste deel bestaat uit een serie werkgroepen waarin de verplichte literatuur wordt besproken.

Studenten dienen ter voorbereiding op deze colleges de verplichte literatuur

grondig te bestuderen en (wisselend per bijeenkomst) een korte en bondige (max 1 A4 per artikel) parafraze te schrijven waarbij de nadruk ligt op het bespreken van de kernconcepten en de koppeling tussen probleem en gehanteerde methode, of wel zich voor te bereiden op een korte multiple-choice toets over de literatuur. De bijbehorende

deeltoetsen dragen voor 40% mee in het eindcijfer (eerste kans). Het tweede deel bestaat uit (de voorbereiding van) een kleinschalig onderzoek en omvat een interview met een ondernemer uit het veld. In dit interview wordt een praktijkprobleem met betrekking tot ondernemerschap en innovatie vanuit een relationeel perspectief verkend. Vervolgens wordt in werkgroepen de vertaling gemaakt van het geïdentificeerde praktijkprobleem naar een onderzoekbare vraag en de operationalisering van relevante concepten. In een tweede interview binnen dezelfde dan wel een vergelijkbare organisatie wordt de operationalisatie getoetst. De bijbehorende deeltoetsen dragen voor 30% mee aan het eindcijfer (eerste kans). Het derde deel wordt uitgevoerd in groepsverband en bestaat uit een uitvoeren van een pilot studie van het voorgestelde onderzoeksplan hetgeen verwerkt moet worden in een verbeterde versie van het onderzoeksplan. Daarnaast moet ieder studententeam in een werkgroep een presentatie over het onderzoeksplan geven. Het finale onderzoeksplan en de bijbehorende presentatie tellen voor 30% mee aan het eindcijfer (eerste kans). Serieuze deelname aan alle individuele deeltoetsen is verplicht voor toegang tot de groepsopdracht. Studenten die, ongeacht de reden, een of meerdere deeltoetsen hebben gemist mogen de groepsopdracht enkel individueel uitvoeren.

Toetsvorm

De toetsing is aan de hand van individuele en groepsopdrachten. De cijfers voor de deeltoetsen zijn onderling compenseerbaar en vormen gezamenlijk het eindcijfer voor het vak (eerste kans). Het is niet mogelijk om een of meerdere deeltoetsen afzonderlijk te herkansen. De herkansing voor dit vak bestaat uit een individuele onderzoeksopdracht met bijbehorend verslag die alle deeltijfers behaald tijdens de eerste ronde voor dit vak vervangt.

Literatuur

Recente wetenschappelijke artikelen – de lijst met verplichte literatuur wordt via blackboard bekend gemaakt.

Vereiste voorkennis

Deelname aan Organization Sciences (S_OS).

Doelgroep

Master studenten BCO.

Intekenprocedure

Bij dit vak kun je niet zelf intekenen voor de werkgroep, maar wordt je ingedeeld door de vakcoördinator. Je ziet te zijner tijd in je persoonlijk rooster in VUnet in welke werkgroep je ingedeeld bent. NB je moet wel intekenen voor het vak met de overige bijbehorende vakonderdelen!

Overige informatie

Van studenten wordt verwacht dat zij bekend zijn met de cyclus van empirisch onderzoek en in staat zijn een betoog te schrijven op basis van de wetenschappelijke literatuur. Daarnaast zullen studenten zelf toegang moeten organiseren tot een organisatie waar zij 1 of 2 interviews kunnen uitvoeren. De docent zal

hierbij uiteraard wel adviseren.

Perception for Action

Vakcode	B_PERCACTION (900810)
Periode	Periode 4
Credits	3.0
Voertaal	Engels
Faculteit	Fac. der Gedrags- en Bewegingswetensch.
Coördinator	prof. dr. J.B.J. Smeets
Examinator	prof. dr. J.B.J. Smeets
Docent(en)	prof. dr. J.B.J. Smeets
Lesmethode(n)	Hoorcollege, Computerpracticum
Niveau	500

Doel vak

The student is able to:

- describe the functioning of the sensory systems relevant for motor control;
- interpret scientific literature in the area of perception and apply it to the field of motor control.

Inhoud vak

The topic of this course is the question: how is sensory information processed to guide ones action? More specific: how do we know where a target and (a part of) our body is? The answers to these questions require knowledge about the sensory organs, their signals, and how these signals are processed and combined in order to be used to control our actions. The focus will be on quantitative analysis of perception, using the psychophysical method. Each topic (e.g. proprioception, motion perception) is introduced by a lecture, but the focus of the course is on the discussion of papers of the last decade. The discussion will be about both the phenomenology and the mechanisms.

Onderwijsvorm

Amount of contact hours:
Lectures (' hoorcolleges') 7
Tutorials (' werkcolleges') 7
Assignments & self study 68
Practicals 2

Each meeting will be a combination of tutorial consisting of a discussion of the previous assignment (1 hour), and a lecture introducing to the topic of the next assignment (1 hour)

In the practical, the students will compare two psychophysical techniques and discuss their effectiveness in answering the question what perceptual information is available.

Toetsvorm

After each lecture, students receive an assignment. Six of them have to be handed in before the next meeting. These assignments are graded, and count for 10 % of the final grade. The assignment after the final lecture will contribute 35 %: the remaining 5% on completion of the

practical.

Literatuur

Literature needed for the course will be distributed during the course.

Vereiste voorkennis

No entry requirements. Basic knowledge of the nervous system is expected (e. g. function of various brain areas).

Overige informatie

- The maximum number of participants in this course is limited to 40

Prevention of Mental Health Problems

Vakcode	AM_470840 ()
Periode	Periode 3
Credits	6.0
Voertaal	Engels
Faculteit	Fac. der Aard- en Levenswetenschappen
Coördinator	dr. E.M. Sijbrandij
Examinator	dr. E.M. Sijbrandij
Docent(en)	prof. dr. W.J.M.J. Cuijpers
Lesmethode(n)	Hoorcollege, Werkgroep, Computerpracticum
Niveau	400

Doel vak

Knowledge and insight

- Student will have knowledge and insight on the most important theoretical insights and concepts in the field of preventing mental health problems.
- Students will be up to date with knowledge on relevant prevention effectiveness studies.
- Students will be familiar with different mental illness prevention techniques used in clinical practice.
- Students will have know-how on how to plan for and evaluate the effects of mental illness prevention studies.

Skills

- Students will be able to mention and describe the most important theoretical and scientific concepts about the prevention of mental health problems.
- Students will be able to use the acquired theoretical and scientific knowledge to evaluate existing literature on prevention programs.
- Students will be able to use existing literature on a self-chosen problem to discuss its current state of affairs and construct concrete recommendations as to how preventive mental healthcare can be improved on this topic.

Attitude

- Students will be aware of the societal relevance of prevention programs and their positions within their own discipline of study.
- Students will grasp the interdisciplinary character of prevention programs.
- Students will understand the most important obstacles in implementing mental illness prevention programs.

- Students will understand the relevance of research and funding in this field.

Inhoud vak

For Health Science students this course fits in the program of the specialization Prevention and Public Health. Within this specialization you are trained to become a health promotor who is able to work in a theory- & evidence-based way and is able to link research, practice and policy.

The courses within this specialization are structured according to the six steps of Intervention Mapping. These steps are: 1) Needs assessment, 2) Preparing matrices of change objectives, 3) Selecting theory-informed intervention methods and practical applications, 4) Producing program components and materials, 5) Planning program adoption, implementation, and sustainability and 6) Planning for evaluation.

For Psychology students this fits in the program of the Clinical Psychology specialization. Within this specialization you are trained to become a psychologist specializing in either the research, policy or practice of mental health care. Most courses in this specialization can be freely chosen and are all specific subtopics in mental healthcare, usually aimed at specific disorders or types of treatment.

The course Prevention of Mental Health Problems will pay special attention to step 3 through 6 of Intervention Mapping with a focus on mental health.

Theoretical backgrounds of the prevention of mental health problems will be discussed, as well as currently used methods in preventive mental health care. Guest lecturers who work in the field of preventive mental health care will discuss current programs aimed at preventing several psychological symptoms and disorders. Also, the most important results of research conducted in the field of preventive mental health care will be presented. There will also be a focus on the implementation and evaluation of mental illness prevention programs.

In the practicals students will tackle a self-chosen problem within the field of preventive mental healthcare, writing a report on it and presenting their most important recommendations.

Because this is an interdisciplinary course and students from several Master tracks are welcome to follow this course, we provide quick 'crash courses' in the topics of prevention and psychopathology with additional literature to get students up to speed on the discipline they are not yet familiar with.

All lectures and work group meetings will be taught in English. All examination will be done in English as well.

Onderwijsvorm

This course is rewarded with 6 ECTs and runs in January 2017.

Prevention of Mental Health Problems is a full-time course, this means that 42 hours a week are necessary to pursue the goals of this course. Regular attendance during the weeks is mandatory.

Teaching activities include: lectures, work group meetings, consultation hours, feedback on assignments, answers to questions via the Discussion forum on BB.

Toetsvorm

An individual written examination that counts for 60% of the final grade of this course.

A written assignment conducted in couples that counts for 30% of the final grade of this course.

A presentation on the written assignment conducted in couples, but graded individually, that counts for 10% of the final grade of this course.

To pass this course you have to have at least a 5.5 for both the individual exam, the presentation and the assignment.

Literatuur

The following book is required for students who follow the specialization Prevention and Public Health:

Planning Health Promotion Programs: An Intervention Mapping Approach, 3rd Edition, by L. Kay Bartholomew, Guy S. Parcel, Gerjo Kok, Nell H. Gottlieb, Maria E. Fernandez. February 2011, Hardcover (E-book also available)

Chapters which are applicable to this course will be announced through BB.

For Clinical Psychology and Artificial Intelligence students we will try to find a solution to only make the relevant chapters available.

Other literature will be provided through BB or as a reader. Some examples of literature which are relevant for this course are:

- Beekman, A.T.F., Smit, F., Stek, M.L., Reynolds, C.F., & Cuijpers, P.C. (2010). Preventing depression in high-risk groups. *Current Opinion in Psychiatry*, 23(1), 8–11. doi: 10.1097/YCO.0b013e328333e17f
- Holmes E.A., James E.L., Kilford E.J., & Deerprouse, C. (2012). Key Steps in Developing a Cognitive Vaccine against Traumatic Flashbacks: Visuospatial Tetris versus Verbal Pub Quiz. *PLoS ONE* 7(11). doi: 10.1371/annotation/eba0a0c8-df20-496b-a184-29e30b8d74d0
- Koning, I.M., Vollebergh, W.A.M., Smit, F., Verdurmen, J.E.E., van den Eijnden, R.J.J.M., ter Bogt, T.F. M. et al. (2009). Preventing heavy alcohol use in adolescents (PAS): cluster randomized trial of a parent and student intervention offered separately and simultaneously. *Addiction* 104, 1669-1678. doi:10.1111/j.1360-0443.2009.02677.x

Vereiste voorkennis

At the start of this course, we expect you to have mastered knowledge, insight, attitude and skills at a level which is comparable to the final qualifications stated by the Bachelor of either Health Sciences, Psychology or Artificial Intelligence at the VU.

Aanbevolen voorkennis

- Basic knowledge of psychopathology (symptoms of the most common psychiatric disorders).
- Basic knowledge on what prevention programs are and how they are Developed

Doelgroep

Health Science, Psychology and AI students.

Overige informatie

Registration for this course via VU-net.

Psychology of Effective Gaming

Vakcode	XMU_418145 ()
Periode	Periode 1
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	O.W. Schrofer
Examinator	O.W. Schrofer

Inhoud vak

<http://studiegids.uva.nl/xmlpages/page/2016-2017/zoek-vak/vak/29519>

Overige informatie

This course is offered at the UvA. For more information contact: FNWI Education Service Centre, Science Park 904, servicedesk-esc-science@uva.nl, +31 (0)20 525 7100.

Enrolment via <https://m.sis.uva.nl/vakaanmelden> is required.

Review Paper

Vakcode	P_MREVPAP ()
Periode	Ac. Jaar (september)
Credits	6.0
Voertaal	Engels
Faculteit	Fac. der Gedrags- en Bewegingswetensch.
Coördinator	dr. W. Donk
Examinator	dr. W. Donk
Niveau	500

Doel vak

To write a current literature review that covers an open issue in clinical or cognitive (neuro)psychology.

Inhoud vak

The review paper is a literature review written by the student under supervision of a member of the department of Clinical Neuropsychology or the department of Cognitive Psychology. Students may write a review on the basis of a self-selected topic provided that they find a member of the department willing to supervise the writing of the paper.

The topic must be narrow enough for the students to cover the literature within the designed period, but must be broad enough so that something is gained from writing a review, and must be of current interest in the literature.

-The review must be written at such level that it could be published in an academic journal

Onderwijsvorm

Students will be individually monitored and instructed by their supervisor in writing a literature review.
Further guidelines are given on the blackboard site 'Master Thesis Cognitive Neuropsychology'

Toetsvorm

The literature review is evaluated on the basis of the quality of paper and is graded by the supervisor.

Literatuur

Depends on the topic of research.

Overige informatie

The supervisor for the review paper cannot also be a thesis supervisor.
The topic of the review may not be the same as the topic of the review written in PSR.

Seminar Attention

Vakcode	P_MSEMATT (815100)
Periode	Periode 5
Credits	6.0
Voertaal	Engels
Faculteit	Fac. der Gedrags- en Bewegingswetensch.
Coördinator	dr. R.J. Godijn
Examinator	dr. R.J. Godijn
Docent(en)	prof. dr. J.L. Theeuwes
Lesmethode(n)	Hoorcollege
Niveau	400

Doel vak

To learn how to interpret and analyze theories and findings on attention and eye-movements. Learn how to set up experiments. Learn how to present and to write an essay.

Inhoud vak

The format of the seminar will be a discussion of one or two target articles, and student presentations, each week. Target articles for each week will be "classic" articles representing early and/or important studies on a specific topic or recent new papers in attention and eye movements. For the presentations, each student has to present the main findings of the target article for that week and is required to find a recent paper on the topic covered by the target article. Students have to prepare a 20 minute oral presentation in Microsoft Powerpoint. The rest of the class will be spent discussing the target articles and their relationship to the presented papers. Each student will give two presentations. The presentation will determine 30% of the course grade for each student. The target papers will be available on the course website and accessible via blackboard. One week after the last class, each student will submit a final paper (up to 8 pages, 12 pt. font, double spaced) on one of the topics covered in class. The paper will consist of a brief review of (at least) 6 research papers (including those already covered on that topic in class) and a proposal for a new

experiment. The paper will be worth 40%. Each class all students have to turn in a sheet of paper with a short question/remark about one of the papers discussed during that class (30% of the grade). Students will receive an introduction into the arts of oral presenting and of writing an essay as a preparation to the assignments.

Onderwijsvorm

Lectures and practical assignments.

Toetsvorm

Student presentation (30%), and writing a paper (40%) and sheet of paper with a short question/remark about one of the papers discussed (30%). Students are required to be present during all meetings. Attending the class is required.

Literatuur

Articles.

Seminar Cognitive Neuroscience

Vakcode	P_MSEMCNS (815098)
Periode	Periode 1
Credits	6.0
Voertaal	Engels
Faculteit	Fac. der Gedrags- en Bewegingswetensch.
Coördinator	dr. A.V. Belopolskiy
Examinator	dr. A.V. Belopolskiy
Docent(en)	dr. A.V. Belopolskiy
Lesmethode(n)	Hoorcollege

Doel vak

To extend students' knowledge in the field of cognitive and clinical neuroscience.

Inhoud vak

This is an advanced course on the current topics in cognitive neuroscience. After this course the students will have a firm understanding of the current state of affairs in the area of Cognitive Neuroscience, the current directions of the field and the contemporary methods that are used. Students will be able to present a summarized research article, critically evaluate it and discuss it with peers. Students will learn how to write a review paper on the contemporary topic in Cognitive Neuroscience and aggregate the relevant literature. Students will be prepared for choosing a topic for the future research project, internship or a thesis. Over the last two decennia, scientific research in the field of cognitive neuroscience has led to fundamental new insights in the relation between brain function and behavior. Research is ongoing, and in many cases, the latest insights have not yet traversed their ways down into the regular textbooks. This seminar offers students the possibility to discuss state of the art research. The latest insights into topics such as consciousness, default network, working memory, multisensory perception, and the mirror neuron system will be covered. The seminar will also cover important questions regarding legal and ethical aspects of cognitive and clinical neuroscience research.

Onderwijsvorm

Lectures, literature study, oral presentations and discussions.

Toetsvorm

Oral presentation, contribution to discussion, and a review paper.

Literatuur

Research papers to be announced.

Vereiste voorkennis

The requirement to participate is the completion of the basic Cognitive Neuroscience and Neuropsychology course. Alternatively, students may study the required literature by self-study. You need to contact the professor of Seminar Cognitive Neuroscience beforehand.

Serious Games

Vakcode	X_405097 ()
Periode	Periode 5
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	prof. dr. A.P.W. Eliens
Examinator	prof. dr. A.P.W. Eliens
Docent(en)	prof. dr. A.P.W. Eliens
Lesmethode(n)	Hoorcollege
Niveau	400

Doel vak

Serious games are more and more considered to be an effective means to bring about awareness, acquire skills, change behavior, and influence social patterns. With elementary game development technology, the students will explore the potential of serious games in a social context, using casual game mechanics, and what recently has been identified as the dynamics of gamification.

Inhoud vak

The course will cover the following topics:

- * an introduction to game design
- * practical skills in game development
- * game mechanics and scoring mechanisms
- * elementary game and utility theory
- * media & communication theory
- * game interaction patterns
- * practical applications of serious games

Students are required to work in teams of 2-4 people, with as a goal the actual development of a serious game, with social network support.

Onderwijsvorm

lectures and practicum

Toetsvorm

essay and practicum assignment(s)

Literatuur

online reference material(s)

Aanbevolen voorkennis

preferably, but not obligatory, project interactive multimedia and multimedia authoring

Doelgroep

Choice for master students CS, IS, and others, with an interest in multimedia and game development

Overige informatie

For information and registration, see: www.cs.vu.nl/~eliens/serious

Spatial Criminology

Vakcode	R_SpaCrim (212416)
Periode	Periode 5
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Rechtsgeleerdheid
Coördinator	dr. J.J. van der Kemp
Examinator	dr. J.J. van der Kemp
Lesmethode(n)	Werkcollege
Niveau	600

Doel vak

- (1) Students acquire knowledge of the latest theories and studies on the spatial distribution of crime;
- (2) Student are able to perform basic spatial criminological analyses as well as create crime maps using freeware software like QGIS and CrimeStat;
- (3) Students are able to interpret and discuss results from spatial analyses.

Inhoud vak

In this course the basic principles of Crime Mapping using a geographic information system (GIS) and spatial analyses are taught.

Mapping where crime takes place is the first step of the analysis of spatial distribution of crime. The relationship between theories and methods of spatial analysis are discussed. For example, assuming that the spatial distribution of crime is associated with social cohesion. How this can be investigated and with which methods of spatial analysis can be used in this section is discussed.

A number of different analytical methods are taught and practiced by assignments during the labs and during the final research project on a spatial crime problem.

Onderwijsvorm

As this course is mostly practice based (i.e. a lab course), attendance is of importance.

Toetsvorm

To be announced

Literatuur

Literature is made available via blackboard.

Aanbevolen voorkennis

Students should have basic knowledge of research methods and quantitative statistical analyses.

Intekenprocedure

For this course a maximum of 24 student may be registered. If the course is full no more places will be made available.

Overige informatie

This course requires you to bring your own laptop.

Technology for Games

Vakcode	XMU_418146 ()
Periode	Periode 2
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen

Inhoud vak

<http://studiegids.uva.nl/xmlpages/page/2016-2017/zoek-vak/vak/29888>

Overige informatie

This course is offered at the UvA. For more information contact: FNWI Education Service Centre, Science Park 904, servicedesk-esc-science@uva.nl, +31 (0)20 525 7100. Enrolment via <https://m.sis.uva.nl/vakaanmelden> is required.

The Social Web

Vakcode	X_405086 ()
Periode	Periode 4
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. D. Ceolin
Examinator	dr. D. Ceolin
Docent(en)	dr. D. Ceolin
Lesmethode(n)	Hoorcollege, Computerpracticum
Niveau	400

Doel vak

In this course the students will learn theory and methods concerning communication and interaction in a Web context. The focus is on distributed user data and devices in the context of the Social Web.

Inhoud vak

This course will cover theory, methods and techniques for:

- personalization for Web applications
- Web user & context modelling
- user-generated content and metadata
- multi-device interaction
- usage of social-web data

Onderwijsvorm

- lectures
- practical sessions
- assignments including final paper

Toetsvorm

Weighted average of group assignments and final individual paper

Literatuur

- course lecture slides
- selected articles, videos and Web links for each lecture

Aanbevolen voorkennis

Basic programming skills

Doelgroep

VU: mIS

UvA: master Information Studies - Human-Centered Multimedia

mCS

mAI

Veiligheid en burgerschap

Vakcode	S_VB ()
Periode	Periode 2
Credits	6.0
Voertaal	Nederlands
Faculteit	Faculteit der Sociale Wetenschappen
Coördinator	dr. R. van Steden
Examinator	dr. R. van Steden
Docent(en)	dr. R. van Steden, prof. dr. J.C.J. Boutellier
Lesmethode(n)	Hoorcollege, Werkgroep
Niveau	500

Doel vak

Leerdoelen: (1) herkennen en identificeren van centrale thematieken in de wetenschappelijke literatuur over veiligheid en burgerschap, (2) duiden en verklaren waarom veiligheid als maatschappelijk thema zo'n hoge vlucht heeft genomen, (3) kennis nemen en analyseren van hoe partijen in veiligheidsnetwerken zich tot elkaar verhouden, (4) een normatief, wetenschappelijk gefundeerd, standpunt kunnen bepalen ten aanzien van veiligheid als kernbegrip in de huidige samenleving en (5) een relatie kunnen leggen tussen sociale veiligheid en meer algemene bestuurskundige theorievorming.

Inhoud vak

In het seminar worden wetenschappelijke inzichten op het terrein van veiligheid en burgerschap zowel in de breedte als – op onderdelen – in de diepte behandeld. We richten ons daarbij op sociale (on)veiligheid in objectieve en subjectieve zin binnen de context van een veelkleurige netwerksamenleving. Een belangrijke vraag is wat het begrip veiligheid inhoudt en waarom veiligheid een zo belangrijke rol in onze samenleving is gaan spelen. Daarbij plaatsen we het thema veiligheid tegen de achtergrond van publieke moraal in de vorm van discussies over sociale spanningen, maatschappelijke verzuiving en een (dreigende) controlecultuur. Voorts spitst het seminar zich toe op de organisatie van veiligheid – dat wil zeggen: de (verschuivende) relaties tussen overheidsorganisaties, het bedrijfsleven en maatschappelijke instituties. Ook wordt de rol van burgers in lokale veiligheidsnetwerken onder de loep genomen. Kunnen veiligheidsnetwerken burgerschap ondersteunen, ondermijnen of zelfs creëren?

Het programma biedt studenten kennis over de volgende thematieken:

- Betekenissen van sociale (on)veiligheid;
- Veiligheidsbeleid, strafrecht en sociaal beleid;
- Publieke moraal;
- Sociale spanningen en radicalisering;
- Preventie, risicoprofilering en uitsluiting;
- Veiligheid in de netwerksamenleving;
- De politie, beveiliging en andere handhavers;
- Veiligheid en burgerparticipatie;
- De governance (sturing) van veiligheid.

Onderwijsvorm

Hoor- en werkcolleges.

Toetsvorm

Het seminar wordt afgesloten met een tentamen gericht op het toetsen van kennis over de opgegeven literatuur en collegestof.

Literatuur

Wordt nog bekend gemaakt.

Doelgroep

Masterstudenten Bestuurskunde, afstudeerrichting BvV.

Watson Innovation

Vakcode	X_405129 ()
Periode	Periode 2
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. L.M. Aroyo
Examinator	dr. L.M. Aroyo
Docent(en)	dr. L.M. Aroyo, A. Dumitrache MSc
Lesmethode(n)	Hoorcollege, Computerpracticum
Niveau	400

Doel vak

The Watson Innovation course is a collaboration between the Vrije Universiteit, University of Amsterdam and IBM Netherlands. It offers a unique opportunity to learn about IBM Watson, cognitive computing and the meaning of such artificial intelligence systems in a real world and big data context. Students from Computer Science and Economics faculties will join their complementary efforts and creativity in cross-disciplinary teams to explore the business and innovation potential of these technologies.

Inhoud vak

- Basics of Cognitive Computing and IBM Watson
- Understanding the original IBM Watson
- Develop ideas for Cognitive Computing apps
- Build real prototypes using IBM Watson technologies
- Showcase your ideas to real clients.

Onderwijsvorm

Lectures & practical sessions at locations of the VU Amsterdam and IBM Netherlands.

Toetsvorm

Evaluation of group projects and individual peer-reviews

Literatuur

Course lecture slides and related articles: - What is IBM Watson? (<http://www.ibm.com/smarterplanet/us/en/ibmwatson/what-is-watson.html>) - Building Watson: An overview of the DeepQA project (<http://www.aaai.org/ojs/index.php/aimagazine/article/download/2303/2165>) - CrowdTruth papers (<http://crowdtruth.org/papers/>)

Doelgroep

A balanced mix of Computer Science, AI, Information Science, Business Analytics and Business & Economics students (from VU as well as UvA) in their 3rd year of bachelor or master level.

Intekenprocedure

Places are limited, so sign up as soon as possible. For questions please contact b.timmermans@vu.nl or oana.inel@vu.nl

Overige informatie

Lecturer(s)

dr. L.M. Aroyo, B. Timmermans, O.Inel, A. Dumitrache