Computer Science

Vrije Universiteit Amsterdam - Faculteit der Bètawetenschappen - Computer Science - 2020-2021

Computer Scientists investigate how computer systems can be deployed in society. How can we develop good computer programs that solve complex problems like computing shortest traveling routes or unraveling DNA? How can large teams of programmers that span the globe develop good software? How are computing devices embedded in everyday objects like smart phones interconnected to form the Internet of Things?

The first year focuses on basic computer science expertise: programming, the architecture of a computer, how computers are interconnected to form large networks, and pervasive computing. The second year both deepens and broadens your knowledge, encompassing algorithmic design, mathematical skills, operating systems, and how to store and analyze data in an intelligent way. In the third year, a minor of your choice, at the VU or abroad, is followed by a bachelor thesis.

Info

Niveau	Bachelor
Taal	Engels
Duur	3 years
Vorm	Full Time
Studiepunten	180 EC
Faculteit	Faculteit der Bètawetenschappen

Onderwijs- en Examenregeling 2020-2021
Meer informatie over deze opleiding

Computer Science year 1

Omschrijving

The first year of the programme introduces the students to the field of Computer Science in general and provides them with elementary knowledge and skills in the areas of programming, software engineering, theoretical foundations, and computer systems.

Vakken

Naam vak	Periode	Credits	Code
Computational Thinking for Coders	P1	3EC	XB_0046
Computer Programming	P1	6EC	XB_40011
English Language Test	P1	0EC	VU_ELT
Introduction to Computer Science	P1	3EC	X_401087
Pervasive Computing	P2	6EC	XB_40008
Requirements Engineering	P2	6EC	XB_0032
Web Technology	P3	6EC	X_400488
Computer Organization	P4	6EC	XB_40009
Logic and Sets	P4	6EC	X_401090
Computer Networks	P5	6EC	X_400487
Networks and Graphs	P5	6EC	X_401010
Computer Programming Project	P6	6EC	X_400556

Computer Science year 2

Omschrijving

The courses in the second year of the programme build on the foundation laid during the first year. They are more advanced and require a higher degree of independence. Towards the end of the second year, students are also required to complete a Career Orientation and Professional Skills training course.

Vakken

Naam vak	Periode	Credits	Code
Data Structures and Algorithms	P1	6EC	X_400614
Object-Oriented and Functional Programming	P1	6EC	XB_0019
Operating Systems	P2	6EC	X_405067
Statistical Methods	P2	6EC	X_401020
Information Management for CS	P3	6EC	XB_0047
Linear Algebra	P4	6EC	X_400649
Software Design	P4	6EC	XB_40007
Databases	P5	6EC	X_401008
Logic and Modelling	P5	6EC	X_401015
Study and Career for CS	P5	0EC	X_400633
Human-Computer Interaction	P6	6EC	X_400432

Computer Science year 3

Omschrijving

In the first semester of the third year, students choose a minor, which consists of a coherent package of elective courses in a particular field. There is a broad choice of minor programs that either deepen the students' knowledge of Computer Science and related (sub)fields, prepare them for a Master programme in a different field, or simply broaden their horizon. It is worth to mention the Educational Minor, which prepares students for becoming a Computer Science school teacher. Alternatively, students may decide to spend this semester abroad or assemble an individual minor package. In any case, the choice of minor program requires approval by the examination board. The second semester consists of three compulsory courses and the Bachelor Project. The latter is an individual project where students deepen their knowledge of a selected topic and apply the skills and knowledge they have acquired during the bachelor programme.

Opleidingsdelen

- Computer Science minor programmes
- Computer Science year 3 compulsory courses

Computer Science minor programmes

Omschrijving
The different minors directly accessible for the students enrolled in the Bachelor programmes Computer Science, Information Sciences and Artificial Intelligence.

Opleidingsdelen

- University minors
- Minor Deep Programming
- Minor Bioinformatics and Systems Biology
- Minor Data Science
- Educational minor Computer Science
- Minor Information Sciences

University minors

Omschrijving
The university minors - Are in principle accessible to all bachelor students of all faculties. - Have an entry requirement for some minors. - Have a fixed study load of 30 EC. - No prior permission from your own Examination Board is required to have the 30 EC of this minor count in your graduation course package. - In case a particular subject of the university minor is (also) part of your regular curriculum, you cannot (fully) follow this minor because courses cannot be counted twice. In that case, ask permission from the Examination Board for the filling out of the profiling space.

Opleidingsdelen

- Minor Sport, Movement and Health
- Minor Literature
- Minor Political Science
- Minor Brain and Mind
- Minor Psychology and the Brain
- Minor Islam
- Minor Law and Global Society
- Minor Digital Humanities and Social Analytics
- Minor Economics
- Minor Philosophy
- Minor Business Administration - New Ways of Doing Business
- Minor in English
- Minor Global Health
- Minor Managing Digital Innovation
- Minor Technology, Law and Ethics
- Minor History
- Minor Gender and Diversity
- Minor Sustainability: Global Challenges, Interdisciplinary Solutions
- Minor Development and Global Challenges
- Minor Peace and Conflict Studies
- Minor The Writing Academy

Minor Sport, Movement and Health

Vakken

Naam vak	Periode	Credits	Code
Introduction to Exercise Physiology	P1	6EC	B_IF
Rehabilitation	P1	6EC	B_REVAL
Sport Psychology	P1	6EC	B_SPORTPSY
Applied Exercise Physiology	P2	6EC	B_TIF
Sensorimotor Coordination	P2	6EC	B_SENSOCOR

Naam vak	Periode	Credits	Code
Neuropsychology and Rehabilitation Psychology	P3	6EC	B_NEURREVPSY
Talent and Talent Identification	P3	6EC	B_TALIDENT

Minor Literature

Vakken

Naam vak	Periode	Credits	Code
Literary Reception of Classical Stories	P1	6EC	L_AABAALG202
Masterpieces from World Literature 1	P1	6EC	L_AABAALG077
Creative Writing	P2	6EC	L_NNBAALG001
Writer at Work	P2	6EC	L_NNBAALG002
Masterpieces from World Literature 2	P2+3	6EC	L_AABAALG078

Minor Political Science

Vakken

Naam vak	Periode	Credits	Code
Comparative Political Research	P1	6EC	S_CPR
State, Power and Conflict	P1	6EC	S_SPC
EU Governance in an International Context	P2	6EC	S_EUGIC
Global Political Economy	P2	6EC	S_GPE
Research Project Political Science	P2+3	6EC	S_RPPS

Minor Brain and Mind

Omschrijving

The purpose of this minor is to acquaint the student with different disciplines within the field of Neuroscience. The student will become familiar with the workings and functions of different types of brain cells and brain areas. The student will learn how this knowledge can be used to understand characteristics of the healthy brain (e.g., perception, attention, learning and memory, consciousness, personality), of the developing brain (pre- and postnatal), and of the diseased brain (e.g., depression, addiction, eating disorders). In addition, the students will be familiarized with recent findings from the fields of human genetics and will actively participate in nature-versus-nurture debates. Finally, this minor provides an introduction into recent technological advances in brain-machine interfaces, deep brain stimulation, and robotics in the context of Neuroscience. The integration of disciplines such as biology, psychology, sociology, and genetics, is central to this minor. Students learn to think critically about how knowledge of the brain and the human genome can be applied to tackle societal issues.

Intekenen

TARGET GROUP: Third year BSc students alpha and gamma topics (e.g., Sociology, Psychology, Economics, Law, Artificial Intelligence) and students from Lifesciences (e.g., Biology, Fysics, Chemistry, Medicine, Movement Science, Nutrition) with a broad interest. ENTRY REQUIREMENTS: Bachelor: 90 ECTS, HBO: 120 ECTS Due to overlap in curriculum, this minor is NOT open for students from Biomedical Sciences-VU and Health & Life Sciences-VU. These students, as well as students who plan to pursue a career in Neuroscience, are advised to sign up for the more specialised minor Biomolecular/Neurosciences. Please contact the minor coordinator dr Sophie van der Sluis (s.vander.sluis@vu.nl) for more information about participation. For international students, we explicitly note that you will only obtain credits for the courses if you successfully pass the course exams as described in the individual course guides (i.e., participation alone is not sufficient).

Vakken

Naam vak	Periode	Credits	Code
Cognitive Neuroscience	P1	6EC	AB_1056
Nature versus Nurture	P1	6EC	AB_1057
Brain in Trouble	P2	6EC	AB_1038
The Developing Brain	P2	6EC	AB_1059
Mind and Machine	P3	6EC	AB_1060

Minor Psychology and the Brain

Omschrijving
De kennis over de psyche en ons brein groeit snel. Wekelijks verschijnen er artikelen en boeken met baanbrekende inzichten over de werking van onze hersenen en het effect hiervan op ons gedrag. Deze kennis verandert de wereld, met steeds sterk wordende effecten op marketing, rechtspraak, technologie, computers, onze voeding en de economie. Het geeft ons inzichten in waarin en waarom we van elkaar verschillen, en helpt ons bepaalde groepsprocessen in de maatschappij te verklaren. Kennis over de psychologie en ons brein zijn een must voor iedereen die wil begrijpen waarom we doen wat we doen. Doel De minor Psychologie en het brein laat studenten kennismaken met de vakgebieden die gedrag en brein onderzoeken. Studenten krijgen in de minor een overzicht van de psychologie en de cognitieve neurowetenschappen, en worden vervolgens geïntroduceerd in de manier van onderzoek doen in deze velden. De doelstellingen hierbij zijn bij de student: a. de kennis aan te brengen om met verstand te oordelen over claims die zowel binnen als buiten de wetenschap over psyche en brein worden gemaakt, b. de vaardigheden bij te brengen om zelf onderzoek te doen naar psyche en brein. Doelgroep: De minor is aantrekkelijk voor studenten met een algemene interesse in psychologie en de hersenen, met voorkennis van statistiek (zoals aangeboden in bachelors in de sociale wetenschappen, economie, exacte en biomedische wetenschappen). Ingangseisen: -Minstens 90 EC behaald binnen één bachelorprogramma. -Minstens 6 EC behaald aan statistische vakken. Aantal deelnemers: Er geldt een maximum van tachtig studenten per jaar, die op basis van First come First serve worden gekozen.

Vakken
Naam vak	Periode	Credits	Code
Evolutionary Psychology	P1	6EC	P_BEVOLPS
Introduction Psychology (UM)	P1	6EC	P_UINLPSY
Biological Psychology (UM)	P2	6EC	P_UBIOPSY
Twin Research in Psychology (UM)	P2	6EC	P_UTWRES
Neuropsychology (UM)	P3	6EC	P_UNEUPSY

Minor Islam

Vakken
Naam vak	Periode	Credits	Code
Exploring a Profile: Introduction Qur'an and Sunna	P1	6EC	G_BATRSPC103
Islam and European Culture	P1	6EC	G_BATRSAL005
Hadith Studies	P2	6EC	G_BATRSAL026
Islamic Theology/Kalam	P2	6EC	G_BATRSAL027
Islamic Ethics	P3	6EC	G_BATRSAL049

Minor Law and Global Society

Omschrijving
Globalisation impacts the way we live. We meet different people, learn about diverse cultures, and internet facilitates world-wide communication and information exchange. Law traditionally focuses on nation states, but topics like migration, internet, climate, and terrorism do not stop at the border. Quite the contrary. The objective of this minor is to become aware of the fact that many societal issues ask for a transboundary approach to law. The minor explores the role of law in defining and resolving social issues concerning the globalisation of societies. Central topics are migration (transnational movement), internet (transnational communications) and climate change (transnational action). This minor offers students insight in questions, such as: • Why transnational issues are not suited for unilateral, national actions; • What states can do within international law (such as European Union law); • The ways in which states are currently responding to these issues; • The criticism of the current actions and regulations; • Future perspectives. After completing this minor, the student has knowledge of the core of the legislation concerning the three topics, has gained insight in the most important critique and analysis of this legislation (from a legal, policy-orientated, sociological, anthropological and/or philosophical perspective), and is capable of critically judging proposed changes. For each of the topics the student knows which actors play a role in making rules and policy, how states work together (or not), the consequences of this (lack of) cooperation and the future perspective for transnational regulations in migrations, climate change and internet. Knowledge of these ‘case studies’ and the theory involved also enables student to independently reflect on other areas of transnational problems, such as security.

Vakken
Naam vak	Periode	Credits	Code

Naam vak	Periode	Credits	Code
Street Law	Ac. Year (September)	6EC	R_StrLaw
Human Rights and the Border	P1	6EC	R_HumRB
Internet Governance	P1	6EC	R_InternGov
Climate Change Law	P2	6EC	R_TL-TP
Human Rights and Citizenship	P2	6EC	R_HumRC
Current Issues in Migration Law	P3	3EC	R_HumRCI
Current Issues in Transnational Law	P3	3EC	R_CIsTrL

Minor Digital Humanities and Social Analytics

Omschrijving
The following course is compulsory: Digital Humanities and Social Analytics in Practice (XB_0015) Introduction to Python for Humanities and Social Sciences (L_AABAALG075): If you are already have programming skills (students computer science and informatics) you can choose an alternative course from a selection of Humanities and Social Science courses, after consultation with the coordinator of the minor.

Vakken

Naam vak	Periode	Credits	Code
Introduction to Digital Humanities and Social Analytics	P1	6EC	L_AABAALG076
Introduction to Python for Humanities and Social Sciences	P1	6EC	L_AABAALG075
Data Science: Visualization and Analytics in R	P2	6EC	S_DSVAR
Interpreting Information in Text by Humans and Machines	P2	6EC	L_PABAALG005
Digital Humanities and Social Analytics in Practice	P3	6EC	XB_0015

Minor Economics

Omschrijving
How to deal with the economic impacts due to the COVID-19 epidemic? Will the monopoly power of large platforms like Facebook, Amazon and Uber increasingly interfere with national economic goals and policies? Are crypto currencies only for criminals or also affecting the real economy? And how do gender and ethnic discrimination affect the Dutch labor market? Economics is about much more than finance, banks and money: it addresses some of the most pressing problems of today. The choices we make in our (economic and social) policies can affect our world in very real ways. In the University Minor in Economics you will learn to tackle societal issues from an economic perspective. You will be able to grasp why economies grow or stay behind, why economic crises occur, and critically asses the news coverage. But the minor is about more than that: it offers a strong foundation for understanding the world and societal challenges from an economic lens. In this minor we will jointly search for solutions for issues we face every day. The minor in Economics is a 30 EC programme of 5 compulsory courses, taught in English. More information is also available on our general Canvas page https://canvas.vu.nl/courses/27772. Notes: - Students in the BSc programmes Economics and Business Economics as well as Econometrics are excluded from participating in this university minor. - Note for students Business Administration (Bedrijfskunde, BK) and International Business Administration (IBA): The course ‘An Introduction to Economics’ is quite similar to the B1-course ‘Economics’, resp. ‘Economics for the Global Era’ of your BK/IBA programme. Therefore, instead of the course ‘Introduction to Economics’ you must choose one of the following courses: ‘Introductory Econometrics for Business and Economics’ from the minor Applied Econometrics, or ‘Health Economics’ from the minor Health Care Management.

Opleidingsdelen

- Minor Economics – regular track
- Minor Economics – track for BK and IBA

Minor Economics – regular track

Omschrijving
This regular track is meant for all students except students Business Administration (Bedrijfskunde, BK) and International Business Administration (IBA); they can follow the adjusted track for BK and IBA.

Vakken

Naam vak	Periode	Credits	Code
An Introduction to Economics	P1	6EC	E_ME_AIE
Economic Challenges	P1	6EC	E_EBE1_EC
Choices, Inequality and Welfare	P2	6EC	E_ME_CIW
The Economics of Crises	P2	6EC	E_ME_TEC
Applying Economics	P3	6EC	E_ME_APEC

Minor Economics – track for BK and IBA

Omschrijving
This track is exclusively meant for students Business Administration (Bedrijfskune, BK) and International Business Administration (IBA).

Opleidingsdelen

- Minor Economics – track for BK and IBA - obligatory courses
- Minor Economics – track for BK and IBA- Choice

Minor Economics – track for BK and IBA - obligatory courses

Omschrijving
Four courses are obligatory for studenten BK and IBA.

Vakken

Naam vak	Periode	Credits	Code
Economic Challenges	P1	6EC	E_EBE1_EC
Choices, Inequality and Welfare	P2	6EC	E_ME_CIW
The Economics of Crises	P2	6EC	E_ME_TEC
Applying Economics	P3	6EC	E_ME_APEC

Minor Economics – track for BK and IBA- Choice

Omschrijving
Students BK and IBA have to choose 1 of 2 courses.

Vakken

Naam vak	Periode	Credits	Code
Health Economics	P1	6EC	E_EBE3_HEC
Introductory Econometrics for Business and Economics	P1	6EC	E_EOR3_IEBE

Minor Philosophy

Vakken

Naam vak	Periode	Credits	Code
Great Minds I	P1	6EC	W_BA_MND1
Political Philosophy	P1	6EC	W_BA_PP
Ethics	P2	6EC	W_BA_ETEN
Philosophy of Science	P2	6EC	W_BA_SCIE
Great Minds II	P2+3	6EC	W_BA_MND2

Minor Business Administration - New Ways of Doing Business

Omschrijving

Why are some companies outperforming their rivals? How is it that companies like Nike and ASML are responsive to changes in customer preferences and are successfully battling their competitors, whereas companies like General Motors and Philips struggle? Why are companies like Airbnb and Uber successful in developing and selling product and service innovations, whereas publishers and record companies lack innovative capacity? How is it possible that long-existing companies are surpassed by new venture start-ups with radical different business approaches, such as Shapeways and Blendle? The answers to these questions show that high-performing companies excel in using new ways of management and organization. Specifically, these companies have business models that work in today's dynamic environment. In the Minor in Business Administration you will learn to build, assess, and change business models and tackle management and organization issues. The Minor in Business Administration is a 30 EC programme taught in English. You will become familiar with the foundations of business administration: strategy, marketing, finance, accounting, logistics, technology, and human resource management. Using business model thinking, you will combine and apply the knowledge from these disciplines to study businesses. In addition, midway the programme you are asked to select a specialization theme, which enables you to obtain a deeper understanding about the relationship between your profession and a business discipline. In addition to academic skills, the programme emphasizes professional skills, including creativity, communication, reflexivity, and consultancy. The Minor Business Administration provides you with knowledge and skills to successfully act in dynamic organizations, irrespective of your professional background. Students in the BSc programmes Economics and (International) Business Administration are excluded from participating in this University Minor.

Vakken

Naam vak	Periode	Credits	Code
Business Professionals	P1	6EC	E_MB_BPROF
Foundations of Business Administration	P1	6EC	E_MB_FBA
Business Model Assessment	P2	6EC	E_MB_BMA
Business Model Innovation	P2	6EC	E_MB_BMI
Business Project	P3	6EC	E_MB_BPROJ

Minor in English

Vakken

Naam vak	Periode	Credits	Code
Global English	P1	6EC	L_ETBAETK209
Minor English: Grammar and Writing 1	P1	6EC	L_ETBAALG007
Minor English: Pronunciation and Presentation	P2	6EC	L_EABAALG006
Minor English: Writing 2	P2	6EC	L_ETBAALG005
Minor English: English in my own Discipline	P3	6EC	L_ETBAALG008

Minor Global Health

Omschrijving

New and emerging infectious diseases, changing disease patterns, ageing, rising costs of healthcare – these are problems that add complexity to the already considerable health challenges the world is facing today. Many diseases do not stop at national borders, and most health problems have social, political and economic impacts. The world is more than ever in need of a vision of health that spans the globe. At the same time, innovative answers to these challenges emerge, like novel pharmaceuticals, neurotechnologies, genomics, mhealth (using mobile phones), field test kits that replace whole laboratories, as well as innovative funding schemes and care arrangement (e.g. community-based health care). But how can we make these answers fit the challenges that are emerging? History shows numerous, at best, not-so-effective health interventions and unintended consequences. To effectively address these complex health challenges, global health researcher need to cross-disciplinary boundaries and interact with health professionals, patients and others to gain in-depth understanding of global health problems, and to set out cohesive and strategic action to solve these problems.

Vakken

Naam vak	Periode	Credits	Code
Future Challenges in Global Health	P1	6EC	AB_1042
Key Strategies in Disability and Neuropathy	P1	6EC	AB_1045
Double Burden of Disease	P2	6EC	AB_1109

Naam vak	Periode	Credits	Code
Drivers of Change in Global Health	P2	6EC	AB_1108
Community-based Health Interventions	P3	6EC	AB_1110

Minor Managing Digital Innovation

Omschrijving

The opportunities of the digital era are essentially unlimited. Innovative technologies may completely change how business and design processes are set up, while new directions for fruitful start-ups are countless. This calls for new and strategic ways of organising these opportunities to innovate in the digital world. If you are interested in new, exciting ways to organise for digital innovation, if you want to learn how new digital technologies such as big data, 3D printing and robotization change the way of working in your own field of expertise; if you are interested in how to design and organise pervasive digital technologies, if you would like to start your own Spotify, Uber or Airbnb in your own specific discipline and would like to learn how to do so; if you are interested in new professional, organisational and managerial insights related to digital innovation, this minor is for you. This minor is a 30 EC programme taught in English. The programme consists of five courses taught during the first semester of the third year of your Bachelor program. Students in the Bachelor programmes (International) Business Administration are excluded from participating in this university minor.

Vakken

Naam vak	Periode	Credits	Code
Introduction to Digital Innovation	P1	6EC	E_MM_IDI
Strategic Management of Technology and Innovation	P1	6EC	E_BK3_SMTI
Business Intelligence and Analytics	P2	6EC	E_MM_BIA
New Ways of Working	P2	6EC	E_MM_NWW
Emerging Technologies for E-Business and Online Commerce	P3	6EC	E_IBA3_ETEOC

Minor Technology, Law and Ethics

Vakken

Naam vak	Periode	Credits	Code
Governance and Regulation of Emerging Technologies	P1	6EC	R_GRET
Robot Law and Artificial Intelligence	P1	6EC	R_RLAI
Data Analytics and Privacy	P2	6EC	R_DAP
Philosophy and Neuroethics	P2	6EC	W_BA_PNEU
Law and Ethics of Reproductive Technologies	P3	6EC	R_LERT

Minor History

Vakken

Naam vak	Periode	Credits	Code
European History 500-1500	P1	3EC	L_GABAGES120
Imagining the Dutch: themes in Dutch History	P1+2	6EC	L_GCBAALG003
Decolonizing Europe: History and Memory	P2	6EC	L_GCBAGES200
European History 1500-1800	P2	3EC	L_GABAGES122
Transatlantic Connections	P2	6EC	L_GABAALG016
Oral History & Biography	P3	6EC	L_AABAGES208

Minor Gender and Diversity

Omschrijving

Choose 2 of the following 3 courses: The Personal is Political: Biography, Gender and Diversity (L_AABAALG068), American Film (L_ELBAELK208) or Identity, Diversity and Inclusion (S_IDI).

Vakken

Naam vak	Periode	Credits	Code
Sexual Health: Threats and Opportunities	P1	6EC	AB_1034
Theorizing Gender and Intersectionality	P1+2+3	6EC	W_TGI
American Film: Cinematic Representations of the "Other"	P2	6EC	L_ELBAELK208
Identity, Diversity and Inclusion	P2	6EC	S_IDI
The Personal is Political: Biography, Gender and Diversity	P2	6EC	L_AABAALG068
Religions and Gender	P3	6EC	G_BATRSAL054

Minor Sustainability: Global Challenges, Interdisciplinary Solutions

Intekenen
Students from other universities that want to register for this minor may need to indicate to which BSc programme the minor "Sustainability: Global Challenges, Interdisciplinary Solutions" belongs. Kindly fill the BSc program Aarde, Economie & Duurzaamheid.

Vakken
Naam vak	Periode	Credits	Code
Grand Challenges for Sustainability	P1	6EC	E_IBA3_GCS
Sustainability and Environmental Change	P1	6EC	AB_1230
Global Development and Prosperity	P2	6EC	AB_1275
Governance of Global Sustainability	P2	6EC	AB_1229
Designing Solutions for Global Sustainability	P3	6EC	AB_1231

Minor Development and Global Challenges

Omschrijving
This minor explores a number of burning issues in the global world, such as environment and sustainability, poverty and unequal economic growth, global political economy, diversity and inequality, and urbanization. Contrary to the previous minor entitled Development Studies, which focused on issues surrounding poverty and social inequality in less developed countries, or the Global South, this new minor approaches the aforementioned issues through an understanding of “development” as a field that not only pertains to so-called developing countries but also to our own western, so-called developed, societies. In other words, the minor Development and Global Challenges addresses a select number of burning issues far away and in our own backyards. The minor both addresses the policy level (including the role of states, transnational corporations, and non-governmental organizations) and local responses to contemporary global challenges; The minor critically assesses earlier conceptualizations and approaches (governance) of development and discusses their successes and failures; The minor examines local responses to aforementioned issues, the importance of political empowerment, and the conditions under which these responses (and strategies) have been/can be successful; The minor addresses global challenges such as environmental issues, urbanization and sustainability, and social inequality both in the global south as well as in the so-called developed world; The minor acknowledges the fact that global challenges and burning issues are deeply connected at a global scale, and need to be confronted at different levels (global, national, local)

Vakken
Naam vak	Periode	Credits	Code
Development and Globalization	P1	6EC	S_DG
Environment and Development	P1	6EC	S_ED
Global Political Economy	P2	6EC	S_GPE
Identity, Diversity and Inclusion	P2	6EC	S_IDI
Urban Studies	P2+3	6EC	S_UBS

Minor Peace and Conflict Studies

Vakken
Naam vak	Periode	Credits	Code
Philosophy and the Ethics of Political Violence: Peace, War and Terrorism	P1	6EC	S_PEV
Political Violence and the Human Condition	P1	6EC	S_PVHC
Peace and Conflict: From Theory to Practice	P1+2+3	6EC	S_PC

Naam vak	Periode	Credits	Code
Conflict and Peace Building: Global and Intersectional Perspectives	P2	6EC	S_CPB
The Law and Politics of Fencing the Use of Force	P2	6EC	S_LPFUF

Minor The Writing Academy

Vakken

Naam vak	Periode	Credits	Code
Multatuli from a Multicultural Perspective	P1	6EC	L_AABAALG083
Writers on the Catwalk	P1	6EC	L_AABAALG082
Good Reads in Context 1	P1+2	6EC	L_AABAALG080
Creative Writing	P2	3EC	L_AABAALG084
Stories from the Rijksmuseum	P2	6EC	L_AABAALG085
Good Reads in Context 2	P3	3EC	L_AABAALG081

Minor Deep Programming

Omschrijving

The minor Deep Programming elaborates on important principles, different paradigms and modern developments in computer programming. Students have to choose five out of the six available courses (among these six, the Project Autonomous Driving has limited capacity). Equational Programming is an advanced course on programming in the functional language Haskell. Compiler Construction provides in-depth knowledge on building compilers for translating source code from a high-level to a lower-level programming language. Secure Programming focuses on cryptography in software development. Concurrency & Multithreading teaches foundations and programming principles for multicore computing. Advanced Network Programming covers advanced concepts in network communication, beyond simple socket communication. This minor aims to turn students into highly skilled programmers and is an excellent preparation for entering a Master program in Computer Science.

Vakken

Naam vak	Periode	Credits	Code
Advanced Network Programming	P1	6EC	XB_0048
Concurrency & Multithreading	P1	6EC	X_401031
Equational Programming	P2	6EC	X_401011
Secure programming	P2	6EC	XB_40005
Compiler Construction	P3	6EC	XB_0003
Project Autonomous Driving	P3	6EC	XB_0045

Minor Bioinformatics and Systems Biology

Omschrijving

The minor Bioinformatics and Systems Biology allows students to gain essential data science skills such as programming and calculus. Moreover, it introduces current research in Bioinformatics and Systems Biology. This minor will help students prepare for the MSc Bioinformatics & Systems Biology at the VU and UvA. In the minor programme you will get introduced to current research in Bioinformatics and Systems Biology. This part is provided as 12 EC in taught courses that are compulsory for every student in the minor programme. In addition, 12-18 EC will of courses will be assigned to you depending on your primary BSc programme. The idea of these courses is to prepare you for an MSc in Bioinformatics and Systems Biology. The courses that are assigned include: Calculus, Programming in Python and Biochemistry. The minor is 30 EC total, see the following page for detailed information on the courses: https://canvas.vu.nl/courses/37187/pages/compulsory-and-optional-courses It is essential to email the minor coordinator (bscminorbsb.beta@vu.nl) to check your list of courses before starting the minor. To gain admission to the MSc Bioinformatics & Systems Biology you need to complete all the courses as agreed by the minor coordinator. Information on registration for the BSc minor can be found here: https://canvas.vu.nl/courses/37187/pages/registration-for-the-bsc-minor-

Opleidingsdelen

- Minor Bioinformatics and Systems Biology compulsory courses
- Minor Bioinformatics and Systems Biology electives
- Minor Bioinformatics and Systems Biology HBO Bioinformatics / Biotechnology

Minor Bioinformatics and Systems Biology compulsory courses

Vakken

Naam vak	Periode	Credits	Code
Principles of Bioinformatics	P1	6EC	X_401094
Research Questions in Bioinformatics	P1+2+3	6EC	XB_401081

Minor Bioinformatics and Systems Biology electives

Omschrijving

List of elective courses (choose courses up to 12 ECTS in total)

Vakken

Naam vak	Periode	Credits	Code
Calculus 1	P1	6EC	X_400635
Knowledge and Data	P1	6EC	X_400083
From Protein to Cell	P2	6EC	AB_1052
Information Retrieval	P2	6EC	X_400435
Mechanics and Thermodynamics in the Cell	P2	6EC	X_422589
Molecular Cell Biology	P2	6EC	AB_1053
Evolutionary Genetics	P3	6EC	AB_1022

Minor Bioinformatics and Systems Biology HBO Bioinformatics / Biotechnology

Vakken

Naam vak	Periode	Credits	Code
Calculus	P1+2	6EC	X_400617
Evolutionary Genetics	P3	6EC	AB_1022

Minor Bioinformatics and Systems Biology Biomedical Sciences / Biology / HLO

Vakken

Naam vak	Periode	Credits	Code
Calculus	P1+2	6EC	X_400617
Introduction to Programming (PYTHON)	P2	6EC	X_401096

Minor BSB constrained choice Artificial Intelligence

Vakken

Naam vak	Periode	Credits	Code
Calculus	P1+2	6EC	X_400617
Biochemistry	P2	6EC	AB_1137

Minor Bioinformatics and Systems Biology Medical Natural Sciences

Vakken

Naam vak	Periode	Credits	Code
Introduction to Programming (PYTHON)	P2	6EC	X_401096

Naam vak	Periode	Credits	Code
Evolutionary Genetics	P3	6EC	AB_1022

Minor Data Science

Omschrijving

In the minor Data Science, students deepen their knowledge of various aspects in the field of data science. The minor consists of a number of advanced courses that complement the corresponding bachelor programmes in Information Sciences and Artificial Intelligence in the direction of data collection and data-driven solution methods. There are courses introducing the main topics in Data Science and providing some necessary knowledge of calculus and information retrieval, as well as giving a more societal perspective in a course on Data Science and Privacy. The minor is concluded with the hands-on project Data Wrangling, in which students learn how to scrape data. The minor consists of 30 ECTS in total.

Vakken

Naam vak	Periode	Credits	Code
Introduction to Data Science	P1	6EC	XB_0018
Data Wrangling	P3	6EC	XB_0014

Opleidingsdelen

- Minor Data Science constrained choice 6 EC
- Minor Data Science constrained choice 12 EC

Minor Data Science constrained choice 6 EC

Vakken

Naam vak	Periode	Credits	Code
Data Structures and Algorithms	P1	6EC	X_400614
Strategic Management of Technology and Innovation	P1	6EC	E_BK3_SMTI

Minor Data Science constrained choice 12 EC

Vakken

Naam vak	Periode	Credits	Code
Data Analytics and Privacy	P2	6EC	R_DAP
Information Retrieval	P2	6EC	X_400435
Logistics Analysis	P2	6EC	X_401084

Educational minor Computer Science

Opleidingsdelen

- Educatieve Minor verplicht

Educatieve Minor verplicht

Vakken

Naam vak	Periode	Credits	Code
Education Minor Didactics 1	P1	6EC	O_EMDID1
Education Minor Practical Training 1	P1	6EC	O_EMPRAK1
Education Minor Didactics 2	P2+3	9EC	O_EMDID2
Education Minor Practical Training 2	P2+3	9EC	O_EMPRAK2

Minor Information Sciences

Omschrijving
The minor Information Sciences provides Computer Science, Artificial Intelligence and Information Sciences bachelor students with the theoretical framework and skill set that are necessary to be successful in the Information Sciences Master programme. The courses build upon the students' technical background, and introduce topics around the theme of Digital Transformation and Sustainability, which is the focus of the Master in Information Sciences.

Intekenen
The minor Information Sciences is open to all students in the Bachelor programmes of Computer Science, Artificial Intelligence and Information Science. For more information concerning the educational programme contact the study advisor. The minor is coordinated by Emitzá Guzmán, she can be contacted through email: e.guzmanortega@vu.nl or telephone: +31 20 59 88881.

Vakken

Naam vak	Periode	Credits	Code
Strategic Management of Technology and Innovation	P1	6EC	E_BK3_SMTI

Opleidingsdelen

- Minor Information Sciences constrained choice

Minor Information Sciences constrained choice

Vakken

Naam vak	Periode	Credits	Code
Environment and Development	P1	6EC	S_ED
Grand Challenges for Sustainability	P1	6EC	E_IBA3_GCS
Introduction to Digital Humanities and Social Analytics	P1	6EC	L_AABAALG076
Information Retrieval	P2	6EC	X_400435
Sustainable Supply Chain Management	P2	6EC	E_IBA3_SSCM
Designing Solutions for Global Sustainability	P3	6EC	AB_1231

Computer Science year 3 compulsory courses

Vakken

Naam vak	Periode	Credits	Code
Bachelor Project Computer Science	Ac. Year (September)	15EC	XB_40001
Automata and Complexity	P4	6EC	X_401049
Machine Learning	P4	6EC	X_400154
Philosophy and Ethics	P5	3EC	X_400433

Computer Science Honours programme

Opleidingsdelen

- Interdepartmental Honours Courses
- Honours Programme CS/AI/IMM

Interdepartmental Honours Courses

Omschrijving
The interdisciplinary components of the Honours Programme are taught mainly in the evening by lecturers from Vrije Universiteit, the University of Amsterdam and Amsterdam University College, as well as guest lecturers from the Netherlands and abroad. The classes are small and you will be expected to give presentations, write papers and make an active contribution to discussions. You have to choose at least 12 credits of Interdepartmental

honours courses from the overview of interdepartmental honours courses, as well as an application form, at: http://www.vu.nl/honourscourses.

Honours Programme CS/AI/IMM

Vakken

Naam vak	Periode	Credits	Code
Big Ideas in Computing	P5	6EC	X_HP005

Courses

Advanced Network Programming

Vakcode	XB_0048
Studiepunten	6
Periode	P1
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. ir. A.K. Trivedi
Examinator	dr. ir. A.K. Trivedi
Betrokken Docenten	dr. L. Wang, dr. ir. A.K. Trivedi
Onderwijsvormen	Werkcollege, Hoorcollege, Practicum

Doel vak

The objective of this course is to teach students about advanced concepts in networking technologies beyond the basic TCP/IP protocol and socket abstraction. Upon completion of this course students will be able to: * Understand the internals of Linux's TCP/IP stack implementation, and data center networks * Explain network stack design and implementation challenges associated with multi-core systems and high-speed networks (100+ Gbps) * Analyze various network stack designs (kernel, userspace, application-specific) and APIs (e.g., sockets, RDMA and friends) on their trade-offs, performance gains, and implementation efforts * Understand how to build a high-performance network infrastructure for large-scale cloud data centers and how to program and manage such a network with software * Learn about ongoing and emerging research challenging in networking technologies

Inhoud vak

The course covers recent advancements in networking technologies in general purpose computing (e.g., data center, cloud computing). The course is split into two themes: End-host networking and network infrastructure. In the end-host networking theme, students will learn about internals of the Linux networking stack, challenges associated with delivering high performance network I/O operations (100+ Gbps bandwidth, millions of network operations/sec, many/multi core scalability), alternate ways of building networking stacks in the userspace, design of packet processing stacks, programmable emerging SmartNICs, and introduction to a high-performance Remote Direct Memory Access (RDMA) technology. The second theme of the course will be focused on recent development in the network infrastructure. Students will learn about the architecture of the network inside a large-scale data center of companies like Amazon, Google, and Microsoft, new ways of architecting a computer network (software-defined networking), technologies for improved network programmability (software switches/routers, network virtualization, programmable data plane), and how to utilize these new technologies to build new applications/services.

Aanvullende informatie onderwijsvormen

Lectures (4 hours/week), Paper Reading, Practical Programming Assignment (code and report)

Toetsvorm

Exam (50%), Practical Assignments (50%) -- resits only available for the exam. Students are graded on both the completion of the assignment as well as their understanding of the material (based on the oral discussion and report submitted).

Vereiste voorkennis

Computer Networks, Operating Systems, Computer Organization

Aanbevolen voorkennis

Operating systems (userspace, kernel, processes, memory management), System Architecture (I/O devices, interrupts, CPU caches), Computer Networks (TCP/IP, Ethernet, Packet switching networks), C/C++ programming, Linux build and coding environment (bash, CMake, gdb, gcc, make and friends)

American Film: Cinematic Representations of the "Other"

Vakcode	L_ELBAELK208
Studiepunten	6
Periode	P2
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Geesteswetenschappen
Vakcoördinator	prof. dr. D.M. Oostdijk
Examinator	prof. dr. D.M. Oostdijk
Betrokken Docenten	prof. dr. D.M. Oostdijk
Onderwijsvormen	Werkcollege

Doel vak

Students become acquainted with the study of identity representation in American film.

Inhoud vak

What issues arise when studying the representation of identity (think of race, gender, sexuality) in American cinema? Per meeting, we discuss a particular issue (for instance, stereotyping, the male gaze, character engagement, queer subtext) and apply it to a number of films. In previous years, we've discussed Alien, Dallas Buyers Club, Gentlemen Prefer Blondes, Paris Is Burning, Philadelphia, Psycho, and Vertigo, among others, but the selected films are subject to change.

Aanvullende informatie onderwijsvormen

Seminar meetings, 3 x 2 hours per week. Attendance is compulsory.

Toetsvorm

Exam.

Vereiste voorkennis

In period 1, students must have participated in one of the modules of either (1) the Schoolvakminor English Literature, (2) the minor package American Studies, or (3) the minor package Gender and Diversity. Alternatively, students must have passed the module Literary Theory.

Literatuur

To be announced.

Aanvullende informatie doelgroep

This module is part of three minor packages: (1) Schoolvakminor English Literature; (2) American Studies; and (3) Gender and Diversity.

Overige informatie

The level of English in this module is high.

An Introduction to Economics

Vakcode	E_ME_AIE
Studiepunten	6

Periode	P1
Vakniveau	200
Onderwijstaal	Engels
Faculteit	School of Business and Economics
Vakcoördinator	prof. dr. P.A. Gautier
Examinator	prof. dr. P.A. Gautier
Betrokken Docenten	S. Tyros
Onderwijsvormen	Werkgroep, Hoorcollege

Doel vak

This course will introduce you to the fundamentals and basic tools of economic analysis. It will teach you the perspective of the economist: viewing reality as the result of choices and the trade-offs that these choices reflect (Academic Skills; Knowledge). In terms of Knowledge you will learn the basic theories and models of micro- and macroeconomics. You will also learn the basic analytical tools used in the analysis of economic data (Quantitative Skills). Finally, the course will introduce you to the most important nstitutions of the global economy. The course will also show you how the tools and theories can be applied to real life examples taken from the world economy. (Bridging Theory and Practice).

Inhoud vak

Topics to be discussed are: - Consumers, sellers and Incentives; - Perfect competition, Trade; - Externalities; - Labor market/ human capital/unemployment; - Economics of Information; - Game theory/ Auctions; - Economic Growth; - Business Cycles; - Credit Markets

Aanvullende informatie onderwijsvormen

Lectures Tutorials

Toetsvorm

Written exam (MC) - Individual assessment Assignment(s)

Literatuur

Acemoglu, Daron, David Laibson and John A. List, Newest edition (older editions are also allowed), Economics, Harlow, Essex, Pearson Education Ltd. ISBN 13: 978-1-292-07920-2, incl. access code MYECONLAB.

Applying Economics

Vakcode	E_ME_APEC
Studiepunten	6
Periode	P3
Vakniveau	300
Onderwijstaal	Engels
Faculteit	School of Business and Economics
Vakcoördinator	dr. W. Zant
Examinator	dr. W. Zant
Betrokken Docenten	
Onderwijsvormen	Werkgroep, Hoorcollege

Doel vak

The objective of this course is to develop your capability to independently analyse a policy issue, design a policy response, or evaluate a policy intervention from an economic point of view. Specific learning outcomes upon completion of this course are: • you are able to identify a relevant (economic) policy issue, to motivate the urgency of the issue, and to formulate an appropriate research question; • you are able to locate relevant economic theory in the literature and to apply it correctly in order to analyse the policy issue and to identify the economic rationale of potential or actual policy responses; • you are able to identify, interpret and compare empirical findings from the economic literature to describe the policy issue, and/or the behavioral response of the market and government actors, and/or the impact of these responses; • you have developed a critical attitude to the relevance and shortcomings of empirical data compared to theoretical requirements, and have become aware of limitations in

insights that can be gained from theoretical reasoning alone when addressing real-life issues; • you are able to present your findings clearly to academic expert and non-expert audiences; • you are able to work independently, while incorporating relevant feedback into their work; • you are able to give constructive feedback to peers.

Inhoud vak

In this intensive four-week course, you work in a policy area of your choice (e.g. international financial systems and banking regulation, macro policy, development and growth, environment, urban/transport, health, human capital, competition policy, industrial policy). You write an economic policy-oriented research paper focusing on policy analysis, design and/or evaluation.

Aanvullende informatie onderwijsvormen

One introductory lecture followed by weekly working groups (compulsory attendance).

Toetsvorm

Paper, presentation and working group participation.

Vereiste voorkennis

Minor Economics - Foundations of Microeconomics and Minor Economics - Foundations of Macroeconomics.

Automata and Complexity

Vakcode	X_401049
Studiepunten	6
Periode	P4
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. J. Endrullis
Examinator	dr. J. Endrullis
Betrokken Docenten	dr. J. Endrullis
Onderwijsvormen	Hoorcollege, Werkcollege

Doel vak

This course treats automata & formal languages and computability theory. The student is acquainted with important notions and algorithms regarding formal languages, automata, grammars, compilers, computability and complexity. This course addresses foundational questions in computer science: - What can be computed? What are the limitations to what computers can do? - How much time and memory does solving a problem require? - What is a (programming) language? - How can languages be recognized by computers (automata)? - Which problems can be solved by what kinds of automata? This course conveys the important idea that certain problems cannot be solved by computers. A computer scientist must be able to reason whether a given problem is computable (decidable) or not. Moreover, a computer scientist should be able to reason what language/complexity class a given problem belongs to, and hence what kind of automata/algorithms are needed to tackle the problem.

Inhoud vak

The first part of the course, on automata and languages, deals with the concepts of formal language, grammar, and automaton. Two types of languages are covered: regular and context-free languages. Regular languages in the form of regular expressions are ubiquitous in computer science. They are used in search queries and text manipulation. Context-free languages and grammars (e.g. the Backus–Naur form) are the prevailing standard for describing programming languages. We also discuss parsing algorithms to determine whether a given string is in a context-free language. The automata-theoretic counterparts for regular and context-free languages are finite automata and the more powerful pushdown automata. The students will learn to (a) design finite automata and create regular expressions for a given regular language, (b) apply algorithms to translate between finite automata, right-linear grammars and regular expressions, (c) apply algorithms to make automata deterministic and minimal, (d) design pushdown automata and create context-free grammars for a given context-free language, (e) apply algorithms to translate between pushdown automata and context-free grammars, (f) use pumping lemmas to reason about whether a language is regular or context free, (g) apply algorithms for parsing context-free languages. In the second part of the course, on computability theory, the central question is: what computations can be performed on a computer? To reason about computability, we introduce the mathematical model of Turing machines and discuss the Church-Turing thesis. We discuss examples of undecidable problems: the halting

problem and the Post correspondence problem. It is shown how undecidability of new problems can be shown by reduction from a known undecidable problem. Finally, we discuss a classification of decidable/computable problems into important complexity classes, notably P, NP, and NP-complete problems, together with the corresponding reduction arguments. The students will learn to (h) reason whether a given problem is decidable (computable) or undecidable (not computable), (i) understand the classification of decidable problems in the complexity hierarchy (e.g. P, NP, EXP) of , and (j) reason about the complexity of a problem via the reduction to/from problems with known complexity.

Aanvullende informatie onderwijsvormen

4 hours per week lectures; 4 hours per week exercise classes

Toetsvorm

The homework is mandatory for qualifying for the exam (70% of the homework points to qualify for the exam). In case at least 90% of the homework points is obtained, 0.5 bonus point is awarded for the final grade. At the end of the course there is a final exam. The overall grade is the grade of the final exam plus the possibly 0.5 bonus point obtained for the homework. (The bonus is only added for students that pass the exam with a grade of at least 5.5.) There is no resit opportunity for the homework.

Literatuur

Peter Linz, An Introduction to Formal Languages and Automata, Jones & Bartlett, 4th or 5th edition

Aanvullende informatie doelgroep

3CS

Bachelor Project Computer Science

Vakcode	XB_40001
Studiepunten	15
Periode	Ac. Jaar (september)
Vakniveau	0
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. A. Bhulai
Examinator	
Betrokken Docenten	prof. dr. F.A.H. van Harmelen, dr. A. Bhulai, dr. J. Gordijn, dr. V.N. Stebletsova
Onderwijsvormen	Hoorcollege

Doel vak

After successfully completing the bachelor project you will be able to: - describe a problem from the Computer Science domain, - find and select relevant scientific literature, - formulate a relevant and academically sound research question, - develop a research design, - carry out a research study using the chosen literature, data collection, and data analysis methods, - give a critical reflection on both the scientific and practical contributions, as well as on your research limitations, - report on your research for a scientific audience (both written and in an oral presentation).

Inhoud vak

The bachelor project completes the bachelor study of Computer Science. You should be able to apply the knowledge and proficiency you obtained during the bachelor period in a larger project. In the bachelor project, you will produce an independent piece of work that addresses a topic of choice within the domain of Computer Science. The content of the bachelor project can be different per research group and per student and is established in agreement with the scientific supervisor. You can choose from the offered topics (these can be found on the websites of the research groups or in Canvas) or you can suggest your own topic within the research area. The content may be purely theoretical, as well as practical and contain, for example, programming work. The bachelor project can be seen as an exercise in scientific work. This means that the implementation and the research report of the project must meet scientific standards. Working with relevant literature forms part and parcel of the task, and this should be reflected in the thesis, along with a critical evaluation of the findings.

Aanvullende informatie onderwijsvormen

After an orientation meeting, the student selects a supervisor and a topic. The work, usally carried out on an individual basis, results in a written report (thesis) and an oral presentation.

Toetsvorm

The final grade is based on - the executed work (50%), - the thesis (40%), and - the oral presentation (10%).

Aanvullende informatie doelgroep

3CS

Overige informatie

More detailed information is offered in the Bachelor Project manual. Read it carefully for an overview of the project itinerary. Students should have accrued at least 120 ECTS within the bachelor programme. Students must consult their academic advisor if they have accrued less than 120 ECTS of the bachelor curriculum for approval.

Aanbevolen voorkennis

Students should have accrued at least 120 ECTS within the bachelor programme.

Big Ideas in Computing

Vakcode	X_HP005
Studiepunten	6
Periode	P5
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	drs. E.M. Maassen MSc
Examinator	drs. E.M. Maassen MSc
Betrokken Docenten	drs. E.M. Maassen MSc
Onderwijsvormen	Hoorcollege

Doel vak

Big Ideas in Computing is a course about the fundamental insights of Computer Science, as a science. We'll be talking about the deep insights that are independent of the machines used, or the programming languages and implementations chosen. We'll be looking at the things that will be just as true and relevant a 100 years from now, as they were when they were just conceived of. Upon completion of the course you will be able to reason with these fundamental insights, and have an informed discussion about the implications of computer science on society. Learning goals: - Present a model of computation with a clear definition and sense of how it differs from other models. - Implement a way to rewrite several data structures as other data structures. - Form an opinion on a philosophical topic related to Computer Science and write an essay about it. - Work together in a group to create a larger piece of software with correctly interacting components - Have informed discussions on a broad range of fundamental topics in computer science.

Inhoud vak

Five major topics are covered in this course: - Universality (of Data structures, programming languages and major implementation choices) - Types of Computing (Models of computation and Quantum computing) - Limits of Computing (Algorithmic complexity, Kolmogorov Complexity, undecidability) - Notions of Correctness - Philosophy of Computation (Thinking as computing, Ethics)

Aanvullende informatie onderwijsvormen

There are two weekly meetings that hold the middle between a seminar and a lecture. Students are expected to prepare for each meeting by reading material that we provide on the platform Perusall. Perusall enables interaction between students about the material (reading each other's comments and answering each other's questions), which facilitates in depth preparation of the meetings.

Toetsvorm

There are 5 graded assignments, no exam. Some of the assignments are individual work, and some in collaboration with one or more peers. The assignments range from: writing a philosophical essay, to coding (1

individual assignment, 1 group assignment), to doing a presentation (in pairs). Each of the 5 assignment counts for 19% of the grade. The remaining 5% is determined by the quality of preparations for the meetings (grade is taken from Perusall).

Vereiste voorkennis

We assume basic knowledge of programming in Python, algorithmic complexity (Big O) and linear algebra.

Literatuur

Each topic uses separate resources. It ranges from chapters of popular science books to scientific articles. All material will be provided in the online reading platform that is used.

Aanvullende informatie doelgroep

This course is meant ONLY for students who participate in the Honours programme of the Computer Science department, of any of the majors: Bachelor Computer Science (year 2 or 3) Bachelor Artificial Intelligence (year 2 or 3) Bachelor Information Studies (year 2 or 3)

Biochemistry

Vakcode	AB_1137
Studiepunten	6
Periode	P2
Vakniveau	100
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. ir. Y.J.M. Bollen
Examinator	dr. ir. Y.J.M. Bollen
Betrokken Docenten	S.M. te Welscher MSc, dr. ir. Y.J.M. Bollen, I. Maggio, prof. dr. B. Teusink, E. Jaku, dr. T.C. Messemaker, C.H.C. Zeelenberg, R.K. Blankevoort MSc
Onderwijsvormen	Computerpracticum, Deeltentamen schriftelijk, Practicum, Hoorcollege, Werkgroep

Doel vak

The general aim of this course is to generate a basic, molecular, understanding of essential components, mechanisms, forces and processes that support cellular function, as a basis for later courses in molecular life sciences. After taking this course, the student can: • Identify important biochemical building blocks and how they are assembled into macromolecules. • Describe the forces and interactions that determine the structure and composition of biological macromolecules. • Explain what determines the direction of a biochemical reaction, how enzymes work, how enzymes are regulated and which role membranes have in cells. • Explain how macromolecules function in networks within living cells and how they cooperate in order to execute important life processes, with particular attention for cellular energetics and the concepts, coherence and regulation of metabolic processes in a human cell. • Apply mathematical techniques as learned in secondary school to solve biochemical problems. • Use simple mathematical models of biochemical processes and explain the relevance of the outcome. • Apply various biochemical and biophysical techniques with attention for biological and chemical safety rules. • Setup a biochemical experiment, keep record of the results, analyze them and present them in a written report.

Inhoud vak

During the course, the following topics will be covered: • The concept of Gibbs energy and changes in Gibbs energy during reactions and interactions of molecules. • Biological macromolecules and the building blocks they are composed of, with particular attention for proteins. • The most important roles of proteins, in particular catalysis and its regulation. • The structure of biological membranes and relevant transport processes across them. • The concepts of catabolism and coupled energy transformations. • The quantitative analysis of cellular processes and the required mathematical tools.

Aanvullende informatie onderwijsvormen

Lectures: 32 hours Tutorials: 14 hours Practical: 22 hours

Toetsvorm

The grade for this course is composed out of two parts: one grade for knowledge and understanding of theory tested in a digital exam (67%), and one grade for the practicals, based on a written report (33%). Explanatory

notes: (i) The grade for the practicals is based on the written report, provided that the student has actively participated during the practical training. In the case of an insufficient grade, the report can be corrected one time based on the feedback provided. The grade for a corrected report cannot exceed 6.0. (ii) In order to pass the course, sufficient grades (5.5 or higher) must be obtained for both parts of the course.

Literatuur

Marks' BASIC Medical Biochemistry, A clinical approach 5th edition Michael Lieberman & Alisa Peet Wolters Kluwer USA ISBN-13: 978-1-4963-8772-1 ISBN-10: 1-4963-8772-4

Aanvullende informatie doelgroep

Compulsory course for first-year BSc Biomedical Sciences students.

Overige informatie

Presence and preparation are compulsory for tutorials and practicals. During laboratory practicals, wearing a lab coat is obligatory.

Afwijkende intekenprocedure

You need to register yourself for the course via VUnet, including lectures and (partial) exam(s). The faculty will register you for all remaining teaching methods. Please note that if one of the grades is insufficient, you need to register for the resit exam in order to obtain your new course grade, even if it is the report of the practicals that was insufficient.

Biologische Psychologie (UM)

Vakcode	P_UBIOPSY
Studiepunten	6
Periode	P2
Vakniveau	200
Onderwijstaal	Engels
Faculteit	Fac. der Gedrags- en Bewegingswetensch.
Vakcoördinator	dr. D. van t Ent
Examinator	dr. D. van t Ent
Betrokken Docenten	dr. D. van t Ent
Onderwijsvormen	Hoorcollege

Doel vak

Inzicht verwerven in de structuur en functie van het zenuwstelsel en de rol van het zenuwstelsel in (ab)normaal gedrag.

Inhoud vak

Begrippen uit de biologie aansluitend bij de processen die men in de psychologie bestudeert. Aan de orde komen structuur en organisatie van het centrale en perifere zenuwstelsel, neurotransmissie, psychofarmaca en de biologische mechanismen achter waarnemen, motoriek, emoties en de hogere cognitieve functies (geheugen, spraak, bewustzijn). Tijdens de colleges wordt tevens ingegaan op neurologische stoornissen (Parkinson, Broca's afasie, Alzheimer etc.) en de biologie van gedragstoornissen (slaapstoornissen, psychosen, angstigheid, depressie, verslaving).

Aanvullende informatie onderwijsvormen

Hoorcollege

Toetsvorm

Tentamen

Literatuur

Carlson and Birkett - Physiology of Behavior (12th Ed). Pearson. Verkrijgbaar in de VU boekhandel.

Brain in Trouble

Vakcode	AB_1038
Studiepunten	6
Periode	P2
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. H.K.E. Vervaeke
Examinator	dr. H.K.E. Vervaeke
Betrokken Docenten	prof. dr. T.J. de Vries, dr. H.K.E. Vervaeke, R. Garritsen BA BSc, prof. dr. S. Spijker
Onderwijsvormen	Werkgroep, Computerpracticum, Hoorcollege

Doel vak

The goal of this course is to deepen understanding of the etiology, expression and treatment of (psychiatric) brain disorders, as well as models used in preclinical science. Students will be encouraged to critically analyze the impact of brain disorders on society. Learning outcomes: After completion of this course, the student is able to: 1) Explain the contribution of genetic and environmental factors to complex multifactorial diseases such as mental traits and mental disorders 2) Elaborate on the etiology of addiction, ADHD, obsessive-compulsive disorder, eating disorders, mood disorders and anti-social personality disorder 3) Elaborate on the various treatment options for psychiatric disorders 4) Explain gene-environment interactions and discuss some examples 5) Elaborate on the differential role of the environment in the etiology of traits / disorders according to the ‘differential-susceptibility hypothesis’ 6) Summarise, understand and apply the results of current neurobiological research into behavioural interventions to increase brain health and mental well-being 7) Critically reflect on the impact of mental disorders on society 8) Critically reflect on the boundaries between normal (healthy) and abnormal (ill) behaviour and the implications for society 9) Verbally defend a position on the various topics of this course (class discussions, ACADEMIC SKILL)

Inhoud vak

The focus of this course is on the etiology of mental disorders, such as addiction, ADHD, obsessive-compulsive disorder, eating disorders, mood disorders and anti-social personality disorder, with special attention to the nature-nurture discussion. Various treatments options for these conditions will be discussed, including the use of pharmacological agents, behavioral therapy and deep brain stimulation. Students will be challenged to critically reflect on the boundaries between normality and abnormality and the implications for society. First Theme: addiction and impulsivity What is addiction? Is addiction truly a brain disorder? Do genes play a role in addiction? How does society view illicit drug use and addiction? Are all drugs equally harmful? How to treat addiction? Is ADHD a real mental disorder, or a cultural construct used to bring deviant or socially undesirable behavior under medical surveillance and control? Is it a good idea to treat children who have been diagnosed ADHD, with psychostimulant medications? What is the role of pharmaceutical companies? Do sugar and food additives elicit hyperactive behavior? Are there any advantages in having ADHD? Second Theme: obsessive compulsive disorders, eating disorders and cognitive enhancement Can you treat OCD with Deep Brain Stimulation? Is our Western beauty ideal at the root of eating disorders? Is the individual to blame for being obese? Is it ethical to improve your mental performance by cognitive enhancers? Third Theme: mood & social behaviours Is depression a real brain disorder or an inability of our culture to accept sadness as an integral part of life? Do genes play a role in the etiology of major depressive disorder and bipolar disorder? What is the efficacy of pharmacotherapy and behavioral therapy? What is the role of pharmaceutical companies? Is there a neural basis to antisocial behavior? If biology and circumstance conspire to prime certain individuals toward violence, how much responsibility do people really bear for their actions? Are violent delinquents worth treating? Should brain imaging / genetic profiling be used in legal cases? Can neuroscience assist in determining responsibility? If neural circuitry underlying morality is compromised, is it morally wrong to punish prisoners? Are there positive aspects to psychiatric disorders? Next, the healthy mind will be the focus. What is the current state of neurobiological research into behavioral interventions to increase brain health and mental well-being?

Aanvullende informatie onderwijsvormen

Lectures (30 hours), computer practical (2 hours), homework assignments (6 hours), class discussions (2 hours) Course coordinators are Hylke Vervaeke and Taco de Vries

Toetsvorm

Written exam (combination of MC-questions and open-end questions) (75%) and class discussions/assignments (25%), each at least grade 5.5.

Literatuur

"Foundations Of Behavioral Neuroscience" by N.R. Carlson (Pearson Education (US)), 8th edition. Extra literature on Canvas

Aanvullende informatie doelgroep

Part of minor Brain and Mind Open to students from all educational backgrounds (e.g., exact, social, life and economic sciences) with an interest in the brain and mind.

Overige informatie

Central Academic Skill: Debating and discussing

Afwijkende intekenprocedure

Groups for Class Discussions and Home-work Assignments via Canvas

Aanbevolen voorkennis

The courses 'Cognitive Neuroscience' and 'Nature vs. Nurture' from the minor 'Brain & Mind'

Business Intelligence and Analytics

Vakcode	E_MM_BIA
Studiepunten	6
Periode	P2
Vakniveau	300
Onderwijstaal	Engels
Faculteit	School of Business and Economics
Vakcoördinator	M. Shafeie Zargar
Examinator	M. Shafeie Zargar
Betrokken Docenten	drs. F.E.J.M. Derksen, M. Shafeie Zargar, dr. A.C. Smit, dr. M.G.A. Plomp
Onderwijsvormen	Responsiecollege, Hoorcollege, Werkcollege

Doel vak

Quantitative Skills •Using business intelligence and data mining suites to create insight from data and tackle business problems Knowledge •Defining, describing and recalling the basic concepts, constituent components, principles and theories underlying the use and the deployment of business intelligence & analytics solutions. Bridging Theory and Practice •Choosing, applying, and evaluating business intelligence & analytics concepts, principles and solutions to solve business problems.

Inhoud vak

Dealing with the overabundance of data and the ability to transform data into insights are critical success factors for organizations. This course offers an introduction to the tools and concepts that allow you to unleash the power of data and business intelligence and analytics solutions in order to create competitive advantage. The course primarily has a managerial focus. The students will acquire hands-on experience with well-known BI&A technologies, and learn how to use their features and capabilities in practice. Our partners from the industry and the business consulting sector will be closely involved in the course, sharing their insights and experience during several interventions. Keywords: business intelligence, analytics, data science, data warehousing, data mining, big data, machine learning, data-driven decision making

Aanvullende informatie onderwijsvormen

Lectures Hands-on Workshops *** Note that the analytics workshops may have to be suppressed or adapted to other formats given the evolving COVID-19 situation. ***

Toetsvorm

Final written exam (individual) Weekly computer-based analytics quizzes (individual) Both components are mandatory for passing the course. *** Note that the analytics quizzes may have to be suppressed or adapted to other formats given the evolving COVID-19 situation. ***

Literatuur

Literatuur

This course is article based. Readings & practice material will be announced in the course manual and will be accessible through the course's Canvas page.

Aanbevolen voorkennis

Recommended knowledge Elementary course on (Management) Information Systems (for example: Laudon, K.C. & Laudon, J.P. (2016). Essentials of MIS (12 th edition). Knowledge of the fundamentals of statistics. Course Introduction to Digital Innovation (SBE, Period 3.1). BK: 2.1 Business Information Technology IBA: 2.1 Business Information Systems

Business Model Assessment

Vakcode	E_MB_BMA
Studiepunten	6
Periode	P2
Vakniveau	200
Onderwijstaal	Engels
Faculteit	School of Business and Economics
Vakcoördinator	dr. G. Tumer-Alkan
Examinator	dr. G. Tumer-Alkan
Betrokken Docenten	dr. G. Tumer-Alkan, dr. V. Duplat
Onderwijsvormen	Hoorcollege, Werkgroep

Doel vak

A basic understanding about corporate finance is required to assess the efficiency and efficacy of a company’s business model. Would it be possible for companies like Google, Microsoft and Uber to develop (new) strategies and business models without insight in the present and future financial viability of the company? Corporate finance pertains to the sources of funding, the capital structure of corporations, and the actions that managers take to increase the value of the firm, as well as the tools and analysis used to allocate financial resources. The course Business Model Assessment provides an introduction in corporate finance for students in the program. This course has three main learning objectives: 1. Gain knowledge of basic concepts and theories pertaining to firm behaviors in the area of corporate finance in order to assess the business (Bridging theory and practics - knowledge) 2. Provide standard answers to hypothetical cases, e.g. through solving exercises from the textbook (Academic and research skills) 3. Apply obtained knowledge in corporate finance to real life cases,e.g. interpret financial information, formulate them into standard framework, and provide comments and remarks for corporate decision makers (Bridge theory and practice - application) After participating in this course, you should: • Understand corporate finance concepts, including their strengths and limitations in explaining the realities • Understand unique features of these concepts and their interrelationship, and the relevant corporate finance theories for firm behaviors • Have quantitative skills to apply these concepts, e.g. solve exercises in the textbook • Be able to choose between various concepts and apply them in real life cases, e.g. provide advice and remarks for corporate decision makers

Inhoud vak

The course will start with an introduction of business assessment approaches and basic concepts. We will start with an introduction to corporations, and proceed with financial statement analysis, financial decision making, investment decision rules, capital budgeting, and raising equity capital, etc. The focus is on applying concepts and theories to real-life situations during lectures, and providing students with feedback on their exercises and cases in the tutorials. We will explain the basic concepts and theories in the lectures, and apply to relevant exercises and cases in the tutorials. Students need to solve one case in groups of 5 or 6 members, and present their reports in the tutorials.

Aanvullende informatie onderwijsvormen

Lectures, tutorials

Toetsvorm

Your final course grade will be based on your written exam. More details are available in the course manual.

Literatuur

The chapters, case materials and exercises will be posted on the blackboard. We use the textbook “Corporate

Finance” by Jonathan Berk and Peter DeMarzo, 3rd edition. The case materials and exercises will be posted on Canvas.

Business Model Innovation

Vakcode	E_MB_BMI
Studiepunten	6
Periode	P2
Vakniveau	200
Onderwijstaal	Engels
Faculteit	School of Business and Economics
Vakcoördinator	dr. J. Du
Examinator	dr. J. Du
Betrokken Docenten	dr. J. Du
Onderwijsvormen	Werkgroep, Hoorcollege

Doel vak

The past few years have witnessed the emergence and success of several pioneering new types of companies, such as Uber, Airbnb, facebook, Tesla, and Amazon. While many long-established, resource-abundant and technologically-advanced firms gradually lose profit margins in their traditional markets, these new types of companies have achieved extraordinary performance. The main objective of the course 'Business Model Innovation' (BMI) is to prepare students with fundamental knowledge about business models and business model innovation. This course is built on the combination of different streams of literature/ theories on business strategy, innovation management, and entrepreneurship. Students are expected to be able to understand and apply the related theories and frameworks and to write a business plan. Being part of the whole Minor, this course also prepares students for the following courses "Business Model Assessment", in which they will learn how to assess their business models, and "Business Professionals", in which particular interests and skills in a specific field are developed and deepened. In particular, after following the course students: • Are able to critically reflect on business model innovation theories and tools • Are able to apply theoretical perspectives from the different streams of literature to explain the observed business model innovation and their effects on corporate strategies and performance • Are able to develop team skills, creative skills, develop cases, and communicate a business plan

Inhoud vak

The course will start with an introduction of business models and corporate innovation strategies. It will then focus on two main paths: Business model innovation based on internal resources and capabilities, as well as business model innovation leveraging external opportunities. A wide range of topics such as business idea generation, business opportunity identification, start-up firms creation, as well as corporate venturing will be discussed in each lecture, respectively. During the lecture, the first part is related to the theories and process of business model innovation. The second part is concerned with the application of tools and models necessary to write a business plan for the business ideas of student groups.

Aanvullende informatie onderwijsvormen

Lectures and seminars. During the lectures, the different streams of literature will be explained and illustrated with real-life examples. Throughout the seminars, the theory is applied to student business plans and case analysis. Students will have the opportunity to learn from and interact with leading business practitioners, discuss their progress through peer-review and with the support of experienced business developers.

Toetsvorm

Business plan (group), and essay (individual)

Vereiste voorkennis

There is no specific entry requirements for this course, but interests in business administration and management is definitely a plus

Literatuur

- Afuah, Allan. Business Model Innovation: Concepts, Analysis, and Cases. Routledge, 2014. - Selection of academic papers and news articles

Business Professionals

Vakcode	E_MB_BPROF
Studiepunten	6
Periode	P1
Vakniveau	300
Onderwijstaal	Engels
Faculteit	School of Business and Economics
Vakcoördinator	drs. A.C. Guldemond
Examinator	drs. A.C. Guldemond
Betrokken Docenten	drs. A.C. Guldemond
Onderwijsvormen	Werkgroep, Instructiecollege, Hoorcollege

Doel vak

In the course Business Professionals, the focus is on the human element in the business modeling paradigm. The overall objective is gain knowledge about business models and management from the perspective of the professional. In particular, when students complete this course, they will: • Understand the profiles of key business professional roles such as chief executive officers, marketing, finance, human resources, operations and technology executives • Be able to apply ideas about professionals for a reflection on their own background, personal role and career development as a (future) business professional • Be able to formulate and analyze business modelling problems from the perspective of the business professional • Be able to verbally and in written report on assignments

Inhoud vak

During the course students will explore cases and theories about the contribution of professionals in management and organization. Guiding questions are: Who are the people behind the key strategic decisions for the business model of an established firm or a new business venture? What functions, behaviors and capabilities are required for successful collaboration on the design and implementation of new business models? The content of the course entails an even-handed appreciation for theory and practice.

Aanvullende informatie onderwijsvormen

Lectures and tutorials. In the first part of the course, lectures start with an introduction to (management) professionals; their task, responsibilities, and activities. Throughout the tutorials, students have the opportunity to apply the theoretical frameworks introduced in the lectures. To this end, the tutorials combine assignments, case studies and round-table discussions. Students are expected to actively contribute to the group’s experience and learning.

Toetsvorm

Written exam, assignments, presentation

Literatuur

A selection of articles, cases and support materials Book: Hitt, M. A., Miller, C. C., & Colella, A. (2014). Organizational behavior a strategic approach. John Wiley & Sons

Business Project

Vakcode	E_MB_BPROJ
Studiepunten	6
Periode	P3
Vakniveau	300
Onderwijstaal	Engels
Faculteit	School of Business and Economics
Vakcoördinator	dr. L. Glasbeek
Examinator	dr. L. Glasbeek
Betrokken Docenten	prof. dr. B.V. Tjemkes, dr. L. Glasbeek
Onderwijsvormen	Werkgroep, Hoorcollege

Doel vak

Upon successful completion of the course, students have developed themselves in the following four areas: (1) Academic skills - They can examine, understand, and integrate management challenges and issues from different perspectives ("analysis"). - They can recognize fundamental structures and to leave out irrelevant information ("abstraction") - They can put forward well-founded, substantiated points of view, both in spoken and written format ("argumentation"). (2) Research Skills - They can design and execute a management consultant research project and develop meaningful interpretations and presentations of their findings. (3) Bridging theory and practice - They can apply theoretical knowledge about relevant management theories in the context of decision-makers and formulate meaningful recommendations. (4) Self-awareness - They can critically reflect on their actions, responsibilities, and personal development.

Inhoud vak

The main objective of the course is to familiarize students with some of the most significant challenges of conducting a management consultancy project. The course encourages a critical appraisal of various theoretical perspectives in the business administration domain and empirically investigating an applied research question. By designing and executing a management consultancy project, students become acquainted with the challenges that researchers face when considering management at large. Lastly, and importantly, students will learn to communicate their views succinctly, both verbally and through a written research report.

Aanvullende informatie onderwijsvormen

Lectures and tutorials.

Toetsvorm

Management Consultancy Report – Team assessment. Professional reflection – Individual assessment.

Vereiste voorkennis

University Minor Business Administration Courses: Foundations of Business Administration, Business Professional, Business Model Innovation, and Business Model Assessment.

Literatuur

Selection of articles.

Calculus

Vakcode	X_400617
Studiepunten	6
Periode	P1+2
Vakniveau	100
Onderwijstaal	Nederlands
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. C.M. Quant
Examinator	dr. C.M. Quant
Betrokken Docenten	drs. J.A. Los, dr. C.M. Quant
Onderwijsvormen	Hoorcollege, Deeltentamen schriftelijk, Werkcollege

Doel vak

In deze cursus leert de student: • vergelijkingen en ongelijkheden op te lossen, • te werken met speciale functies (waaronder goniometrische functies en hun inversen, exponentiële functies en logaritmen), • berekeningen en vergelijkingen op te lossen met complexe getallen, • limieten te bepalen, • technieken voor differentiëren en toepassingen (waaronder impliciet differentiëren, Taylorpolyomen, berekenen van extremen), • verschillende integratietechnieken (waaronder substitutie, partiële integratie en breukspitsen), • verschillende typen differentiaalvergelijkingen op te lossen, • werken met reeksen. In het bijzonder het berekenen van Taylorreeksen, de meetkundige reeks, machtreeksen, termsgewijze differentiatie en integratie van machtreeksen en vinden van de convergentiestraal van een machtreeks met behulp van de ratio test.

Inhoud vak

Deze cursus behandelt reële functies van één variabele, waarbij we zonder rekenmachine werken. Aan de orde komt: • Oplossen van vergelijkingen en ongelijkheden. • Werken met speciale functies en met inversen van functies. In het bijzonder behandelen we goniometrische functies en hun inversen (arcsinus, arccosinus en

arctangens), exponentiële functies en logaritmen. • Berekenen van limieten (ook met behulp van l'Hôpital). • Differentiëren van functies en toepassingen: definitie met behulp van een limiet, rekenregels, afgeleiden van standaardfuncties, raaklijnen en normalen, Taylorpolynomen, extreme waarden en buigpunten. • Integreren van functies: primitieven van standaardfuncties, integratietechnieken zoals substitutie, partiële integratie en breuksplitsen. • Oplossen van verschillende typen differentiaalvergelijkingen. In het bijzonder eerste orde differentiaalvergelijkingen (scheiden van variabelen en integrerende factor) en lineaire tweede orde differentiaalvergelijkingen met constante coëfficiënten (ook inhomogeen). Het college bevat enkele toepassingen van differentiaalvergelijkingen op fysisch, biologisch en chemisch gebied. Complexe getallen worden geïntroduceerd. We leren optellen, aftrekken, delen, vermenigvuldigen en machtsverheffen met complexe getallen, zowel in rechthoekige coördinaten als in poolcoördinaten. Bij dit laatste gebruiken we de modulus en argument notatie en complexe e-macht. Eenvoudige complexe vergelijkingen worden opgelost. Ook leert de student werken met reeksen. In het bijzonder gaat het om het berekenen van Taylorreeksen, werken met de meetkundige reeks, werken met machtreeksen, waaronder termsgewijze differentiatie en integratie van machtreeksen en vinden van de convergentiestraal van een machtreeks met behulp van de ratio test.

Aanvullende informatie onderwijsvormen

4 uur hoorcollege per week, 2 uur werkcollege per week. Het is verplicht in totaal minstens 10 van de 14 werkcolleges aanwezig te zijn.

Toetsvorm

Twee deeltentamens (elk 40%) en wekelijkse digitale toetsen (20%). De deeltentamens kunnen niet apart herkanst worden. Indien de student de cursus niet via de deeltentamens haalt, moet een hertentamen over de volledige stof gedaan worden. In dat geval telt het hertentamen voor 80% en de wekelijkse digitale toetsen voor 20%. De precieze regeling wordt in de studiehandleiding beschreven.

Literatuur

Adams, Robert A and Essex, Christopher, Calculus: a complete course, 9th Edition, Pearson, 2018.

Aanvullende informatie doelgroep

1SBI, 1MNW, 1FAR, Minor Bioinformatics and Systems Biology.

Overige informatie

Dit vak maakt deel uit van de Minor Bioinformatics and Systems Biology. Bij dit vak is deelname aan de werkcolleges verplicht (de exacte regeling wordt bekend gemaakt in de studiehandleiding).

Calculus 1

Vakcode	X_400635
Studiepunten	6
Periode	P1
Vakniveau	100
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. O. Fabert
Examinator	dr. O. Fabert
Betrokken Docenten	dr. O. Fabert
Onderwijsvormen	Deeltentamen schriftelijk, Hoorcollege, Werkcollege

Doel vak

At the end of this course the student is able to a) calculate limits, using several methods like l'Hopitals rule or the squeeze theorem b) calculate derivatives and to find local extreme values c) calculate integrals, using several methods like the substitution method, integration by parts, partial fraction expansion d) verify if a function is continuous, differentiable, Riemann-integrable e) calculate and apply a Taylor polynomial f) formulate and apply several important theorems for continuous and/or differentiable functions, like the Intermediate Value Theorem, the Mean Value Theorem and the Fundamental Theorem of Calculus

Inhoud vak

Real functions of one variable. Topics that will be treated are: 1) Preliminaries, Real functions, Trigonometric

functions 2) Limits, Continuity, Intermediate Value Theorem 3) Transcendental Functions, Inverse Functions 4) Differentiation, Chain Rule, Mean Value Theorem 5) Applications of Differentiation, Extreme Values, l'Hôpital's Rule, Taylor Polynomial 6) Integration, Fundamental Theorem of Calculus, Improper Integrals

Aanvullende informatie onderwijsvormen

Lectures (3 x 2 hours per week) and seminars (2 x 2 hours per week). Attendance for at least 10 out of a total of 14 seminars is mandatory.

Toetsvorm

There is a midterm exam and a final exam. The final grade (G) for Calculus 1 is a weighted average of the midterm exam (M) and final exam (F): G=(2M+3F)/5. There is one retake which covers all topics for the midterm exam and the final exam. Midterm exam or final exam cannot be retaken separately! More details can be found in the manual on Canvas.

Literatuur

Adams en Essex, Calculus: A Complete Course, 9th edition, Pearson 2018, ISBN-10: 0134154363 • ISBN-13: 9780134154367.

Aanvullende informatie doelgroep

1 BA

Overige informatie

Attendance for at least 10 out of a total of 14 seminars is mandatory!

Choices, Inequality and Welfare

Vakcode	E_ME_CIW
Studiepunten	6
Periode	P2
Vakniveau	300
Onderwijstaal	Engels
Faculteit	School of Business and Economics
Vakcoördinator	dr. S. Hochguertel
Examinator	dr. S. Hochguertel
Betrokken Docenten	dr. M. Mastrogiacomo, dr. S. Hochguertel, R.E.K. Prudon
Onderwijsvormen	Hoorcollege, Werkgroep

Doel vak

Choices, inequalities and welfare pursues a clear microeconomic policy approach. The objective of this course is to identify, justify, analyze and evaluate policy options to various current economic problems, including issues in the fields of poverty and inequality, trade, climate and environment, labor markets and social insurance, as well as competition policy for and regulation of product markets. Using problem sets along with work on empirical economic data will increase and deepen understanding and help broach a large number of applied policy fields. We pursue two types of learning outcomes: ACADEMIC AND RESEARCH SKILLS After successfully completing the course Choices, Inequality and Welfare, you are able: - to formulate the economic rationale for policy intervention in various current economic problems; - to develop policy options from economic theories; - to apply tools of theoretical and empirical economic modeling; - to interpret economic data. BRIDGING THEORY AND PRACTICE After successfully completing the course Choices, Inequality and Welfare, you are able: - to discuss the role of economic policy in the context of both market failures and government objectives to adjust market outcomes; - to evaluate existing and potential policy options, both in theory and in practice; - to show a critical attitude to existing theoretical and empirical policy analyses of current economic problems.

Inhoud vak

This course is geared at understanding the role of government policy from a predominantly microeconomic perspective. Not only will individual actors make choices that influence their own welfare, but government may pursue maximization of welfare for society as a whole. This course discusses the role of economic policy in the context of both market failures and government objectives to adjust market outcomes, including distributional aspects (inequality). Microeconomic policy is on top of the agenda when it comes to keeping individual countries on

the path to stability and growth. Microeconomic structural reforms (say, in labor and product markets, social security and welfare systems) are often seen as long-run policy measures, geared at structural and sustainable solutions, and are complementary to short-term macroeconomic stabilization policies. Current structural economic problems arising in the following fields are prime candidates to be discussed: • taking into account the trade-off between efficiency and equity when formulating policy goals in an interconnected world; • measuring inequality of incomes and the role of distributional policy; • development and trade: analysis of living standards and poverty, provision of legal and political frameworks, trade protection, WTO; • environment: externalities from pollution, regulation and tax solutions; public goods and free rider behavior; climate policy challenges and trade effects; • labor market allocation; labor supply responses to the tax and transfer system; • social insurance and asymmetric information: disability insurance, moral hazard, welfare payments; • competition policy and regulation: imperfect competition, market power, cartels, price-discrimination, regulation and de-regulation. During the course, both theoretical and empirical economic work in policy context is discussed.

Aanvullende informatie onderwijsvormen

Lectures Tutorials

Toetsvorm

Course grade is average of problem sets (30%) and written examination (70%), with written exam grade of at least 5.0.

Vereiste voorkennis

This course is on level 300 (advanced). We require basic knowledge of mathematics (differential calculus; high school level) and statistics, as provided in the academic core of most academic BSc programs at Vrije Universiteit Amsterdam or equivalent.

Literatuur

Main text: to be specified; Various academic papers and ancillary textbook chapters, to be announced on Canvas.

Aanvullende informatie doelgroep

Third-year bachelor students of any major (except Economics and Business Economics; and Econometrics).

Overige informatie

This course replaces the previous course "Microeconomic Policy". It is an integral part of the University Minor Economics; participants gain strongly from attending the entire minor program. This course prepares for Application in Economic Policy, and has intersections with the course The Economics of Crises.

Aanbevolen voorkennis

The course builds on previous courses in the Minor Economics program, in particular, An Introduction to Economics and Economic Challenges. Familiarity with contents of those courses is assumed. Familiarity includes a working knowledge of how to apply economic models in context and how to select and use appropriate graphical tools of analysis. Understanding Macroeconomics is useful.

Climate Change Law

Vakcode	R_TL-TP
Studiepunten	6
Periode	P2
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Rechtsgeleerdheid
Vakcoördinator	C. Kaupa
Examinator	C. Kaupa
Betrokken Docenten	C. Kaupa, dr. D. Rossati LLM
Onderwijsvormen	Hoorcollege

Doel vak

The course analyzes climate change as an evolving, transnational legal phenomenon. Students will learn to work

across different legal fields (ranging from international and human rights law to private and economic law) and different jurisdictions (including international, European, national and local regulation), and to handle legal questions in the context of complex and shifting economic, political, social and ethical debates. Students will be encouraged to participate in the course of the lectures, with the goal of developing the sort of critical and analytical skills conducive to the practice of transnational law, and to understanding transnational global developments. The course approach matches the faculty's "Law in Action" profile. Eindtermen: 1-5, 7-14, 16, 18-22. Zie voor de eindtermen het Onderwijs- en Examenreglement Bachelor Rechtsgeleerdheid.

Inhoud vak

Climate change is one of the most pressing issues the world faces in the 21st century. It is also a particularly complex and interesting problem from a legal perspective: this is because climate change affects multiple jurisdictions (from the international to the local level), numerous areas of law (ranging from international to private law) and multiple actors (ranging from governments and international organizations to multinational businesses, NGOs and private citizens). Moreover, complex scientific, economic, political, social and ethical questions feed into the legal processes. Analyzing the interaction of different legal fields: Greenhouse gases originate from a broad range of activities, including energy production, industry and transport to agriculture. These are regulated in, or otherwhise affected by, numerous fields of law, such as international law, European and national economic law, private law, environmental law, international trade and investment law and human rights law. Tackling climate change therefore requires understanding how these various legal fields interact. Analyzing how different jurisdictions interact: Climate change is a transnational phenomenon, having local causes, but creating global effects: consequently, the problem must be addressed at the same time at a global scale, by regional organizations (such as the EU), at the national and at the regional level (e.g. cities). The course will look at how these different jurisdictions interact. Understanding the role of different legal actors: Climate change is not only a concern for national governments and international organizations. The European Union, as a regional organization, has long been an important actor in this field; moreover, non-state actors play an important role as well: multinational businesses, NGOs and private citizens aim to influence the regulatory process, most notably by bringing lawsuits. The course will analyze the activities of these different actors. Understanding the context of climate change law: Climate change has complex scientific, economic, political, social and ethical dimensions: for example, given that the emission of greenhouse gases is related to many different business sectors, a transition towards a low-carbon society will likely transform the existing economy in significant ways. This will inevitably create „losers“ along the way (e.g. coal and oil companies), who may aim to slow down the transition, thereby posing difficult economic and political questions. Or, to give another example, as greenhouse gas emissions are related to consumption, they are mainly attributable to the wealthy parts of the global population; however, climate change disproportionately affects poor populations in developing countries, and therefore raises complex ethical issues. In this course, we will study how scientific, economic, political, social and ethical questions feed into the legal process. The course will cover: Part 1: the science, economics and politics of climate change; Part 2: Climate change as a global issue; the international climate change regime (e.g. Paris Agreement), international law, human rights law and international trade and investment law; Part 3: European and national legislation (e.g. Emissions Trading System) Part 4: Lawyering for change (e.g. lawsuits against governments and businesses in the US and in Europe)

Aanvullende informatie onderwijsvormen

Lectures, in-classroom research tasks, guest lectures, home assignments, group research project

Toetsvorm

Small written and oral assignments throughout the course and a final written assignment.

Literatuur

The literature will be announced on Canvas.

Aanvullende informatie doelgroep

Apart from regular students, the course is also available for: Students from other universities/faculties Exchange students Contractor (students who pay for one course)

Overige informatie

The following course objectives are only available in Dutch: Eindtermen bachelor Rechtsgeleerdheid De afgestudeerde bachelor beschikt over een fundamenteel academisch werk- en denkniveau; -heeft kennis van en inzicht in de kernleerstukken van de hoofdonderdelen van het geldende recht (in het bijzonder het Nederlandse privaatrecht, staatsrecht, bestuursrecht, strafrecht en internationaal en Europees recht), alsmede de systematiek daarvan, met inbegrip van recente ontwikkelingen -heeft kennis van en inzicht in het internationale en het Europese recht in hun verhouding tot het nationale recht -heeft elementaire kennis van Engelse juridische terminologie -beseft dat het recht zich ontwikkelt en manifesteert in een maatschappelijke context -heeft kennis van de grondslagen van het (Nederlandse) recht, rechtshistorische en rechtsfilosofische aspecten en heeft besef van de

eigen aard van de rechtsbeoefening De afgestudeerde bachelor beschikt over de volgende (juridische) vaardigheden: Analytische vaardigheden -lezen, begrijpen en analyseren van juridische, rechtswetenschappelijke en rechtstheoretische teksten en betogen, waaronder jurisprudentie en wetgeving -kritisch reflecteren op regelgeving, rechtspraak en literatuur, onder meer vanuit rechtshistorisch, rechtsvergelijkend en rechtsfilosofisch perspectief; is in staat om te reflecteren op de grenzen van het vakgebied -reflecteren op de eigen maatschappelijke verantwoordelijkheid in de maatschappelijke context waarin het recht functioneert -is in staat om juridische argumentatiestructuren te analyseren en op te zetten Probleemoplossende vaardigheden -selecteren van juridisch relevante feiten uit een feitencomplex -selecteren van rechtsregels die bijdragen aan het oplossen van een juridische casus -oplossen van juridische casus, waaronder begrepen hanteren van een systematische aanpak bij het toepassen van rechtsregels op concrete gevallen Communicatieve vaardigheden -een gefundeerde en beargumenteerde positie innemen in een maatschappelijk, juridisch debat Informatievaardigheden -op een efficiënte manier juridische bronnen raadplegen en informatie verzamelen uit juridische (digitale) bibliotheken en databestanden, en de waarde, relevantie en kwaliteit van de informatie beoordelen -op efficiënte wijze relevante ontwikkelingen bijhouden en kennis actualiseren

Cognitive Neuroscience

Vakcode	AB_1056
Studiepunten	6
Periode	P1
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. C.P.J. de Kock
Examinator	dr. M.P. van den Heuvel
Betrokken Docenten	dr. C.P.J. de Kock, dr. S. van der Sluis, dr. P. Rao MSc, prof. dr. S. Spijker
Onderwijsvormen	Werkgroep, Hoorcollege, Computerpracticum, Practicum

Doel vak

Introduction to the field of cognitive neuroscience: understanding the biological mechanisms underlying cognitive processes such as learning and memory, discussing recent developments in the field with leading scientists, and acquiring knowledge on how the brain, and its different cell types, systems, and function.

Inhoud vak

In the first course of this Minor, you will learn the basics of cognitive neuroscience through a series of introductory lectures on brain function and (dysfunctional) cognitive behavior. More specifically, we will teach you the structure and function of the major building blocks of the brain, ranging from single cells to neuronal networks, and from emotion to motor control. We combine workshops and keynote lectures, delivered by renowned neuroscientists, to discuss recent advances in the field of learning and memory, brain plasticity, and brain disease (e.g., developmental disorders, Angelman syndrome, PTSD). Finally, you will learn about frontier brain imaging methods (e.g. MRI) and experience various technical approaches to measure the brain (e.g., histology) in hands-on practicals.

Aanvullende informatie onderwijsvormen

Lectures 25 hours 44% 2.6 ECTS Workshops 16 hours 28% 1.7 ECTS Practicals 6 hours 11% 0.7 ECTS Keynote lectures 8 hours 14% 0.8 ECTS Quiz 2 hours 3% 0.2 ECTS Total 57 hours 100% 6.0 ECTS

Toetsvorm

Written exam & assignments

Vereiste voorkennis

No special requirements.

Literatuur

Recent literature, to be announced at the start of the course. Foundations of Behavioral Neuroscience Carlson, Neil R. (9th edition) Exam material: CH2, CH3, CH5, CH6 (pg. 136 - 146), CH7 & CH12

Aanvullende informatie doelgroep

Open to students from all educational backgrounds (e.g., exact, social, life and economic sciences) with an interest in the brain and mind.

Overige informatie

Coordinators: Christiaan de Kock and Martijn van den Heuvel. No special requirements to be met. Part of minor Brain and Mind. This minor course requires a minimum of 25 participants to take place.

Community-based Health Interventions

Vakcode	AB_1110
Studiepunten	6
Periode	P3
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. N. Blignaut-van Westrhenen
Examinator	dr. N. Blignaut-van Westrhenen
Betrokken Docenten	dr. N. Blignaut-van Westrhenen
Onderwijsvormen	Werkgroep, Hoorcollege

Doel vak

- To describe and explain the current status, history and theoretical underpinning of CbHIs - To describe and evaluate the different aspects of CbHIs (including design, implementation, monitoring and evaluation of CBHI). - Identify organizational conditions for implementing CbHI (like organizational learning and change, and attention for knowledge transfer and sustainability). - Analyse strengths and opportunities of CbHIs, leading to a well-grounded advice for optimization. - Discuss and analyse case studies of CbHIs in their context in a participatory way that is ethically sound. - Describe and explain knowledge and understanding through verbal as well as written communication.

Inhoud vak

Numerous interventions are developed and implemented in the area of health care and prevention. Although there is often much attention for national or even international scale interventions, community-based health interventions (CbHIs) are a rapidly upcoming phenomenon. The underlying transition of perceiving health as an individual attribute to health as a result of complex social and local aspects is supporting the importance of CbHIs. CbHIs are an innovative approach to severe and complex problems. In CbHIs, health is perceived as the result of interaction between individual and environmental aspects. Therefore, implementers of CbHIs take an interdisciplinary approach to public health issues. For instance, (self) management of diabetes, sexual health, mental health, and obesity are addressed by CbHI, but also community problems like loneliness of elderly or limited access todrinking water can be targeted. CbHIs are flexible and participatory in nature. As a result, they are easier to adapt to specific situations and are often designed in collaboration with the target group. This course focuses on why CbHIs are essential for solving complex health issues and the types of interventions involved. We will take you through the history of CbHIs and the theoretical foundations of this strategy. In addition, we will give insights into aspects of design, implementation, monitoring and evaluation of CbHIs, taking into account appropriate attitudes, skills and knowledge to influence public health in a community setting. The ethical issues involved in community work are very important and issues such as stakeholder participation, sustainability and scaling-up of the intervention and its effects are discussed. Furthermore, the importance of learning from and adapting to emerging issues is discussed in relation to implementing CbHIs. We will explore the importance of learning capacity of the organisations that implement CbHIs, and their role as spiders in a web of multiple stakeholders that are involved with different perspectives, objectives and goals.

Aanvullende informatie onderwijsvormen

Lectures (18 hours), Self-study (65 hours), Work groups (12 hours), Field visits (8 hours), Assignment (65 hours)

Toetsvorm

Written exam with open questions (60%), group assignment of written report (30%), oral presentation in the form of a pitch and discussion (10%). All parts need to be passed.

Literatuur

Book: Community Based Health Interventions: Principles and Application by Sally Guttmacher, Patricia J. Kelly,

Yumary Ruiz-Janecko and articles on Canvas

Aanvullende informatie doelgroep

Bachelor students from all fields of study are welcome to participate.

Overige informatie

Part of the minor Global Health. This minor course requires a minimum of 20 participants to take place.

Aanbevolen voorkennis

We recommend that students have been enrolled in the courses Future challenges in global health and Drivers of change in global health.

Comparative Political Research

Vakcode	S_CPR
Studiepunten	6
Periode	P1
Vakniveau	200
Onderwijstaal	Engels
Faculteit	Faculteit der Sociale Wetenschappen
Vakcoördinator	dr. L. Aaldering
Examinator	dr. L. Aaldering
Betrokken Docenten	dr. L. Aaldering
Onderwijsvormen	Werkgroep, Hoorcollege

Doel vak

This course has the following learning objectives: • Providing students with knowledge about some central debates within comparative politics (focusing on political representation, electoral behavior, political campaigns, political participation, political leadership and political communication). • Training students to think critically about key methodological issues such as conceptualization, operationalization, case-selection, reliability, validity and causality. • Understand the features and trade-offs of applications of different quantitative research methods, such as survey research, experimentation, content analysis and the comparative method. • Teaching students how to apply their methodological knowledge about comparative political research methods to develop a methodological sound and feasible research design. The design is based on methodological choices on key methodological issues such as internal and external validity, reliability, operationalization and case-selection. • Training students in applying quantitative research methods to relevant research questions in the field of political science, in analyzing quantitative data and in reporting research results.

Inhoud vak

In this course, students will learn about some of the core debates within comparative politics (focusing on political behavior) and about different approaches to doing comparative political research. The course will help students to gain the basic knowledge and skills necessary for performing comparative research and setting up a research design.

Aanvullende informatie onderwijsvormen

Lectures and seminars (active learning groups). Seminar attendance is mandatory: students must attend at least 75% of the seminar sessions of a course.

Toetsvorm

Quizzes and Written assignment(s) Seminar participation

Literatuur

To be announced in the syllabus

Aanvullende informatie doelgroep

2nd year bachelor students in Political Science. Minor Students Political Science Also open as an elective course.

for VU-students and Exchange Students.

Overige informatie

Due to Corona, the content and assignments in this course may be altered slightly when given online instead of offline.

Compiler Construction

Vakcode	XB_0003
Studiepunten	6
Periode	P3
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	prof. dr. ir. H.J. Bos
Examinator	dr. C. Giuffrida
Betrokken Docenten	prof. dr. ir. H.J. Bos, dr. C. Giuffrida
Onderwijsvormen	Hoorcollege, Practicum, Werkcollege

Doel vak

Upon completion of this course, students will: - have knowledge of grammars and compiler frontend principles, such as lexing, (topdown and bottom-up) parsing, abstract syntax trees, semantic analysis, and intermediate representation (IR) generation - have a basic understanding of the compiler design and implementation principles adopted by mainstream compiler frameworks such as LLVM - have knowledge of compiler middle-end performance principles such as IR-level optimizations and experience implementing them - have knowledge of compiler middle-end security principles such as IR-level security hardening and experience implementing them - have knowledge of compiler backend performance principles such as machine-level optimizations - have knowledge of compiler backend security principles such as machine-level security hardening

Inhoud vak

This course gives an introduction to the internals of modern compilers with a unique twist: the emphasis is not just on translating a source program into an executable binary, or traditional optimization passes, but also on software hardening techniques to enhance the target program’s security. As a result, the student learns about all fundamental aspects of compilers, but also the performance and security implications of the code it generates. To address these concerns, students learn compiler-based techniques that improve both the performance and the security. The course allows students to gather practical, hands-on experience on building compiler components with weekly assignments. The course focuses on the design of the major components of a modern compiler pipeline: frontend (focus on lexing and parsing), intermediate representation or IR (focus on optimizations, transformations, and hardening), and backend (focus on code generation). In both the lectures and the assignments, we emphasize what compiler builders encounter in practice, rather than the details of all manners of parsing algorithms. Specifically, the assignments focus on building a compiler for a C-like language using the LLVM compiler framework, analyzing the code so that we can optimize it, and adding additional checks to eliminate common vulnerabilities that are common to C-like languages. All the assignments build on top of a given framework and require localized extensions in Python and/or C++ to implement language features, optimizations, transformations/instrumentations, and code generation features. Note: this is a very intensive, hands-on course. It is important to be able to start immediately. For this, you need access to a computer with the VirtualBox x86 virtualization environment installed.

Aanvullende informatie onderwijsvormen

Lectures, Practical.

Toetsvorm

The final grade is the weighted average of the 3 assignments. There is also a bonus assignment (of max 1 point). There is no resit opportunity for the assignments.

Aanvullende informatie doelgroep

3CS

Aanbevolen voorkennis

Basic knowledge of Python and C/C++ is strongly recommended.

Computational Thinking for Coders

Vakcode	XB_0046
Studiepunten	3
Periode	P1
Vakniveau	100
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. ing. T. Kielmann
Examinator	dr. ing. T. Kielmann
Betrokken Docenten	dr. ing. T. Kielmann, dr. mr. M. Milo MSc
Onderwijsvormen	Hoorcollege, Werkgroep

Doel vak

After completing this course, students will be able to: - approach a problem in a systematic manner, - create and express a solution such that it can be carried out by a computer, - understand and use elementary algorithms and data structures.

Inhoud vak

The course teaches the basic concepts and skills for solving problems with computers: 1. Algorithmic thinking 2. Systematic problem solving using decomposition, abstraction, and using solution patterns 3. Avoiding program errors by defensive programming, testing, and debugging 4. Evaluating solutions w.r.t. correctness, efficiency ("big O notation"), and usability 5. Elementary algorithms: searching and sorting techniques 6. Elementary data structures: vectors, linked lists, stacks, graphs and trees

Aanvullende informatie onderwijsvormen

This course revolves around self-study with the interactive course e-book, in combination with class sessions for deepening understanding (once per week), and exercise classes (twice per week).

Toetsvorm

Weekly graded assignments measure the learning progress during the course. At the end, a written (computer-based) exam tests the overall achievement. All assignment grades are combined to a weighted average. This average and the exam grade both contribute 50% each to the final grade, and both parts must be passed (a grade of 5.5 or higher) in order to pass the course. There is a resit exam, but there is no resit opportunity for the weekly assignments.

Literatuur

We share the book with the course on Computer Programming (XB_40011) that is running simultaneously: Programming in C++, Frank Vahid and Roman Lysecki, interactive e-book, https://www.zybooks.com/catalog/programming-c-plus-plus

Aanvullende informatie doelgroep

1CS

Toelichting Canvas

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Computer Networks

Vakcode	X_400487
Studiepunten	6
Periode	P5
Vakniveau	100

Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	ir. J.J.R. Donkervliet MSc
Examinator	ir. J.J.R. Donkervliet MSc
Betrokken Docenten	ir. J.J.R. Donkervliet MSc
Onderwijsvormen	Werkgroep, Werkcollege, Hoorcollege, Deeltentamen schriftelijk

Doel vak

After successfully completing the Computer Networks course, you are able to: 1. Explain the basic principles and modern functions of computer networks and data communication. 2. Describe the layered network architecture and explain the essential function(s) in these layers. 3. Apply basic physics, theorems from information theory, and network protocol properties to calculate network properties such as maximum bit rate, minimum round-trip latency, window size, etc. 4. Apply networking mechanisms and algorithms to detect and correct transmission errors, compute routing tables, set window sizes, etc. 5. Explain the concept of Quality of Service, why different applications have different networking requirements, and how these requirements translate to network and protocol properties. 6. Explain issues related to performance and scalability in today's popular networking protocols. 7. Demonstrate proficiency in socket programming by implementing basic networked applications.

Inhoud vak

The emphasis in this course is on fundamental concepts in digital communication. In modern computer networks, data communication takes place by sending data from A to B via a layered architecture where each layer implements a different abstraction. The higher layers are responsible for handling web pages, emails and similar things, that are translated into packets, bits, and eventually digital signals on physical links (e.g., lightpulses, electrical signals in copper wires, radio waves). This layered architecture with increasing levels of abstraction and separation of concerns, is a fundamental approach that you will encounter in all aspects of computer science (and beyond). Within this architecture, we will concern ourselves with questions like: what route should the data follow through the network, what do we do when errors occur, how do we interconnect two networks that have completely different properties, etc. Following the IEEE/ACM Computer Science curriculum, topics to be discussed include: the layered network architecture, different types of networks (e.g., wired and wireless, LAN and WAN), multiplexing, error control, flow control, routing and forwarding, names and addresses, high-level architectures of networked applications (peer-to-peer, client/server, etc), performance issues, and scalability issues. These issues are discussed while exploring technology behind the Internet and its popular protocols (e.g., TCP, UDP, Ethernet, Wifi, etc.).

Aanvullende informatie onderwijsvormen

Lectures, labs, and tutorials. This course is gamified.

Toetsvorm

(Mandatory) Basic lab assignments. (Turn in to SAs) (Mandatory) Final exam, multiple choice. (Optional) Mid-term, multiple choice. The results of the mid-term exam count only if the final exam is also taken by the student, and only if it increases the final grade of the student. (Optional) Optional lab assignments. (Turn in to SAs) (Optional) Self-study assignment. (Turn in to TAs) (Optional) In-class exercises, oral and written. All partial results (including the lab, and the mid-term and final exams) are only valid during one academic year. The end grade is the total number of points accumulated across all assessment possibilities scored divided by 1000. It is possible to score a perfect 10 as final grade. The different course activities are graded as follows: 1) Exam, multiple-choice questions (max 7,500 points) 2) Self-study assignments (max 2,000 points) 3) Lab assignments (max 4,000 points) 4) In-class activity (max 50 points per session) There is only a resit opportunity for the exam.

Literatuur

Andrew S. Tanenbaum and David Wetherall, Computer Networks, 5th ed.

Aanvullende informatie doelgroep

1CS

Overige informatie

Current information can be found on Canvas: canvas.vu.nl

Aanbevolen voorkennis

- University-level programming course. - Basic knowledge of the Python programming language.

Computer Organization

Vakcode	XB_40009
Studiepunten	6
Periode	P4
Vakniveau	100
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	ir. T.M. Hegeman
Examinator	prof. dr. ir. A. Iosup
Betrokken Docenten	dr. ir. A.K. Trivedi, prof. dr. ir. A. Iosup, ir. T.M. Hegeman
Onderwijsvormen	Werkcollege, Deeltentamen schriftelijk, Hoorcollege

Doel vak

1. Explain the basic concepts, historical objectives, and modern functions of digital computers. 2. Describe the basic architecture and operation of digital computers. 3. Use proficiently binary data representation, number representation, and arithmetic and data conversion. 4. Explain at a proficient level the architecture and operation of each of the main components of a digital computer: the basic processing unit, the hierarchical memory system, the I/O system, and the interconnection system. 5. Explain at a basic level various system mechanisms for building faster single-node systems, such as pipelining and caching, and large-scale systems. 6. Demonstrate proficiency with basic assembly programming by implementing basic operations of digital computing in realistic scenarios. 7. Analyze at a basic level the tradeoffs inherent in the design of digital computers, concerning among others performance (simple modeling), scalability (Amdahl's Law), availability, energy consumption, and cost.

Inhoud vak

Computers are everywhere, in industry, academia, governance, and many other activities that impact our society. But what are they? How do they work? How to analyze them and to improve their performance? Matching the requirements of the IEEE/ACM CS Curriculum, topics for this course include: the architecture, the structure, the operation and the interconnection of computer components into computer systems, including modern architectures, data representation, assembler programming, virtual machines, the structure of translators, compiling and loading, basic operating systems concepts (I/O, interrupt handling, process).

Aanvullende informatie onderwijsvormen

Lectures 4h/week Tutorial (Instructie) 2h/week. Practical work (Lab) 4h/week, from week 3. Self-study in teams. This course uses dr. Iosup's method for gamification.

Toetsvorm

(Mandatory) basic lab assignments. Does not award any points. (Turn in to SAs) (Mandatory) final exam, written, multiple choice. (Optional) in-class exercises, oral and written. (Optional) mid-term exam, written, multiple choice. The results of the mid-term exam count only if the final exam is also taken by the student, and only if it increases the final grade of the student. (Optional) self-study booklet, hand-written. (Turn in to TA) (Optional) advanced lab assignments. (Turn in to SAs) All partial results (including the lab, and the mid-term and final exams) are only valid during one academic year. The end grade is the total number of points accumulated across all assessment possibilities scored divided by 1000. It is possible to score a perfect 10 as final grade. The different course activities are graded as follows: 1) Exam, multiple-choice questions (max 7,500 points) 2) Self-study assignments (max 2,000 points) 3) Lab assignments (max 4,000 points) 4) In-class activity (max 50 points per session). There is only a resit opportunity for the exam.

Literatuur

Books (students can pick any) Carl Hamacher and Zvonko Vranesic, Computer Organization, 6th edition, McGraw-Hill Education, 2011. ISBN-13: 978-0073380650 David A. Patterson and John L. Hennessy, Computer Organization and Design: The Hardware/Software Interface, 5th edition, Morgan Kaufmann, 2013. ISBN-13: 978-0124077263 Additional Study Materials Course and Lab guides are also provided via Canvas.

Computer Programming

Vakcode	XB_40011
Studiepunten	6

Periode	P1
Vakniveau	100
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. ing. T. Kielmann
Examinator	dr. ing. T. Kielmann
Betrokken Docenten	dr. ing. T. Kielmann
Onderwijsvormen	Practicum, Hoorcollege

Doel vak

Students learn the basic concepts of computer programming. After completing the course, students will be able: - to write small computer programs, - to test programs for correct behaviour, - and to correct programming mistakes.

Inhoud vak

In this course, you learn the basic concepts of computer programming. We are using the C++ programming language. The course consists of six modules: 1. The basics: data types, operators, type conversions, expressions, statements, if, switch, loops 2. Vectors, Streams, Exceptions 3. User-defined functions: parameter passing, declarations and scope, how functions work 4. Recursion: functions that call themselves 5. Classes: abstract data types, interfaces and implementation, constructors and initialisation 6. Memory management: pointers, new and delete, memory leaks

Aanvullende informatie onderwijsvormen

This course revolves around self-study with the interactive course e-book, in combination with class sessions for deepening understanding (2 times per week), and practical programming assignments (individual preparation and guided lab sessions 3 times per week).

Toetsvorm

The theoretical knowledge will be tested by a written (computer-based) exam. The practical programming skills will be tested by the assignments of the computer practical. Next to the main exam at the end of the course, there will be a resit exam. The computer practical runs throughout the course as a whole; there will be no resit for the practical assignments. Both exam and computer practical must be passed. In this case, the overall grade is the weighted average of the exam grade (60%) and the computer practical (40%). Students can raise their overall grade by up to 1 bonus point by timely completion of the exercises in the interactive e-book.

Literatuur

Programming in C++, Frank Vahid and Roman Lysecki, interactive e-book,
https://www.zybooks.com/catalog/programming-c-plus-plus

Aanvullende informatie doelgroep

1CS

Toelichting Canvas

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Computer Programming Project

Vakcode	X_400556
Studiepunten	6
Periode	P6
Vakniveau	200
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. A.J. van der Ploeg MSc
Examinator	dr. A.J. van der Ploeg MSc
Betrokken Docenten	dr. A.J. van der Ploeg MSc
Onderwijsvormen	Hoorcollege, Computerpracticum

Doel vak

Students learn to apply programming concepts in the context of a larger project. After completing the course, students will be able to plan, develop, and test larger programs for correct behavior according to a given specification.

Inhoud vak

In this course you will implement an emulator capable of executing IJVM byte-code. The implementation will be done in C. The assignment is split into several smaller parts that build up to the final deliverable.

Aanvullende informatie onderwijsvormen

One introductory lecture in the first week. 4 weeks of practical work.

Toetsvorm

The student’s knowledge will be assessed by means of a practical programming assignment and an oral evaluation. Both the practical assignment and the oral evaluation require a passing grade. The final grade consists for 100% of the grade of the practical programming assignment. The oral evaluation is graded with pass/ fail. There will be no resits for either of the assessments.

Literatuur

- The course syllabus - Extra (optional) reading: - Ritchie, D. M., Kernighan, B. W., & Lesk, M. E. (1988). The C programming language. Englewood Cliffs: Prentice Hall. - Andrew, S. Tanenbuam. "Structured Computer Organization." Prentice-Hall, Inc. New Jersey (1999).

Aanvullende informatie doelgroep

1CS

Aanbevolen voorkennis

This course is a Programming practical so we expect you to be proficient at the level of Computer Programming (XB_40011). A good grasp of systems architecture is also recommended.

Concurrency & Multithreading

Vakcode	X_401031
Studiepunten	6
Periode	P1
Vakniveau	400
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	prof. dr. W.J. Fokkink
Examinator	prof. dr. W.J. Fokkink
Betrokken Docenten	prof. dr. W.J. Fokkink
Onderwijsvormen	Werkcollege, Hoorcollege

Doel vak

This course provides a comprehensive presentation of the foundations and programming principles for multicore computing devices. Specific learning objectives are: * To provide insight into fundamental notions of multicore computing and their relation to practice: locks, read-modify-write operations, mutual exclusion, consensus, construction of atomic multi-reader-multi-writer registers, lost wakeups, ABA problem. * To provide insight into algorithms and frameworks for multicore computing and their application in multi-threaded programs: mutual exclusion algorithms, spin locks, monitors, barriers, AtomicStampedReference class in Java, thread pools in Java, transactional memory. * Analyzing algoritmes for multicore computing with regard to functionality and performance: linearizability, starvation- and wait-freeness, Amdahl's law, compute efficiency gain of parallelism. * Mastering elementary datastructures in the context of multicore computing: lists, queues, stacks. * Programming in multi-threaded Java, and performing experiments with such programs.

Inhoud vak

The course consists of the following topics: Shared memory, mutual exclusion, synchronization operations, concurrent data structures, scheduling, transactional memory, and a multithreaded programming assignment.

Aanvullende informatie onderwijsvormen

4 hours per week HC 4 hours per week WC

Toetsvorm

The written exam counts for 75% and the programming assignment for 25% of the final mark. Both for the written exam and the programming assignment at least a 5.0 must be obtained (and the overall average mark should be at least 5.5). Only students that achieved at least a 3.0 for their initial programming assignment are offered a resit opportunity for this assignment, for which at most a 6.0 can be achieved.

Literatuur

Maurice Herlihy, Nir Shavit, The Art of Multiprocessor Programming, Morgan Kaufmann, 2008.

Aanvullende informatie doelgroep

3CS

Aanbevolen voorkennis

Datastructures & Algorithms Computer Programming Knowledge of Java

Conflict and Peace Building: Global and Intersectional Perspectives

Vakcode	S_CPB
Studiepunten	6
Periode	P2
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Sociale Wetenschappen
Vakcoördinator	dr. M. Matelski
Examinator	dr. M. Matelski
Betrokken Docenten	dr. S. Sremac, dr. M. Matelski
Onderwijsvormen	Werkcollege

Doel vak

The aim of this course is to introduce students to the causes and dynamics of conflict and the key approaches to conflict management, transformation, reconciliation and peacebuilding in (post-)conflict societies, with specific emphasis on the local level and with ample attention for individual circumstances and dispositions. When finalizing the course, students will be able to: - understand the main approaches and theories related to the root causes, local dynamics, transformation and resolution of conflicts; - understand the role and complexity of intersectional identities (e.g. religion, gender, class, ethnicity, sexuality, etc.) in conflict occurrence, transformation and resolution. - apply multiple perspectives and insights from various disciplines to specific case studies in (post-)conflict societies.

Inhoud vak

Since the early twentieth century, the world has been shaken by war, ethnic cleansing, terrorism, crimes against humanity and genocide, followed by transitional and transformative phases of conflict management, conflict resolution and peacebuilding. In order to understand the root causes of conflict and its local dynamics as well as conflict transformation and reconciliation efforts, it is necessary to focus on the everyday experiences, interests, and needs of the different actors involved in these processes on the micro-level. In contrast to what the course name indicates, the focus will thus also be on the local context in which conflicts take place. Given the changing nature of conflict, this course discusses and examines some of the key concepts and recent developments in relation to distribution and inequality, governance and human rights, as well as the influence of external interventions such as peacekeeping missions, development schemes, humanitarian aid and international trade, which all influence the onset, course, and solutions available in situations of conflict. The course will pay attention to these practices and initiatives in different national, cultural and political environments, drawing from examples in Africa, the Americas, (South)East Asia, Europe and the Middle East. Based on various case studies presented by

(guest)lecturers with expertise in fields such as migration, religion, ethnicity, gender and development, students will be presented with a comprehensive understanding of the root causes, dynamics, and transformation of conflict in various societies. Students will apply these insights in a group assignment and in a written exam with short essay questions.

Aanvullende informatie onderwijsvormen

• Interactive (guest) lectures discussing various case studies. • Working group sessions. • Study visit to the Mechanism for International Criminal Tribunals (MICT) in The Hague (if circumstances allow). N.B.: In case online teaching will be the main teaching mode possible, we will adopt a blended learning model that allows both national and international students to participate in this course in an equal manner.

Toetsvorm

Individual exam Group assignment

Literatuur

Selection of articles and book chapters (available via VU library homepage).

Aanvullende informatie doelgroep

Students in the minor Peace and Conflict Studies. The course is also open as an elective course.

Aanbevolen voorkennis

Those students interested in conflict and peace-bulding studies.

Creatief Schrijven

Vakcode	L_AABAALG084
Studiepunten	3
Periode	P2
Vakniveau	300
Onderwijstaal	Nederlands
Faculteit	Faculteit der Geesteswetenschappen
Vakcoördinator	prof. dr. J.H.C. Bel
Examinator	prof. dr. J.H.C. Bel
Betrokken Docenten	prof. dr. J.H.C. Bel
Onderwijsvormen	Werkgroep, Practicum

Doel vak

Studenten verdiepen hun kennis van de verhaaltheorie. Daarnaast leren zij de inzichten met betrekking tot de narratieve structuren en literaire strategieën toe te passen in zelf te schrijven teksten. Doel van de cursus is inzicht krijgen in literaire technieken ten behoeve van het schrijven van fictie. Je leert nadenken over wat een personage in een roman of verhaal is en kunt het personage ook in een historische, literatuurwetenschappelijke context plaatsen. Verder ben je in staat zaken als het vertelperspectief en de vrije indirecte rede te benoemen en zelf een afgeronde fictionele tekst te schrijven. Door middel van peer review leer je elkaars teksten te beoordelen.

Inhoud vak

In het college Creatief schrijven verdiep je je in literaire technieken en leer je onder leiding van een schrijver hoe je een verhaal schrijft. Als je zelf schrijft, begrijp je namelijk beter hoe het literaire mechaniek werkt (structuur, stijl, plot, genre, ruimte) en hoe je daarmee uitdrukking kunt geven aan de persoonlijke inzichten die je wilt overdragen in een verhaal. In een reeks colleges verdiep je je in de verschillende technieken die in fictionele teksten worden gebruikt. Dat gebeurt aan de hand van de opgegeven literatuur, door middel van oefeningen en door het zelf schrijven van een literaire tekst die elke week in omvang groeit.

Aanvullende informatie onderwijsvormen

werkcollege (2 uur per week)

Toetsvorm

• schriftelijk tentamen over James Wood, How fiction works/ Hoe fictie werkt (40%) • het schrijven van een kort verhaal (60%) Voor beide onderdelen moet minimaal een 5,5 worden behaald.

Literatuur

James Wood: Hoe fictie werkt. / How fiction works. Andere te lezen primaire en secundaire teksten worden voor aanvang van de cursus in Canvas bekendgemaakt.

Aanvullende informatie doelgroep

De minor staat open voor alle studenten, van binnen en van buiten de VU.

Overige informatie

Deze cursus is een verplicht onderdeel van de minor ‘De Schrijfacademie’. Daarnaast volgen de studenten ‘Klassiekers in context 1 en 2 (9 EC), ‘Multatuli multicultureel’ (6 EC), De schrijversparade’ (3 EC), en ‘Het Rijksmuseum’ (6 EC).

Creative Writing

Vakcode	L_NNBAALG001
Studiepunten	6
Periode	P2
Vakniveau	200
Onderwijstaal	Nederlands
Faculteit	Faculteit der Geesteswetenschappen
Vakcoördinator	prof. dr. J.H.C. Bel
Examinator	prof. dr. J.H.C. Bel
Betrokken Docenten	prof. dr. J.H.C. Bel
Onderwijsvormen	Werkcollege

Doel vak

Het streven is studenten inzicht te geven in literaire technieken zodat ze zelf fictie of een essay leren schrijven van een behoorlijk technisch niveau. Aan het eind hebben de studenten een afgeronde (fictionele) tekst geschreven, een kort verhaal, een afgerond romanfragment of een essay. Studenten krijgen inzicht in hoe fictie en non-fictie werkt vanuit het perspectief van de auteur, zodat ze zich kunnen bekwamen in het vak en de kunst van het schrijven.

Inhoud vak

In een reeks colleges, onder leiding van 'vrije schrijver' Maxim Februari en Jacqueline Bel, wordt de student uitleg gegeven van verschillende schrijftechnieken die in fictionele en niet-fictionele teksten worden aangewend. Dat gebeurt aan de hand van de opgegeven literatuur; verder door middel van oefeningen; en tot slot door middel van het zelf schrijven van een stuk fictie of non-fictie dat elke week in omvang groeit. Er wordt uitleg gegeven over en geoefend met essentiële literaire technieken en tactieken. De aandachtspunten zijn daarbij: - literair taalgebruik: wat is dat en hoe werkt dat; wat maakt een metafoor succesvol; hoe zijn verschillende taalregisters (bijvoorbeeld het schakelen van meer verheven taalgebruik naar volkstaal en terug) van invloed op de inhoud van wat wordt verteld; - literaire details: wat voor details (observaties) zijn effectief in een literaire tekst en hoe werkt dat precies; - perspectief: wat is dat en hoe werkt het; hoe maakt een schrijver de keuze tussen de ik-vorm en de hij-vorm of waarom kiest hij eventueel voor een ander perspectief; - het schrijven van dialogen; - het schrijven van monologen in proza: de 'monologue intérieur' en de 'stream of consciousness'; - de opbouw van een plot; en tot slot: - wat is een literair personage.

Aanvullende informatie onderwijsvormen

Er is een werkcollege van 2 uur per week. De docent geeft gedetailleerde toelichting bij de bij 'Inhoud' genoemde onderwerpen. De kennis die de student zo verkrijgt, zal moeten worden toegepast in het verhaal of het romanfragment waaraan de student werkt. De student krijgt feedback op zijn tekst. De eerste bijeenkomst is inleidend en informerend, tijdens de laatste bijeenkomst worden de verhalen en romanfragmenten ingeleverd (de afgesproken deadline is onverbiddelijk) en wordt er een tentamen afgenomen. De helft van de overblijvende werkgroepbijeenkomsten zal theoretisch van aard zijn en in de andere helft zal praktisch worden ingegaan op de groeiende teksten. Bovendien zullen er tijdens de bijeenkomsten oefeningen worden gedaan op het gebied van de schrijftechniek en zullen er literaire fragmenten worden gelezen, besproken en toegelicht. Bovendien vindt er, indien realiseerbaar, een excursie plaats naar een literaire uitgeverij.

Toetsvorm

1) Actieve participatie en minimaal 80% aanwezigheid; de student moet mee kunnen discussiëren en er blijk van geven dat hij/zij met inzicht kan praten over de in de oefeningen behandelde schrijftechnieken. Onder actieve participatie wordt ook verstaan dat de student zich aan de opgegeven deadlines houdt en dat hij/zij de tussentijdse (schriftelijke) opdrachten maakt. 2) Een afgeronde fictionele tekst van ongeveer drieduizend woorden - ook als er sprake is van een romanfragment moet er worden getoond dat er naar een zekere afronding kan worden toegewerkt. 3) Een tentamen waarin fictietechnieken moeten kunnen worden herkend, benoemd en toegepast. De verdeelsleutel bij het toekennen van het eindcijfer zal zijn: afgeronde fictionele tekst (60% van het eindcijfer); tentamen (40% van het eindcijfer). Aanwezigheid (minimaal 80% van de colleges) en participatie (1) moeten voldoende zijn.

Vereiste voorkennis

Het eerste deel van het minorcollege 'Meesterwerken uit de wereldliteratuur' (periode 1) moet zijn gevolgd.

Literatuur

Verplicht: James Wood, How Fiction Works (Jonathan Cape, London, 2008) of de Nederlandse vertaling Hoe fictie werkt (Querido, Amsterdam, 2012); zelf aan te schaffen. Verder zullen (fragmenten uit) andere boeken worden aangeraden in de loop van de bijeenkomsten.

Aanvullende informatie doelgroep

Dit vak is onderdeel van de minor 'Aan de slag met literatuur'. Deze minor staat open voor alle tweede- en derdejaars studenten van binnen en buiten de VU.

Overige informatie

Aanwezigheid bij de colleges is verplicht (80%). Studenten die door omstandigheden vaker afwezig zijn dan is toegestaan, kunnen eventueel een extra opdracht krijgen.

Current Issues in Migration Law

Vakcode	R_HumRCI
Studiepunten	3
Periode	P3
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Rechtsgeleerdheid
Vakcoördinator	A. Tarchi
Examinator	A. Tarchi
Betrokken Docenten	drs. R.S. Franco MSc, dr. E. Zambelli MA, A. Tarchi, prof. mr. T.P. Spijkerboer
Onderwijsvormen	Leergroep, Werkcollege, Hoorcollege, Training

Doel vak

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Inhoud vak

This course invites students to think critically about migration-related issues of contemporary relevance in Europe by using a combination of social and legal perspectives. Irregular migration, human trafficking, refugeehood, family reunification, integration, among other issues, feature daily in the news and are hotly debated in politics. Students will practice and sharpen their critical analysis skills by doing research on one such current issue of their choice. Previous current issue topic areas included: migrant sex work vs. sex trafficking, family reunification policies, externalisation of EU borders, integration policies, irregularised migration.

Aanvullende informatie onderwijsvormen

The course includes two lectures and one workgroup seminar. The first lecture will introduce students to thinking critically about current migration issues and to elicit the role that different sources of law play in shaping them. The second lecture will provide an overview of how to formulate and develop a research proposal that responds to a feasible (i.e. scope-limited) research question, combines social and legal perspectives and engages critically and in a balanced way with multiple perspectives on the topic examined. For the seminars, students will be divided into

three workgroups, each facilitated by a teacher. The aim is for students to: • present their research proposal to the teacher and to their peers, and receive their feedback; • record the feedback received in the view to incorporate it meaningfully in the subsequent research paper; • actively and constructively contribute to the discussion of their peers' research proposals. In addition, teachers will offer office hours to support students through the research and writing process.

Toetsvorm

Written research proposal, presentation of that research proposal, and a final research paper. Students will work in pairs.

Literatuur

Preliminary reading lists will be announced on Canvas for a range of current topics.

Aanvullende informatie doelgroep

Apart from regular students, the course is also available for: Students from other universities/faculties Exchange students Contractor (students who pay for one course)

Current Issues in Transnational Law

Vakcode	R_CIsTrL
Studiepunten	3
Periode	P3
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Rechtsgeleerdheid
Vakcoördinator	F. Gremmelprez
Examinator	prof. dr. G.T. Davies
Betrokken Docenten	prof. dr. G.T. Davies, F. Gremmelprez
Onderwijsvormen	Hoorcollege

Doel vak

This course introduces students to selected topics in transnational law which are of particular current importance or interest. Classes are interactive, involving some lectures, but also discussions and exercises. The aim is to help students understand the kinds of law and policy problems which are important at European and International level, and to critically evaluate the responses to these. This prepares the students for advanced courses at masters level, where they may engage with these problems in more detail. Students will have to read and analyse academic literature and engage in active discussion of current issues, as well as formulating problems and questions in short essay(s). Oral and writing analytic abilities are therefore the major skills advanced in this course.

Inhoud vak

In 2021, the course focuses on the following three topics: - The EU law and policy on refugees in the Mediterranean - Social media, democracy and platform liability - Health surveillence

Aanvullende informatie onderwijsvormen

Interactive lectures, in which discussion and problem-solving are involved.

Toetsvorm

Short paper and participation. Attendance is compulsory in order to obtain a grade.

Literatuur

Reading will be placed on Canvas nearer the time.

Aanvullende informatie doelgroep

Apart from regular students, the course is also available for: Students from other universities/faculties Exchange students Contractor (students who pay for one course)

Overige informatie

Overige informatie

Course objectives The purpose of this course is to allow students to develop and practice a set of different legal skills. Most importantly, the students will practice how to analyze various legal texts, understand them in a broader societal context and subsequently construct their own argumentation on a given issue. The course addresses various recent developments which pose certain legal problems where, however, no ready solutions are yet available. Thus, the students will be required to approach problems presented in the class critically and draw on a vast variety of assigned text to form a convincing argumentation to the research questions assigned during the course. The course promotes independent analysis, critical thinking and oral and writing communication skills of the students. Study objectives' description available in Dutch ('eindtermen'): 4,5, 7,9, 10, 11, 12, 16, 18, 19, 21, 22

Aanbevolen voorkennis

Exchange students - basics of EU law and integration, good command of English

Data Analytics and Privacy

Vakcode	R_DAP
Studiepunten	6
Periode	P2
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Rechtsgeleerdheid
Vakcoördinator	mr. T.H.A. Wisman
Examinator	mr. T.H.A. Wisman
Betrokken Docenten	prof. mr. A.R. Lodder, dr. D. Spagnuelo
Onderwijsvormen	Leergroep, Hoorcollege, Werkgroep

Doel vak

Data Analytics and Privacy focuses on the role of European fundamental rights and legal principles in the regulation of data analytics, with a general focus on the right to privacy and data protection. After this course: 1. The student will know and understand important legal aspects concerning data analytics and privacy. 2. The student will know, understand and be able to apply the basics of data protection law. 3. The student will know and understand the basics of data analytics. 4.The student will understand and be able to reflect on potential interferences with fundamental rights following from data analytics.

Inhoud vak

Data analytics has the ability to pose significant challenges to privacy, human autonomy and dignity. The ability to influence people in ways they can act against their own interest is what political scientists describe as power. Data analytics as an instrument to develop knowledge and facilitate the exercise of power is a phenomenon which requires regulation. Power in a constitutional democracy, whether exercised by the state or other parties, has to be subject to law. Law offers the option to mediate between conflicting interests guiding towards a legal solution of a problem rather than one which is based on brute force. Privacy is a societal norm which is codified in Article 8 of the European Convention of Human Rights. EU data protection legislation in the form of the General Data Protection Regulation (GDPR) regulates the processing of personal data in EU member states. Privacy and data protection are a funny pair which have provoked many lawyers to write relentless essays on. Gutwirth and De Hert, two prominent privacy and data protection lawyers from Belgium, use an interesting distinction between the two. They refer to privacy as an opacity instrument, because it protects a sphere in which the individual's behaviour is not being recorded. They refer to data protection as an transparency instrument, because it makes the exercise of power knowledgeable for those who are on the receiving end.Privacy and data protection law offer rules that can be complied with by parties who want to use data analytics in their strategies and policies. In this course the basics of privacy and data protection law are explained in the context of data analytics. The idea is for students of computer science to understand the basics of the law and for students of law to understand the basics of data analytics. The ultimate goal is to understand the interaction between data analytics and privacy laws.

Aanvullende informatie onderwijsvormen

Lectures, tutorials.

Toetsvorm

Exam

Literatuur

Made available via Canvas.

Aanvullende informatie doelgroep

Apart from regular students, the course is also available for: Students from other universities/faculties Contractor (students who pay for one course).

Data Science: Visualization and Analytics in R

Vakcode	S_DSVAR
Studiepunten	6
Periode	P2
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Sociale Wetenschappen
Vakcoördinator	dr. M.A.C.G. van der Velden
Examinator	dr. M.A.C.G. van der Velden
Betrokken Docenten	M.J. Steijaert MSc, dr. M.A.C.G. van der Velden, F. Loecherbach
Onderwijsvormen	Practicum, Werkcollege

Doel vak

• Students will master various computational techniques in R: structuring digital data, visualization and systematic evaluation. • Students are able to critically reflect on the implications of the selection, structuring and manipulation of data for the outcome of their work. They are able to evaluate results critically and in a systematic manner. • Students will be able to critically analyze other digital based research projects. They will be able to position their own work in the existing field of digital humanities and social analytics. • Students are able to collaborate with advanced research groups, with other disciplines, manage group processes, and communicate results to a larger audience (final presentation). They will be able to present their work in a both academically convincing and ethical way for an interdisciplinary audience. • Students possess knowledge of digital tools and opportunities of a field of research in order to continue to acquire computing skills and pursue further studies and / or a career that entails interdisciplinary collaboration, work with many types of data and media and involves high level critical and analytical skills.

Inhoud vak

The explosion of digital information and increasing efforts to digitize existing information sources has produced a deluge of data, such as digitized historical news archives, literature, policy and legal documents, political debates and millions of social media messages by politicians, journalists, and citizens. Graphs and charts let you explore and learn about the structure of the information you have collected. Good data visualizations enable you to communicate your ideas and findings. This course will offer analytical and practical training in digital visualization techniques using the open-source platform R. This course is placed in the broader scope of Digital Humanities and Social Analytics. In terms of critical reflection and skills this is a more advanced course within the Minor Digital Humanities and Social Analytics.□□An important part of the classes will entail practical training in the visualization of data: what are the "right numbers" to present, how to present uncertainty in data, which ties in a network are important enough? The course will teach you how to transform data to a visual: from a basic graphical display to animated and BBC-worthy graphics (e.g. see https://www.r-bloggers.com/create-data-visualizations-like-bbc-news-with This course invites you to develop visuals from many data sources, such as textual data, networked data, etc. At the end of the course you will be able to use attractive visualizations to present your research results in both oral and written communications.

Aanvullende informatie onderwijsvormen

Lectures and seminars

Toetsvorm

Group assignments (40%), take-home exam (60%), both parts have to be evaluated with a sufficient grade to pass the course.

Literatuur

- Healy, K. (2018). Data visualization: a practical introduction. Princeton University Press. (online version freely

available) - Additional scientific articles and book chapters

Aanvullende informatie doelgroep

Students who take the University Minor ‘Digital Humanities and Social Analytics’. As long as there are available places, we welcome other students of all disciplines, including international exchange students. Please contact the coordinator in advance.

Overige informatie

This course is part of the minor Digital Humanities and Social Analytics.

Aanbevolen voorkennis

This course is designed for students who take the minor Digital Humanities and Social Analytics. For other students it would be helpful to familiarize with the basics of digital data in advance. Please contact the instructors for more information and advice.

Data Structures and Algorithms

Vakcode	X_400614
Studiepunten	6
Periode	P1
Vakniveau	200
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. F. van Raamsdonk
Examinator	dr. F. van Raamsdonk
Betrokken Docenten	dr. F. van Raamsdonk
Onderwijsvormen	Hoorcollege, Werkcollege, Deeltentamen schriftelijk

Doel vak

The goal of the course is to get acquainted with basic data structures and the the design and analysis of algorithms. For the data structures part: At the end of the course, the student is familiar with data structures such as stacks, queues, linked lists, binary trees, binary search trees, balanced binary search trees, heaps, graphs, hash tables, The student is able to give (in pseudo-code) and analyze querying and updating operations on the data structures, and to express a data structure using one or more other data structures. For the algorithms part: At the end of the course, the student is familiar with several sorting algorithms, string matching algorithms, some graph algorithms, with the paradigms of divide-and-conquer, dynamic programming, and greedy algorithms, and with several concrete algorithms of every paradigm. The student is able to give (in pseudo-code) algorithms with an appropriate data structures, and to analyze algorithms in terms of worst-case time complexity, and in some case also with respect to space complexity and correctness.

Inhoud vak

The course is concerned with data structures and the design and analysis of algorithms. We study several subjects from the book by Cormen et al: linear data structures such as stacks, queues, linked lists, tree-like data structures such as binary trees, binary search trees, balanced binary search trees, heaps, graph-like data structures, and hash tables. Further we study several sorting algorithms. some graph algorithms. string matching, and the programming paradigms divide-and-conquer, dynamic programming, and greedy algorithms. We consider the worst-case time complexity and in some cases the correctness of algorithms.

Aanvullende informatie onderwijsvormen

There are 2 lectures per week and 2 exercise classes per week.

Toetsvorm

There is written mid-term exam that is concerned with the material of roughly the first three weeks. There is a written final exam that is concerned with all material, If the grade for the mid-term exam is higher than the grade for the final exam, then the mid-term exam contributes for 25% to the final grade and the final exam contributes for 75% to the final grade. In the other cases, the final grade is the grade for the final exam. There is a resit for final exam; there is no resit for the mid-term exam.

Literatuur

Literatuur

Introduction to Algorithms third edition, Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest and Clifford Stein, MIT Press 2009.

Aanvullende informatie doelgroep

2CS, 2BA 3W, 3Ect

Afwijkende intekenprocedure

The registration procedure is the standard one.

Toelichting Canvas

The schedule, slides for the lectures, and material for the exercise classes are available via the Canvas page of the course.

Aanbevolen voorkennis

It is helpful to know recursive procedures and arrays such as for example taught in the course Computer Programming (XB_40011). It is helpful to know graphs and elementary graph algorithms as for example taught in the course Networks and Graphs (X_401010).

Data Wrangling

Vakcode	XB_0014
Studiepunten	6
Periode	P3
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	prof. dr. S. Bhulai
Examinator	prof. dr. S. Bhulai
Betrokken Docenten	prof. dr. S. Bhulai
Onderwijsvormen	Hoorcollege, Werkcollege

Doel vak

The course is geared toward getting data ready for its end purpose. After this course, the student should be able to: 1. acquire data from different online and offline sources, 2. understand how to clean and pre-process data, 3. transform data for analytics purposes, 4. perform feature engineering, 5. visualize data.

Inhoud vak

Data wrangling is the process of gathering data in its raw form and molding it into a form that is suitable for its end use. This course is about how to gather the data that is available and produce an output that is ready to be used. There are a number of common steps in the data wrangling process that will be discussed: acquiring, cleaning, shaping and structuring the data, as well as feature engineering and visualization.

Aanvullende informatie onderwijsvormen

Lectures (6 x 2 hours) and Q&A sessions (3 x 2 hours).

Toetsvorm

The final grade is determined by hand-in assignments (30% of the final grade), a presentation and a report (70% of the final grade). Both parts have to be passed with a grade that is at least 5.5. There are no resit options for this course.

Literatuur

Slides

Aanvullende informatie doelgroep

3BA, 3LI, 3CS, 3IMM

Aanbevolen voorkennis

Programming experience in Python.

Databases

Vakcode	X_401008
Studiepunten	6
Periode	P5
Vakniveau	200
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. J. Endrullis
Examinator	dr. J. Endrullis
Betrokken Docenten	dr. J. Endrullis
Onderwijsvormen	Hoorcollege, Computerpracticum, Practicum

Doel vak

The course objective is to obtain a good knowledge and understanding of relational database systems. This includes the ability to develop good database models, and to query and update databases using SQL.

Inhoud vak

The course is concerned with base principles and important aspects of relational databases. The students will learn: (a) to design and evaluate database schemas using Entity-Relationship diagrams, (b) to understand the relational model (including integrity constraints such as key constraints and foreign key constraints), (c) to translate Entity-Relationship diagrams into relational schemas (and to enforce cardinality constraints by design), (d) to reason about good and bad database design using functional dependencies, (e) to apply normalization algorithms to transform a database schema into (various) normal forms, (f) to understand concurrency concepts like transactions, schedules and concurrency anomalies, and (g) to reason about different techniques for concurrency control (lock based concurrency control, optimistic concurrency control, multiversion concurrency control).

Aanvullende informatie onderwijsvormen

Lectures, exercise/practicum classes and individual homework.

Toetsvorm

The homework is mandatory for qualifying for the exam (70% of the homework points to qualify for the exam). In case at least 90% of the homework points is obtained, 0.5 bonus point is awarded for the final grade. At the end of the course there is a final exam. The overall grade is the grade of the final exam plus the possibly 0.5 bonus point obtained for the homework. (The bonus is only added for students that pass the exam with a grade of at least 5.5.) There is no resit opportunity for the homework.

Literatuur

Database Systems, The Complete Book, by: Hector Garcia-Molina & Jeffrey D. Ullman & Jennifer Widom. 2nd edition.

Aanvullende informatie doelgroep

2CS, 2IMM, 2LI, 2BA

Aanbevolen voorkennis

Basic programming skills help.

De schrijversparade

Vakcode	L_AABAALG082
Studiepunten	6

Periode	P1
Vakniveau	200
Onderwijstaal	Nederlands
Faculteit	Faculteit der Geesteswetenschappen
Vakcoördinator	prof. dr. J.H.C. Bel
Examinator	prof. dr. J.H.C. Bel
Betrokken Docenten	prof. dr. J.H.C. Bel
Onderwijsvormen	Werkcollege, Hoorcollege

Doel vak

* Studenten verwerven basiskennis van de klassieke retorica * Studenten leren een interview voorbereiden, houden en uitwerken * Studenten maken kennis met het werk van contemporaine schrijvers en journalisten en hun literatuuropvattingen

Inhoud vak

Hoe kun je je publiek boeien vanaf de eerste zin? Hoe schrijf je een pakkende tekst? Deze vragen houden de literatuur sinds de klassieke oudheid bezig en de antwoorden zijn ook buiten de literatuur relevant. Immers, een advocaat moet zijn gehoor weten te overtuigen van de onschuld van zijn cliënt of van verzachtende omstandigheden. En een CEO moet zijn bedrijf goed weten te ‘verkopen’. Na enkele introducerende colleges over de klassieke retorica waarbij je je traint in het schrijven van een zakelijk gestructureerde tekst, is er elke week een bekende schrijver of journalist te gast op college: studenten lezen en analyseren vooraf een van zijn of haar teksten, bereiden een interview voor en gaan tijdens het bezoek van de schrijver met hem/haar in gesprek over hun werk. Als gasten worden zowel creatieve schrijvers (o.a. de Vrije Schrijver), schrijvers van tv-series (Oud geld, Penoza, Hollands Hoop), als bekende journalisten of columnisten uitgenodigd (bijvoorbeeld Bas Heijne, Sheila Sitalsing, Geert Mak, Abdelkader Benali).

Aanvullende informatie onderwijsvormen

werkcolleges (2 uur per week)

Toetsvorm

• Het schrijven van een korte zakelijke tekst (60%) en mondelinge presentatie (40%) met powerpoint en handout. Voor beide onderdelen moet minimaal een 5,5 worden behaald. * Voorbereiding interview (moet voldoende zijn om het vak te halen, maakt geen onderdeel uit van eindcijfer).

Literatuur

De te lezen primaire en secundaire teksten worden voor aanvang van de cursus in Canvas bekendgemaakt.

Aanvullende informatie doelgroep

De minor staat open voor alle studenten, van binnen en van buiten de VU.

Overige informatie

Deze cursus is een verplicht onderdeel van de minor ‘De Schrijfacademie’. Daarnaast volgen de studenten ‘Klassiekers in context 1 en 2 (9 EC), ‘Multatuli multicultureel’ (6 EC), ‘Het Rijksmuseum’ (6 EC) en ‘Creatief schrijven’ (6 EC).

Decolonizing Europe: History and Memory

Vakcode	L_GCBAGES200
Studiepunten	6
Periode	P2
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Geesteswetenschappen
Vakcoördinator	drs. W.C. Manuhutu
Examinator	drs. W.C. Manuhutu

Betrokken Docenten	drs. W.C. Manuhutu
Onderwijsvormen	Werkcollege, Hoorcollege

Doel vak

Decolonizing Europe. History and Memory has both historical and methodological learning objectives. After the course, participants 1. Understand the main approaches to the postwar history of the European nation-state and are able to situate leading historians in the historiographic debate on decolonization, postcolonialism and decoloniality; 2. Understand how the course themes of decolonization and national histories in Europe play out in the institutional setting of museums and the construction of public discourse in present-day societies. They will be able to write a critical appraisal of museum exhibitions and collections and their role in European postcolonial society 3. Are able to critically review (in writing and speaking) a historical monograph, a work of fiction or a public debate relevant to the course theme, and to develop an argued opinion about the issues at hand; 4. Have been challenged to reflect on the own ‘subject position’, and explore the theme from various perspectives while acknowledging different experiences with respect to European postcolonial society.

Inhoud vak

The course focuses on the impact of European imperialism on the dynamics of nation-state formation starting from ‘postwar’ Europe (cf. Tony Judt’s Postwar. A History of Europe since 1945, first published in 2005). Judt discusses a European history ‘in the shadow of Auschwitz’. However, after 1945 all around the globe countries became independent as well, so what did that mean for Europe itself? How are these events and developments remembered in present-day European societies? The concept of multidirectional memory as developed by Michael Rothberg will be a point of departure in the course. Students will come across at least three political developments that played a major role in the repositioning of Europe in the international arena after colonialism: • The reordering of European national states in East and West, the impact of the Cold War • The changes within Europe and between Europe and the ‘Third World’ as a result of decolonization. • The gradual European integration process and, simultaneously, the emergence of major ambiguities within separate nation states concerning the concept of multicultural society. The course investigates how these developments interacted and can be traced in cultural developments, with particular attention to a better understanding of colonialism as a history with a deep influence on notions of belonging, inclusion and exclusion with respect to citizenship at national and European level. The colonial past not only ‘happened’ in the colonies, far away from Europe, but was also part of European history and still provides many different, contesting and opposing views and perspectives on the past and the making of contemporary society. Against the backdrop of a political history, this course will discuss how historians, philosophers, activists, politicians, writers, museum professionals and others approach this history within a national, European or global frame of reference.

Aanvullende informatie onderwijsvormen

The course will consist of weekly seminars (2.45 hrs) in which the themes of the course will be discussed. Students will be asked to present readings and lead discussions on topics they have prepared. Class attendance is mandatory, as is the excursion to a museum. Quizzes and polls will be included in the seminars.

Toetsvorm

Class participation (10%) ; In class presentations and discussions (20%); written assignment museum visit (20%) ; presentation of final written assignment (10%); final written assignment (40%)

Literatuur

The handbooks for the course are: Elizabeth Buettner, Europe after empire. Decolonization, society, and culture (Cambridge 2015) Michael Rothberg, Multidriectional Memory.Remembering the Holocaust in the Age of Decolonization (Stanford 2009) Additional literature will be posted on Canvas.

Aanvullende informatie doelgroep

BA 2 students Geschiedenis (general track); BA 2 students Geschiedenis (variant History and Heritage); BA 2 students History and International studies; students enrolled in the minor 'History'; exchange students

Toelichting Canvas

Information on the course schedule, additional literature, quizzes, polls and assignments will be posted on Canvas

Designing Solutions for Global Sustainability

Vakcode	AB_1231
Studiepunten	6
Periode	P3
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	prof. dr. P.J.H. van Beukering
Examinator	prof. dr. P.J.H. van Beukering
Betrokken Docenten	prof. dr. P.J.H. van Beukering, dr. ir. M.G. van der Meij
Onderwijsvormen	Werkcollege, Hoorcollege

Doel vak

This course aims to guide the student in designing solutions to complex challenges in global sustainability, within their own field of interest (e.g. energy, climate, water, waste, nature, food security, gender).

Inhoud vak

The course comprises interactive lectures and exercises and is assessed through an assignment. After this course students: • Can meaningfully integrate People-Planet-Profit analyses into the design of innovative solutions for global sustainability challenges in a systematic and creative manner; • Can characterize key components of the design creation process, namely analysis, synthesis and conceptualization; • Identify and apply methods and processes to design sustainable solutions and communicate the results in a convincing and credible manner; • Demonstrate a capacity to collaborate in interdisciplinary teams and contribute to a shared goal; • Reflect on personal strength and weaknesses in developing and conceptualizing global sustainable solutions.

Aanvullende informatie onderwijsvormen

The course is organized in three thematic weeks and a fourth closing week, which follow the logic of a design process, sequentially addressing: 1. Design analysis and design specification (week 1), 2. Ideation: going through the creative design process of innovation, development, and actualization (week 2), 3. Conceptualisation and evaluation, user empathising, and visualisation for product / service pitching (week 3), 4. Completion: final presentation and review of the sustainability solution, and personal reflection (week 4). Each week starts with a main lecture on Monday followed by two working sessions on Wednesday and Friday. The Wednesday session evolves mainly around Peer-to-Peer exercises while the Friday session will allow for more Peer-to-Teacher interaction. To accommodate the latter, two teachers will be present in the class-room on Friday. The working sessions and lectures will be highly interactive, for which there is a lot of space to work and reflect on your assignment.

Toetsvorm

The final course grade is completely based on an individual assignment, consisting of a pitch and a final report. To pass the course, students must obtain an overall grade of at least 5.5 (out of 10) and contribute to the compulsory activities. To calculate the overall grade, grades of the individual elements are averaged using the weights above.

Vereiste voorkennis

This course welcomes students of any background, as long as they have a strong affinity with sustainability challenges.

Literatuur

Week 1: 1. Tim Brown and Jocelyn Wyatt (2010). Design Thinking for Social Innovation. Development Outreach 12(1): 29 – 43 https://doi-org.vu-nl.idm.oclc.org/10.1596/1020-797X_12_1_29 2. Rikke Friis Dam and Yu Siang Teo (2019) 5 Stages in the Design Thinking Process. Interaction Design Foundation. https://www.interaction-design.org/literature/article/5-stages-in-the-de 3. Tassoul, M, & Buijs, J. (2007). Clustering: An Essential Step from Diverging to Converging. Creativity and innovation management 16(1): 16-26. DOI:10.1111/j.1467-8691.2007.00413.x. (focus on page 16 – 22) http://onlinelibrary.wiley.com/doi/10.1111/j.1467-8691.2007.00413.x/epdf Week 2: 4. Tom Ritchey (2002 - revised 2013) General Morphological Analysis: A general method for non-quantified modelling. Swedish Morphological Society. 1-10. http://www.swemorph.com/pdf/gma.pdf 5. Shih-WenHsiao∗Jyh-RongChou (2004). A creativity-based design process for innovative product design. International Journal of Industrial Ergonomics 34(5), 421-443. https://doi.org/10.1016/j.ergon.2004.05.005 6. Tassoul, M, & Buijs, J. (2007). Clustering: An Essential Step from Diverging to Converging. Creativity and innovation management 16(1): 16-26. DOI:10.1111/j.1467-8691.2007.00413.x. (focus on page 22 – 26) http://onlinelibrary.wiley.com/doi/10.1111/j.1467-8691.2007.00413.x/epdf Week 3: 7. Pruit, J., & Grudin, J. (2003). Persona's, practice and theory. DUX '03 Proceedings of the 2003 conference on Designing for user experiences: 1-

15. https://www.microsoft.com/en-us/research/wp-content/uploads/2017/03/prui 8. Chiara Diana, Elena Pacenti, Roberta Tassi (2009). Visual'tiles', Communication tools for (service) design, Conference Proceedings ServDes.2009; DeThinking Service; ReThinking Design; Oslo Norway 24-26 November 2009. http://www.ep.liu.se/ecp/059/006/ecp09059006.pdf 9. sSWOT: Eliot Metzger, Samantha Putt del Pino, Sally Prowitt, Jenna Goodward, Alexander Perera (2012). sSWOT: a sustainability swot user's guide. World Resources Institute (WRI). Washington DC. https://sustainabilitycasestudies.files.wordpress.com/2015/12/sustainabi

Aanvullende informatie doelgroep

This course is predominantly aimed at students that are following the ERM pre-master or the minor Sustainability: Global Challenges, Interdisciplinary Solutions. These students already worked on their case in the previous courses of this minor/pre-master and therefore have a head start in working on their solution. However, the course also welcomes students that did not follow these programs, although it may be slightly more challenging for them as they need to catch up quickly in the first week of this condense course.

Overige informatie

When students from other universities want to register for this course, they may be asked to which programme this course/minor belongs. Kindly fill the BSc program "Aarde, Economie & Duurzaamheid".

Development and Globalization

Vakcode	S_DG
Studiepunten	6
Periode	P1
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Sociale Wetenschappen
Vakcoördinator	dr. J.H. Jonkman
Examinator	dr. J.H. Jonkman
Betrokken Docenten	I. Schuitemaker, dr. J.H. Jonkman, dr. F. Colombijn
Onderwijsvormen	Hoorcollege

Doel vak

The aim of this course is to introduce students to development sociology and more in particular to gain insight into issues of poverty, global inequality and development. Students will develop an anthropological perspective on developmental issues in the Global South. Learning outcomes: Knowledge and understanding. The student has acquired knowledge and understanding of: (1) development and globalisation related processes and their effects on power relations on the global, regional, national and local level (2) development and globalisation related processes and their particular effects on urbanisation, migration, environment and natural resources, and political relations (3) anthropological analyses of development and globalisation related phenomena Application. The student has acquired the competences to: (4) understand and analyse the historical, sociocultural and political dimensions of international development and globalisation and their role in shaping the contemporary world Making judgements. The student demonstrates: (5) a critical attitude towards the theory and practice of globalisation and development. (6) the ability to reflect on issues of global social and cultural inequality Communication. The student has acquired the skills to: (7) express critical analysis of processes and phenomena related to globalisation and development in written text

Inhoud vak

The development of a capitalist economy in the North and the ongoing, global restructuring of the economy have impacted on economic and social development of the global South. Policies of states, supranational development agencies, and local NGOs to raise the standard of living in the so-called less developed countries have not attained the success levels hoped for. In fact, growth-oriented policies may have negative side effects, such as increased inequality, both within and between states, and ecological degradation. In this course, we analyse the interactions between (inter)national stakeholders and local populations, substantiating how particularly the so-called “poor” people experience inequality and poverty. We also highlight potential and experienced gap between intentions and outcomes of development policies and look at what anthropology can contribute to ‘development’ debates and policy implementation.

Aanvullende informatie onderwijsvormen

Lectures

Toetsvorm

Toetsvorm

Written assignment(s), including exam

Literatuur

To be announced in the course manual (on CANVAS)

Aanvullende informatie doelgroep

2nd year bachelor students in Cultural Anthropology and Development Sociology; Students in the minor Development and Global Challenges; Students in the minor Anthropology; The course is also open as an elective course.

Digital Humanities and Social Analytics in Practice

Vakcode	XB_0015
Studiepunten	6
Periode	P3
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. V. de Boer
Examinator	dr. V. de Boer
Betrokken Docenten	dr. V. de Boer
Onderwijsvormen	Werkcollege

Doel vak

To gain knowledge of a specific Digital Humanities challenge and dataset To apply the previously acquired skills and knowledge to a specific DH challenge To set up and execute a DH project in a multi- and/or interdisciplinary team To write a DH research paper and reflect on the work done from one's own background

Inhoud vak

Welcome to the Course "Digital Humanities in Practice". In this course, you will be able to apply your DH knowledge and skills to a real-world DH challenge . We have teamed up with respected researchers and renowned institutes to present you with a number of possible projects.

Aanvullende informatie onderwijsvormen

Initial lectures Interactive working groups DH "internship" in small groups

Toetsvorm

Assessment of the quality of the work done in the project (40%) The final research paper describing the project, the research and the results (30%) The presentations (20%), composed of the intermediate and final presentations scores as well as the peer reviews by other course groups A personal reflection (10%), listing the individual contribution of the student as well as the relation to previous courses (both within the minor and to other courses)

Vereiste voorkennis

A significant number of VU Digital Humanities Minor courses need to have been passed

Double Burden of Disease

Vakcode	AB_1109
Studiepunten	6
Periode	P2
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen

Vakcoördinator	dr. E.J. van der Mark MSc
Examinator	dr. E.J. van der Mark MSc
Betrokken Docenten	S.O.D. Okafor, dr. S.S. Rai, dr. U.O.C. Ilozumba
Onderwijsvormen	Werkgroep, Hoorcollege

Doel vak

• To understand key concepts, terminology and specific diseases of the double burden of disease • To be able to explain the double burden of disease • To understand the causes and implications of the double of disease in different contexts • To gain insight into health interventions to address the double of disease • To understand the complexities, consequences and possible interventions of the triple burden of disease • To acquire skills on finding, reading and integrating relevant literature for a scientific essay • To learn how to translate and communicate scientific results to the public, via online media

Inhoud vak

The course ‘Double Burden of Disease’ is a course within the ‘Global Health’ track of the minor ‘Biomedical and Health Interventions’ of the Bachelor programs Health Sciences, Biomedical Sciences and Health & Life (and other health-oriented Bachelor programs). Low- and middle-income countries (LMICs) currently face a “double burden of disease”. This term was defined by the WHO as “first, the emerging epidemics of non-communicable diseases and injuries, which are becoming more prevalent in industrialized and developing countries alike, and second, some major infectious diseases which survived the 20th century – part of the unfinished health agenda” (WHO, 1999a). In essence, the health shift from communicable diseases (CDs) (e.g. hepatitis A, polio, measles, tetanus) to non-communicable/chronic diseases (NCDs) (e.g. cardiovascular diseases, cancers and diabetes), which health system experts had seen in high-income countries (HICs) after the second world war, is not happening in LMICs. Instead, people in LMICs now face the double burden of high rates of both NCDs and CDs. This is also described as double-disease burden, dual burden, joint burden, and combined burden. In addition, recent conversations within the health and scientific field have highlighted the “triple burden” of communicable diseases, non-communicable diseases and additional factors such as mental health, injuries, socio-behavioural conditions. This introduces additional complexity to the existing problems of the double burden of disease. Although this course focuses on the double burden of disease, we will also discuss these emerging triple burdens. The beginning of the course presents an overview of communicable and non-communicable diseases as part of the conversation on the double and triple burden of disease. We will study key concepts and terminology as well as measurements related to the double burden of disease. The following lectures will address specific diseases as several examples of the double burden of disease and how it affects people, professionals and health care systems. For example, HIV as an infectious and chronic condition. Finally, we will discuss health system responses, interventions and programs to address the double (and triple) burden of disease.

Aanvullende informatie onderwijsvormen

Lectures 18 hours Work groups 9 hours (Mandatory) Self study 130 hours Examination 3 hours

Toetsvorm

Written Exam 50% Individual Essay 20% Group Blog 20% Group Blog Presentation 10% All parts need to be passed (grade 5.5 or higher)

Literatuur

Information on selected reading materials will be made available on Canvas

Aanvullende informatie doelgroep

Students following the minor Global Health or other students with a background in health- or biomedical science or another relevant bachelor programme in the Beta sciences.

Overige informatie

Guest lecturers will be invited to discuss fieldwork and research.

Aanbevolen voorkennis

We recommend students to have been enrolled in the minor courses Future Challenges in Global Health and Drivers for Change in Global Health.

Drivers of Change in Global Health

Vakcode	AB_1108
Studiepunten	6
Periode	P2
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	B.G.J.S. Sonneveld
Examinator	B.G.J.S. Sonneveld
Betrokken Docenten	B.G.J.S. Sonneveld, dr. U.O.C. Ilozumba, L.M. Darvey, drs. A. Koster MSc
Onderwijsvormen	Hoorcollege, Werkcollege

Doel vak

• Acquire knowledge and understanding of important drivers of change and how they influence health and health care globally • Be able to apply several data collection and analytic skills, using tools of demography, anthropology, sociology and epidemiology • Critically analyze scientific publications, theories, hypotheses and arguments, and justify and present findings both orally and in writing

Inhoud vak

"Ours is a period of change - continual, multi-form, and multi-level - technical, scientific, economic and political." (Dan Smith, 2012) The starting point of this course is that in every corner of our lives as individuals, communities and societies, there is change. These changes affect our health in many ways. We are for example confronted with new and emerging infectious diseases, an increase in non- communicable diseases, changing patient demand patterns and rising costs of health care. Changes in health and disease patterns and changes in health care are strongly influenced by the state of the world in terms of climate, demography, economic, politics, culture and technology. In addition, there is a trend of increasing globalization of the world, with a diversity of impacts on people in different parts of the worlds. The patterns and trends described above can be seen as drivers of change in global health as they bring along new problems and new opportunities regarding health and healthcare systems. The course analyzes causality of the process of change and identifies subsequent responses that mitigate negative effects. We thereby aim to answer questions like: Can changes in health be attributed to a single driver or are multiple factors at play? Is the impact of the driver generic or does it target local conditions? How can we isolate the effect of the driver amidst other factors? Indeed, identifying causality is a first step to support decision makers and design successful policy interventions. Furthermore, people normally do not succumb to damaging effects of changes; instead affected groups respond with mitigating measures by developing instant coping mechanisms, for the short term, and adaptation measures that anticipate future expected shocks, for longer periods. The controversial situation that short term planning of coping mechanisms undermines long term sustainable future adaptation measures should, of course, be avoided. This course consists of a series of lectures which provide insight into a number of important drivers of change in different parts of the world, such as urbanization, climate change, migration, technological development, and how they affect health and health care. Each lecture is accompanied by reading materials in the form of scientific articles and complementary background information from the book. Furthermore, the course consists of an assignment and project groups. For the assignment you conduct a case study into one specific driver of change in an assignment group with fellow students. You make use of scientific publications in different sub-assignments to come up with an evidence- based call for action with respect to the driver of choice. At the end of the course you will present your work orally and in the form of a written report together with your team. In the project group meetings you work on your academic skills (data collection, reflection, analysis etc.) through various exercises related to the topic of this course. During these meetings you also receive feedback on sub-assignments.

Aanvullende informatie onderwijsvormen

Lectures: 20 hours Assignment (project group meetings + independent group work): 75 hours (12 + 63) self study: 62,5 Exam: 2,5 hours

Toetsvorm

Written exam (50%) and group assignment (50%). Both the exam grade and the total group assignment grade should 5.5 or higher in order to pass the course. The assignment includes a written report (40%) and a presentation (10%). The two assignment components (report and presentation) can compensate for each other if one part is insufficient.

Literatuur

- Course guide - Assignment manual - Selected scientific publications (announced on Canvas). - Recommended: The penguin state of the world atlas, 2012 (ninth edition). Dan Smith. Penguin Books.

Aanvullende informatie doelgroep

Aanvullende informatie doelgroep

This is a compulsory course in the bachelor minor global health

Overige informatie

Guest lecturers will be invited for specific lectures. Lecture attendance is strongly recommended. Project group meetings and presentation attendance is compulsory.

Economic Challenges

Vakcode	E_EBE1_EC
Studiepunten	6
Periode	P1
Vakniveau	100
Onderwijstaal	Engels
Faculteit	School of Business and Economics
Vakcoördinator	dr. R.I. Luttens
Examinator	dr. R.I. Luttens
Betrokken Docenten	dr. R.I. Luttens, prof. dr. H.L.F. de Groot
Onderwijsvormen	Hoorcollege, Werkgroep

Doel vak

This course provides an overview of the development of economic thought as well as an insight into the relevance of economic theories for important current economic issues. In addition, students receive a broad introduction to the various fields of study of Economics and Business Economics. After successfully completing this course, the student can: Academic Skills: - explain the economic way of thinking; - identify fundamental questions in economics; - place economics as a discipline in relation to other social sciences. Bridging Theory and Practice - Knowledge: - describe the most important economic concepts; - explain the role of different institutions in the economic process; - identify the main differences and similarities between various economic schools; - appoint the different fields of study of the program. Bridging Theory and Practice - Application: - understand various forms of market and government failure; - analyze current policy proposals from an economic perspective. Broadening Your Horizon: - name the most important works of prominent thinkers in economic science; - situate economic theories in a social, political and historical context.

Inhoud vak

Economic theories do not come out of thin air. Crucial for this course is the insight that economists, both in the present and in the past, respond to the social, political and economic circumstances of their time. Their theories and policy proposals are not always in agreement with each other, which gives rise to the emergence of different paradigms and competing schools of thought. Studying the development of economic thought in its historical context is an excellent way to appreciate the richness of economics as a scientific tradition. Each lecture starts with the discussion of an important period in economic history, starting from classical antiquity up to modern times. Each lecture ends with the discussion of a current 'economic challenge'. The following topics will be discussed: climate change, markets and morality, Brexit, limits on growth, aging, sweatshops, market failure, influence of advertising, the Euro crisis, robotisation, nuclear threat and big data. The relevance of the theory to the contemporary debate is always demonstrated. Along the way, we introduce the most important works of leading thinkers in economics such as Adam Smith, Karl Marx, Alfred Marshall and John Maynard Keynes. The fact that their ideas about the correct way of research and policy-making differed greatly from each other underlines the philosophy of this course that tackling important social questions from different angles promotes the understanding of what economics is all about.

Aanvullende informatie onderwijsvormen

Lectures, tutorials, and Q&A lecture at the end of the course

Toetsvorm

Written exam and weekly tutorial assignments

Literatuur

- Robert L. Heilbroner, The Worldly Philosophers: The Lives, Times And Ideas Of The Great Economic Thinkers, Touchstone 7th Revised edition (August 1999) - Selection of original texts via Canvas - Lecture slides via Canvas -

Glossary via Canvas

Educatieve Minor Didactiek 1

Vakcode	O_EMDID1
Studiepunten	6
Periode	P1
Vakniveau	400
Onderwijstaal	Nederlands
Faculteit	Fac. der Gedrags- en Bewegingswetensch.
Vakcoördinator	drs. Y.G. Meindersma
Examinator	drs. Y.G. Meindersma
Betrokken Docenten	drs. N.H. Ypenburg, drs. W. Jongejan, drs. H.R. Goudsmit, dr. B. de Vries, J. Quartel MA, dr. C.D.P. van Oeveren, dr. I. Pauw, R.B. van der Vos, drs. L.J. van Well-van Grootheest, dr. S. Donszelmann, drs. L.A. van der Bruggen, M. Rahou MSc, C.L. Geraedts, dr. H.B. Westbroek, drs. Y.G. Meindersma, W. Maas, drs. A.J.C. Monquil, prof. dr. ir. F.F.J. Hermans, R.M.C. Canisius, drs. J.K.W. Riksen, dr. A. Handelzalts, drs. E.D. van Noort, dr. A.A. Kaal, dr. O.P.M. van Buuren, prof. dr. M. Meeter
Onderwijsvormen	Hoorcollege, Werkgroep

Doel vak

De cursus Didactiek 1 is onderdeel van de eerste fase (fase I) van de educatieve minor van de Universitaire Lerarenopleiding van de VU, en loopt parallel aan de cursus Praktijk 1. De cursus is breed van opzet en omvat verschillende onderdelen die in samenhang worden aangeboden: algemene didactiek (AD), vakdidactiek (VD) en peergroup (PG). Aan het eind van de cursus heeft de student de nodige basale algemeen didactische en vakdidactische bagage aan te reiken die nodig is voor het handelen als docent. Hierbij wordt nadrukkelijk aangesloten bij de ontwikkelingsfase waarin de docent-in-opleiding (dio) zich bevindt (zie inhoud).

Inhoud vak

De cursus is geordend rondom zogeheten kernpraktijken die fundamenteel zijn voor het beroep van docent. Bij Didactiek 1 staan de volgende kernpraktijken centraal: (1) contact maken, (2) de les starten (3) krediet opbouwen en uitgeven, (4) de les voorbereiden, (5) orde houden,(6) volledige instructie geven en de les afsluiten. De reikwijdte van het didactisch denken en handelen is in deze eerste fase meestal nog beperkt tot één les. De genoemde kernpraktijken komen expliciet aan de orde bij AD. Bij VD wordt aangesloten bij deze kernpraktijken en wordt de vertaalslag gemaakt naar het eigen (school)vak. Daarnaast worden bij VD belangrijke vakdidactische concepten en werkwijzen geïntroduceerd De ervaring leert dat de kernpraktijken die bij Didactiek 1 centraal staan bij de meeste dio’s uitgebreid aan de orde komen tijdens het eerste deel van de praktijkstage (Praktijk 1). Alle inhoudscomponenten uit deze cursus worden tijdens de bijeenkomsten en in verwerking verbonden met de werkplekpraktijk van de student. De dio en de werkplekbegeleider krijgen ook suggesties voor (observatie)opdrachten die kunnen bijdragen aan de ontwikkeling van de competenties die bij deze kernpraktijken horen.

Aanvullende informatie onderwijsvormen

Alle onderwijs vindt plaats op de instituutsdag (maandag). Studenten zijn de hele dag aanwezig. In de ochtend is er een hoor/werkcollege AD, waarbij dio’s van verschillende vakken samen zitten. De colleges AD worden steeds verzorgd door een tweetal docenten. Na het college AD volgt een PG bijeenkomst, waarbij de studenten van de educatieve minor van verschillende vakken in kleine groepen en onder begeleiding de eigen onderwijspraktijk onder de loep nemen en eventuele concerns daarbij bespreken. Ook is hier ruimte voor begeleiding bij het maken van de verwerkingsopdrachten die voor AD moeten worden gemaakt. In de middag is er een werkcollege VD onder begeleiding van de vakdidacticus. Deze colleges worden samen met dio’s van hetzelfde vak in verschillende samenstellingen (homogeen en heterogeen) gevolgd. Bij alle onderdelen (AD, VD en PG) wordt een actieve houding van de student gevraagd, zowel tijdens de bijeenkomsten als daarbuiten. Regelmatig worden er verwerkingsopdrachten gegeven, waar onder begeleiding aan wordt gewerkt. Deze opdrachten worden formatief geëvalueerd, onder andere door middel van (peer)feedback.

Toetsvorm

Didactiek 1 wordt afgesloten met een startproef waarin de studenten demonstreren dat zij één les kunnen ontwerpen en uitvoeren en kunnen reflecteren op de manier waarop voorbereiding, uitvoering en afronding hebben plaatsgevonden. De proef bestaat uit een lesontwerp (incl. verantwoording op basis van theorie, en eigen leerdoelen bij deze les), een videocompilatie (15 min.) van de gegeven les en een terugblik op de les. Bij het ontwerpen en uitvoeren van de les staan de kernpraktijken behandeld in de colleges algemene didactiek en

vakdidactiek centraal (met een focus op de les en de leerling). De terugblik op ontwerp en uitvoering vindt plaats aan de hand van de perspectieven van een docent als professional, ontwerper, uitvoerder, pedagoog en de daarbij behorende relevante theorie. De proef wordt beoordeeld aan de hand van een beoordelingsformulier gerelateerd aan de rubrics die voor elk van de docentperspectieven zijn geformuleerd voor fase I.

Literatuur

Bij deze cursus worden de volgende algemeen didactische handboeken gebruikt: - Ebbens, S. & Ettekoven, S. (2016). Effectief leren – basisboek. Groningen: Noordhoff Uitgevers B.V. - Korthagen, F. & Lagerwerf, B. (2014). Een leraar van klasse. Den Haag: Boom Lemma Uitgevers - Teitler, P. (2017). Lessen in orde. Bussum: Coutinho. - Kohnstamm, R. (2009). Kleine ontwikkelingspsychologie: III de puberjaren. Houten: Bohn Stafleu van Loghum. Oudere edities van bovenstaande boeken zijn over het algemeen goed bruikbaar. Behalve van bovenstaande literatuur wordt veelvuldig gebruik gemaakt van relevante en actuele wetenschappelijke literatuur. Deze artikelen worden tijdens de cursus ter beschikking gesteld. De literatuur die bij VD gebruikt wordt is afhankelijk van het schoolvak waarvoor wordt opgeleid.

Overige informatie

Beheersing van de inhoud van het desbetreffende schoolvak wordt als voorkennis verondersteld.

Educatieve Minor Didactiek 2

Vakcode	O_EMDID2
Studiepunten	9
Periode	P2+3
Vakniveau	400
Onderwijstaal	Nederlands
Faculteit	Fac. der Gedrags- en Bewegingswetensch.
Vakcoördinator	drs. Y.G. Meindersma
Examinator	drs. Y.G. Meindersma
Betrokken Docenten	drs. E.D. van Noort, drs. L.A. van der Bruggen, drs. A.J.C. Monquil, drs. L.J. van Well-van Grootheest, drs. W. Jongejan, dr. S. Donszelmann, dr. O.P.M. van Buuren, W. Maas, drs. J.K.W. Riksen, drs. N.H. Ypenburg, dr. A. Handelzalts, R.B. van der Vos, drs. H.R. Goudsmit, dr. A.A. Kaal, M. Rahou MSc, dr. B. de Vries, drs. J. Quartel MA, prof. dr. M. Meeter, prof. dr. ir. F.F.J. Hermans, R.M.C. Canisius, dr. H.B. Westbroek, dr. I. Pauw, drs. E.D. van Noort, C.L. Geraedts, drs. Y.G. Meindersma, J. Quartel MA, dr. C.D.P. van Oeveren
Onderwijsvormen	Hoorcollege, Werkgroep

Doel vak

De cursus Didactiek 2 is onderdeel van de tweede en laatste fase (fase II) van de Educatieve Minor van de VU, en loopt parallel aan de cursus Praktijk 2. De cursus omvat verschillende onderdelen die in samenhang worden aangeboden: algemene didactiek (AD), vakdidactiek (VD) en peergroup (PG). Aan het eind van de cursus heeft de student de nodige algemeen didactische en vakdidactische bagage aan te reiken die nodig is voor het handelen als docent. Hierbij wordt toegewerkt naar de competenties die horen bij een startbekwame tweedegraads docent in het domein onderbouw havo-vwo en vmbo-TL. Hierbij wordt nadrukkelijk aangesloten bij de ontwikkelingsfase waarin de docent-in-opleiding (dio) zich bevindt (zie inhoud).

Inhoud vak

De cursus is geordend rondom zogeheten kernpraktijken die fundamenteel zijn voor het beroep van docent. Bij Didactiek 1 staan de volgende kernpraktijken centraal: (1) contact maken, (2) de les starten (3) krediet opbouwen en uitgeven, (4) de les voorbereiden, (5) orde houden,(6) volledige instructie geven en de les afsluiten. De reikwijdte van het didactisch denken en handelen is in deze eerste fase meestal nog beperkt tot één les. De genoemde kernpraktijken komen expliciet aan de orde bij AD. Bij VD wordt aangesloten bij deze kernpraktijken en wordt de vertaalslag gemaakt naar het eigen (school)vak. Daarnaast worden bij VD belangrijke vakdidactische concepten en werkwijzen geïntroduceerd De ervaring leert dat de kernpraktijken die bij Didactiek 1 centraal staan bij de meeste dio’s uitgebreid aan de orde komen tijdens het eerste deel van de praktijkstage (Praktijk 1). Alle inhoudscomponenten uit deze cursus worden tijdens de bijeenkomsten en in verwerking verbonden met de werkplekpraktijk van de student. De dio en de werkplekbegeleider krijgen ook suggesties voor (observatie)opdrachten die kunnen bijdragen aan de ontwikkeling van de competenties die bij deze kernpraktijken horen.

Aanvullende informatie onderwijsvormen

Alle onderwijs vindt plaats op de instituutsdag (maandag). Dio's zijn de hele dag aanwezig. In de ochtend is er een hoor/werkcollege AD, waarbij dio’s van verschillende vakken samen zitten. De colleges AD worden steeds verzorgd door een tweetal docenten. Na het college AD volgt een PG bijeenkomst, waarbij dio’s educatieve MInor van verschillende vakken in kleine groepen en onder begeleiding, de eigen onderwijspraktijk onder de loep nemen en eventuele concerns daarbij bespreken. Ook is hier ruimte voor begeleiding bij het maken van de verwerkingsopdrachten die voor AD moeten worden gemaakt. In de middag is er een werkcollege VD onder begeleiding van de vakdidacticus. Deze colleges worden samen met dio’s van hetzelfde vak in verschillende samenstellingen (homogeen en heterogeen) gevolgd . Bij alle onderdelen (AD, VD en PG) wordt een actieve houding van de student gevraagd, zowel tijdens de bijeenkomsten als daarom heen. Regelmatig worden er verwerkingsopdrachten gegeven, waar in groepsverband aan wordt gewerkt. Deze opdrachten worden formatief geëvalueerd, onder andere door middel van (peer)feedback.

Toetsvorm

Didactiek 2 wordt afgesloten met een basisproef waarin de studenten demonstreren dat zij een korte lessenreeks kunnen ontwerpen en (deels) uitvoeren en kunnen reflecteren op de manier waarop voorbereiding, uitvoering en afronding hebben plaatsgevonden. De proef bestaat uit een docentenhandleiding bij de lessenreeks, gebaseerd op bestaand lesmateriaal, (incl. een globale planning, twee uitgewerkte lesontwerpen, verantwoording op basis van praktijk en theorie, en eigen leerdoelen bij deze lessen), een videocompilatie (15 min.) van de gegeven lessen en een terugblik op ontwerp en uitvoering en pedagogisch handelen. Bij het ontwerpen en uitvoeren van de les staan de kernpraktijken behandeld in de colleges algemene didactiek en vakdidactiek centraal (met een focus op de leerling en het leerproces). De terugblik op ontwerp en uitvoering vindt plaats aan de hand van de perspectieven van een docent als professional, ontwerper, uitvoerder en pedagoog en de daarbij behorende relevante theorie. De proef wordt beoordeeld aan de hand van een beoordelingsformulier gerelateerd aan de rubrics die voor elk van de docentperspectieven zijn geformuleerd voor fase II.

Literatuur

Bij deze cursus worden de volgende algemeen didactische handboeken gebruikt: - Ebbens, S. & Ettekoven, S. (2016). Effectief leren – basisboek. Groningen: Noordhoff Uitgevers B.V. - Korthagen, F. & Lagerwerf, B. (2014). Een leraar van klasse. Den Haag: Boom Lemma Uitgevers - Teitler, P. (2017). Lessen in orde. Bussum: Coutinho. - Kohnstamm, R. (2009). Kleine ontwikkelingspsychologie: III de puberjaren. Houten: Bohn Stafleu van Loghum. Oudere edities van bovenstaande boeken zijn over het algemeen goed bruikbaar. Behalve bovenstaande literatuur wordt veelvuldig gebruik gemaakt van relevante en actuele wetenschappelijke literatuur. Deze artikelen worden tijdens de cursus ter beschikking gesteld. De literatuur die bij VD gebruikt wordt is afhankelijk van het schoolvak waarvoor wordt opgeleid.

Overige informatie

Beheersing van de inhoud van het desbetreffende schoolvak wordt als voorkennis verondersteld. Voorwaardelijk voor afronding van Didactiek 2: een voldoende beoordeling van Didactiek 1.

Educatieve Minor Praktijk 1

Vakcode	O_EMPRAK1
Studiepunten	6
Periode	P1
Vakniveau	400
Onderwijstaal	Nederlands
Faculteit	Fac. der Gedrags- en Bewegingswetensch.
Vakcoördinator	drs. Y.G. Meindersma
Examinator	drs. Y.G. Meindersma
Betrokken Docenten	drs. L.J. van Well-van Grootheest, J. Quartel MA, prof. dr. M. Meeter, M. Rahou MSc, drs. A.J.C. Monquil, C.L. Geraedts, drs. L.A. van der Bruggen, dr. C.D.P. van Oeveren, R.B. van der Vos, W. Maas, dr. I. Pauw, drs. Y.G. Meindersma, drs. H.R. Goudsmit, dr. O.P.M. van Buuren, drs. E.D. van Noort, dr. A.A. Kaal, dr. S. Donszelmann, prof. dr. ir. F.F.J. Hermans, drs. E.D. van Noort, R.M.C. Canisius, drs. N.H. Ypenburg, dr. H.B. Westbroek, dr. A. Handelzalts, drs. J.K.W. Riksen
Onderwijsvormen	Werkcollege

Doel vak

Praktijkervaring opdoen in het lesgeven in het schoolvak in het vmbo- tl en/of onderbouw havo/vwo.

Inhoud vak

Het praktijkdeel van de educatieve Minor gaat meteen aan het begin van de opleiding van start. Het vak Praktijk 1 omvat ten minste 48 klassencontacturen in vmbo- tl en/of onderbouw havo/vwo. Tijdens de klassencontacturen observeert de student lessen, geeft de student lessen, of neemt de student deel aan andere leerlinggerichte activiteiten. Alle activiteiten die een student in de klas uitvoert, zijn erop gericht het eigen leerproces te voeden. De werkplekbegeleider (WPB) is op de hoogte van de onderwerpen die op de instituutsdag aan de orde zijn en gebruikt dezelfde rubrics als de instituutsopleiders en vakdidactici om de vorderingen van de studenten te beoordelen. Binnen de in totaal 120 klassencontacturen voor Praktijk 1 en Praktijk 2 worden ten minste 60 lessen door de student zelf verzorgd. Een onderdeel van het vak Praktijk is de peergroup (PG). De peergroup hoort bij het instituutsdeel van de opleiding. Bij de peergroup staat de eigen onderwijspraktijk van de leraar-in-opleiding (lio) centraal. Concrete vragen en situaties uit de praktijk vormen aanleiding tot analyse en reflectie. Waar bij AD en VD de nadruk ligt op de rollen van de uitvoerende en ontwerpende docent en pedagoog, wordt bij PG nadrukkelijk vorm gegeven aan de rol van onderzoekende professional. Ook op de opleidingsschool zullen intervisiebijeenkomsten plaatsvinden. Die bijeenkomsten zijn onderdeel van het praktijkdeel van de opleiding.

Aanvullende informatie onderwijsvormen

Onder begeleiding van de werkplekbegeleider nemen de studenten steeds een groter en actiever aandeel in het lesgeven en werken in de school. Studenten met een (beperkte) baan geven in dit stadium al zelfstandig les. Bij deze studenten ligt de nadruk bij de begeleiding vanuit de werkplekbegeleider op het niveau van didactische handelen in de les.

Toetsvorm

Op de school geven de studenten een presentatie over hun prestaties in de eerste acht weken. Dat doen ze aan de hand van de relevante rollen (waarbij de rol van uitvoerder, ontwerper en pedagoog de meeste aandacht krijgen bij de reflectie op het lesgeven). De werkplekbegeleider gebruikt het beoordelingsformulier gerelateerd aan de rubrics om het functioneren van de student in de klas tijdens Praktijk 1 te evalueren.

Educatieve Minor Praktijk 2 Semester 1

Vakcode	O_EMPRAK2
Studiepunten	9
Periode	P2+3
Vakniveau	400
Onderwijstaal	Nederlands
Faculteit	Fac. der Gedrags- en Bewegingswetensch.
Vakcoördinator	drs. Y.G. Meindersma
Examinator	drs. Y.G. Meindersma
Betrokken Docenten	drs. J.K.W. Riksen, dr. B. de Vries, J. Quartel MA, dr. A.A. Kaal, dr. S. Donszelmann, drs. L.A. van der Bruggen, drs. A.J.C. Monquil, R.M.C. Canisius, drs. E.D. van Noort, drs. L.J. van Well-van Grootheest, dr. I. Pauw, C.L. Geraedts, dr. H.B. Westbroek, dr. C.D.P. van Oeveren, drs. N.H. Ypenburg, M. Rahou MSc, drs. E.D. van Noort, R.B. van der Vos, prof. dr. ir. F.F.J. Hermans, prof. dr. M. Meeter, dr. A. Handelzalts, drs. H.R. Goudsmit, drs. Y.G. Meindersma, W. Maas, dr. O.P.M. van Buuren
Onderwijsvormen	Werkcollege

Doel vak

Praktijkervaring opdoen in het lesgeven in het schoolvak in het vmbo- tl en/of onderbouw havo/vwo.

Inhoud vak

Tijdens de Praktijk 2 werken studenten aan het verder ontwikkelen van de kernpraktijken die in het instituutsdeel aan de orde zijn gekomen. Het vak Praktijk 2 omvat ten minste 72 klassencontacturen. Net als in Praktijk 1 komt de verbinding tussen theorie en praktijk aan de orde. De student verzorgt lessen en werkt aan opdrachten om aan te kunnen tonen dat hij startbekwaam is. De colleges tijdens de instituutsdag ondersteunen dit ontwikkelingsproces. Binnen de in totaal 120 klassencontacturen voor Praktijk 1 en Praktijk 2 worden ten minste 60 lessen in vmbo-tl en/of onderbouw havo/vwo door de student zelf verzorgd Een onderdeel van het vak Praktijk is de peergroup (PG). De peergroup hoort bij het instituutsdeel van de opleiding. Bij de peergroup staat de eigen onderwijspraktijk van de leraar-in-opleiding (lio) centraal. Concrete vragen en situaties uit de praktijk vormen aanleiding tot analyse en reflectie. Waar bij AD en VD de nadruk ligt op de rollen van de uitvoerende en ontwerpende docent en pedagoog, wordt bij PG nadrukkelijk vorm gegeven aan de rol van onderzoekende professional. Ook op de opleidingsschool zullen intervisiebijeenkomsten plaatsvinden. Die bijeenkomsten zijn onderdeel van het praktijkdeel van de opleiding.

Aanvullende informatie onderwijsvormen

Aanvullende informatie onderwijsvormen

Onder begeleiding van de werkplekbegeleider nemen de studenten steeds een groter en actiever aandeel in het lesgeven en werken in de school.

Toetsvorm

De praktijkbeoordeling wordt uitgevoerd door de instituutsopleider samen met de schoolopleider en de werkplekbegeleider. De beoordeling wordt uitgevoerd aan de hand van lesbezoek, de uitgevoerde lessen en activiteiten op de school en het ingevulde beoordelingsformulier gerelateerd aan de rubrics die voor elk van de docentperspectieven zijn geformuleerd voor fase II.

Overige informatie

Voorwaardelijk voor afronding van Praktijk 2: een voldoende beoordeling van Praktijk 1 en Didactiek 1.

Emerging Technologies for E-Business and Online Commerce

Vakcode	E_IBA3_ETEOC
Studiepunten	6
Periode	P3
Vakniveau	300
Onderwijstaal	Engels
Faculteit	School of Business and Economics
Vakcoördinator	dr. J.C. Lehmann MSc
Examinator	dr. J.C. Lehmann MSc
Betrokken Docenten	dr. J.C. Lehmann MSc
Onderwijsvormen	Werkcollege, Hoorcollege

Doel vak

BRIDGING THEORY AND PRACTICE KNOWLEDGE: Demonstrates theoretical and empirical knowledge concerning the relevant areas in international business administration After successfully completing this course, the student: • Can discuss, contrast, and compare theories and concepts pertinent to E-business and online commerce discussed in the preceding courses. • Can critically describe and evaluate the pros and cons of applying recent technologies in E-business and online commerce processes. • Can describe the most important managerial implications of emerging digital technologies for E-business and online commerce. APPLICATION: Can propose a solution to an international real-life business problem by applying relevant theories and methodologies. After successfully completing this course, the student: • can give concrete advice concerning the feasibility and meaningfulness of the use of emerging digital technologies for transforming existing businesses and industries. SOCIAL SKILLS – STUDENTS ARE ABLE TO EFFECTIVELY MANAGE DIFFERENT PROFESSIONAL ROLES IN A CROSS-CULTURAL ENVIRONMENT After successfully completing this course, the student: • can formulate and present (both orally and in writing) relevant aspects of digital technology and e-business to various audiences

Inhoud vak

This course focuses on the role of emerging digital technologies in supporting and transforming organizations' E-business and online commerce. Based on the knowledge gained in the first four courses of this minor, students will apply theoretical knowledge to determine the potential of an emerging digital technology for a specific industry. They will develop an application and probe ways in which a new technology can be employed to transform a traditional industry sector. They will develop countermeasures to overcome identified barriers. The technology at hand will be selected by the course coordinators. The analysis will focus on questions like: - What is the potential value of the technology in supporting organizations' E-business and online commerce activities? - How can the technology be used to transform the industry and organizational processes? - What are the demands and consequences of applying this technology in terms of consumer interaction, logistics, information systems and other relevant aspects? - To what extent is applying this technology feasible in terms of costs, benefits, fit with the current enterprise architecture, business processes, consumer preferences, etcetera? The outcome of this analysis is a written report in which a concrete advice is given in terms of the feasibility of this technology, and sheds light on the different aspects of logistics and fulfilment as well as marketing, technology and data, and insights for the e-business solution. Although academic fundamentals should be applied, this business case has a highly relevant practical component as well. Intermediate presentations and assignments will be used to track students' progress

Aanvullende informatie onderwijsvormen

Lectures Tutorials

Toetsvorm

Written Assignment - Group Assessment Presentation - Group Assessment Participation - Individual Assessment

Vereiste voorkennis

This course is part of the minor E-business and Online Commerce. Students should at least be familiar with the content of 'Introduction to E-business and Online Commerce' and 'Consumer Science for Online Commerce'

Literatuur

Various papers that will be made available via Canvas.

Aanvullende informatie doelgroep

This minor can be followed by all SBE bachelor students. In addition, advanced bachelor students (third year) from other faculties as well as other universities are welcome to join. Particularly those with in an interest in Business and Organization Studies, Digital Technology, Entrepreneurship, Economics, Social Sciences, Social Psychology, Healthcare, Media and Communication Studies, Engineering, Technology Management, Operations Management and Education. It is especially interesting for: - Future managers who want to understand how Emerging Technologies can be implemented in existing business - Entrepreneurs that want explore and exploit the opportunities Emerging Technologies offer for E-business and online commerce - Future consultants in E-business and online commerce, strategic business consultants, or government policy consultants

Overige informatie

This course is part of the minor E-business and Online Commerce.

Aanbevolen voorkennis

Courses in period 1 and 2 of the Minor E-business and Online Commerce

English Language Test

Vakcode	VU_ELT
Studiepunten	0
Periode	P1
Vakniveau	0
Onderwijstaal	Engels
Faculteit	
Vakcoördinator	
Examinator	
Betrokken Docenten	
Onderwijsvormen	

Overige informatie

The language proficiency test is for all first-year bachelor’s students. The test assesses whether your language proficiency in English is high enough for embarking on an academic career. The test focuses on the following topics: grammar, spelling and punctuation, structure, vocabulary/usage and formulation. The English language proficiency test also includes: reading comprehension, pronunciation and classroom English. You receive a score of High, Medium or Low. If your score is Low, you will have to take the English refresher course. You will only receive your credits for the first-year course that the test is a part of once you have completed the test or the refresher course with a pass mark. Therefore, participation in the refresher course is by no means optional! For more information about the language proficiency test, see: https://www.vu.nl/en/programmes/links/language-test.aspx Non-standard registration procedure The faculty registers you for this course. After, check your personal schedule to see when you have to take the test.

Environment and Development

Vakcode	S_ED
Studiepunten	6

Periode	P1
Vakniveau	200
Onderwijstaal	Engels
Faculteit	Faculteit der Sociale Wetenschappen
Vakcoördinator	drs. W.A.M. Tuijp
Examinator	drs. W.A.M. Tuijp
Betrokken Docenten	drs. W.A.M. Tuijp, drs. S.L. Di Prima MSc
Onderwijsvormen	Hoorcollege

Doel vak

The aim of the Environment & Development course is to enable you as student to examine and critically reflect on the relationships between economic and social development, and the environment. After completion of the course you are able to: recognise and describe the current and potential impacts of the major international environmental concerns; recognise, analyse and explain the complexities of environmental issues related to development at a global level; distinguish, analyse and explain different perspectives on environmental problems and possible solutions; recognise organisational and governance issues related to environment and development and be able to think through their consequences for actual practices. Moreover as a student you learn to find, analyse and critically reflect on scientific literature within a relevant topic and become a projectteam member in a research environment, presenting and discussing the researched topic to an audience.

Inhoud vak

What do we mean by the concepts of environment and development and how are the two related? What are the causes and consequences of global environmental change? How is the global community dealing with ecological problems? How can the world adequately feed more than 9 Billion people by 2050? Is sustainable development, with its notions of environmental 'friendliness', really achievable? During the course we will address these and other critical and societally relevant questions. The course takes a multi- and interdisciplinary perspective and looks both at: (1) Global Issues - such as environment-trade-poverty links; and (2) Local Issues - focusing on land degradation, deforestation, water scarcity and how these have an impact on human development. The E&D course comprises a series of lectures by both VU staff as well as guest lecturers from academia, NGOs and the private sector. By means of illustrated case studies from all over the world students learn to appreciate the complexity and interlinked nature of environmental and development issues at both global and local levels. Furthermore we encourage students to develop their own (critical)opinion regarding current (and potential) international environmental challenges and their impacts.

Aanvullende informatie onderwijsvormen

(Guest) Lectures, working group assignments and exercises, tutorials.

Toetsvorm

mix of group assigments and individual assignments

Literatuur

Each week, a selection of articles will be posted on Canvas to be studied in advance, check the course manual also (on Canvas). For background reading on the key concepts in this class we will use "Paths to a Green World: the political economy of the global environment" by Jennifer Clapp and Peter Dauvergne (2011) 2nd edition. Cambridge - MIT Press.

Aanvullende informatie doelgroep

The E&D course is for all third year VU bachelor students, including exchange students. Students outside the VU, such as UvA, are also welcome to join the Environment & Development course.

Overige informatie

Comments from former students: "Thanks a lot for the course, I have learned so much and will recommend it to others!" "Being split into groups at the very beginning made it much easier for me to meet people and make friends amongst my course mates." "Having never been on a field trip at university before it was an interesting experience and nice to be able to see parts of Amsterdam I may have not discovered alone." "Eye-opening to very important topics by multiple (guest) lecturers and a lot of additional info"

Aanbevolen voorkennis

Interest in environmental issues and social questions

Equational Programming

Vakcode	X_401011
Studiepunten	6
Periode	P2
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. F. van Raamsdonk
Examinator	dr. F. van Raamsdonk
Betrokken Docenten	dr. F. van Raamsdonk
Onderwijsvormen	Hoorcollege, Deeltentamen schriftelijk, Practicum, Werkcollege

Doel vak

The goal of the course is to obtain basic knowledge on the foundations of functional programming via lambda calculus and equational reasoning, and to acquire basic functional programming skills. For the lambda calculus part: At the end of the course, the student is familiar with the notions reduction, fixed points, reduction strategy, confluence, normalization, data type encoding, simple types and typability. The student is able to give and analyze reduction sequences and reduction graphs, to encode basic data types and recursive functions in the untyped lambda calculus, to give typing derivations in the simply typed lambda calculus. For the equational specifications part: At the end of the course, the student is familiar with the notions equational system, (syntactic) derivability, (semantical) consequence, Birkhoff's theorem, initial model, isomorphisms, initially correct specification. The student is able to define an equational specification, to give a derivation, to analyze algebra's with respect to being a model, containing junk or confusion, being an initial model, to analyze homomorphisms and isomorphisms. For the functional programming part: At the end of the course, the student is familiar with the basics of the functional programming language Haskell: pattern matching, recursive functions, algebraic data types, and with the basics of monads. The student is able to write small Haskell programs with pattern matching, recursion, and is able to deal with partial functions using monads.

Inhoud vak

In the practical work we use the functional programming language Haskell. We practice with the basics such as lists, recursion, data-types, and a bit of monads. The theoretical part is concerned with the foundations of functional programming in the form of lambda calculus and equational reasoning. We study in untyped lambda calculus reduction theory and expressive power: beta reduction, reduction strategies, confluence, encoding of data-types, fixed point combinators and recursive functions. In addition we study the lambda-calculus with simple types, its typing system and a type inference algorithm, and possibly strong normalization of simply typed lambda-calculus. In equational specifications part we study the syntax and semantics of equational systems, and we work towards the results that all initial models are equal up to isomorphism, and that the term model is an initial model.

Aanvullende informatie onderwijsvormen

There are two lectures and two exercise classes per week which are concerned with the theoretical part of the course. In addition, during the first six weeks we have one programming afternoon per week.

Toetsvorm

There is a written exam which contributes for 75 % to the final grade, and there is a programming part consisting of three sets of Haskell programming exercises which contribute for 25 % to the final grade, with the additional proviso that both the grade for the written exam and the grade for the programming part must be at least 5.5 in order to obtain a passing grade for the course. The written exam is mainly concerned with the subjects lambda calculus and equational specifications, equally divided. A small part of the exam (at most 10 %) may be about Haskell. There are non-obligatory homework exercises concerned with the theoretical part which yield a bonus of at most 0.5 on the grade for the written exam. There is a resit for the written exam. The programming part consists of three sets of Haskell programming exercises which are handed in via Canvas and contribute equally to the grade for the programming part. It may be asked to explain the program in an individual meeting. There is only a resit possibility for the programming part for those students who obtained at least grade 3 (for three assignments together).

Literatuur

Course notes.

Aanvullende informatie doelgroep

3CS, 3LI, 3IMM, 3W

Overige informatie

This course is part of the minor Deep Programming.

Afwijkende intekenprocedure

The registration procedure is the standard one.

Toelichting Canvas

The schedule, slides for the lectures, material for the exercise classes, and programming assignments are available via the Canvas page of the course.

Aanbevolen voorkennis

For the theoretical part familiarity with formal reasoning as for example taught in the cours e Logic and Modelling is helpful.

Ethics

Vakcode	W_BA_ETEN
Studiepunten	6
Periode	P2
Vakniveau	100
Onderwijstaal	Engels
Faculteit	Faculteit der Geesteswetenschappen
Vakcoördinator	dr. L. Bastian
Examinator	dr. L. Bastian
Betrokken Docenten	dr. L. Bastian
Onderwijsvormen	Hoorcollege, Werkcollege

Doel vak

1 Acquire a broad understanding of the most influential theories within the field of normative ethics, including utilitarianism, deontology, and virtue ethics. 2 Acquire a broad understanding of the most influential theories within the field of meta-ethics, including relativism, moral realism, skepticism and theories of moral responsibility. 3 Understand the relative advantages and disadvantages of these theories. 4 Use insights from various theories in normative ethics to analyze contemporary moral problems. 5 Creatively express this knowledge and understanding in the context of a short, accessible, spoken exercise that takes the form of a podcast episode.

Inhoud vak

Ethics is a branch of philosophy that focuses on questions, such as “In virtue of what are actions right or wrong (morally obligatory, morally permissible, or morally impermissible)?”, “What makes a certain state of affairs good or bad?”, and “What constitutes a good life?”. In this course, we will critically explore different theories that have been developed which offer answers to these questions. Along the way spend time examining how these ethical theories apply to contemporary moral issues, such as abortion, animal welfare, famine relief, and many others. A related issue that we examine is whether we are morally responsible for our actions, in the sense of being praise- or blameworthy for them. We also discuss several epistemic, metaphysical and semantic questions, such as whether we can know moral claims, whether they are objectively rather than relatively true, and what their semantic features are.

Aanvullende informatie onderwijsvormen

Course is six weeks long: Lectures: three hours, twice a week Workgroups: two hours, once a week. Attendance required.

Toetsvorm

Quizzes: 25% Final exam: 50% Practical assignment: 25%

Literatuur

Literatuur

Required textbook: Russ Shafer-Landau - The Fundamentals of Ethics 4th edition ISBN: 9780190631390

EU Governance in an International Context

Vakcode	S_EUGIC
Studiepunten	6
Periode	P2
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Sociale Wetenschappen
Vakcoördinator	dr. O. Terzi MSc
Examinator	dr. O. Terzi MSc
Betrokken Docenten	dr. O. Terzi MSc, prof. dr. W.M. Wagner
Onderwijsvormen	Studiegroep, Hoorcollege

Doel vak

Knowledge and understanding – The student has acquired knowledge and understanding of: (1) the history of European integration and the main theories trying to understand and explain the process of European unification; (2) the institutional structure of and politics within European Union and how it interacts with member states; (3) key aspects of EU policy making in the internal and external arena. (2) Application – The student has acquired the competences to: (4) recognise the key historical milestones of European integration and the current challenges the EU faces currently when it comes to its institutional and political make-up; (5) apply a variety of theoretical approaches to understand and explain past and current developments. Making judgements – The student is able to: (6) critically reflect upon the European integration process, the EU's institutions and policies as well as the way democracy functions at the EU level.

Inhoud vak

This course familiarizes students to the way the EU operates, its institutional architecture, its history, and its modes of decision-making. The course highlights how EU decision-making affects domestic politics, whilst at the same time is situated in a broader, international context. It will introduce students to the key theoretical debates about the European integration process (neo-functionalism, liberal intergouvernmentalism, etc.), and it will pay special attention to the main characteristics of EU decision-making. The theoretical and practical insights will then be applied in a number of selected policy domains involve both policy making within the EU (e.g. monetary integration, regulation of the single market, making of common foreign and security policy) and outside the EU, that is to say the EU's engagement in the global realm (e.g. enlargement, trade, security).

Aanvullende informatie onderwijsvormen

Lectures

Toetsvorm

written exam.

Literatuur

Cini M. and N.Perez-Solorzano Borragan (2019).European Union Politics, Oxford: Oxford University Press. Additional articles to be announced in the course manual (see CANVAS).

Aanvullende informatie doelgroep

2nd year Bachelor students in Political Science and Bestuur & Organisatie (Afstudeerrichting Bestuurswetenschappen) Also open as an elective course for VU-students and Exchange students.

Afwijkende intekenprocedure

You do have to register for the course!

Toelichting Canvas

For more information on the course and most recent updates, please visit the Canvas site.

European History 1500-1800

Vakcode	L_GABAGES122
Studiepunten	3
Periode	P2
Vakniveau	100
Onderwijstaal	Engels
Faculteit	Faculteit der Geesteswetenschappen
Vakcoördinator	dr. E. Hagen
Examinator	dr. E. Hagen
Betrokken Docenten	dr. H.M.E.P. Kuijpers, dr. P.H. Moser, dr. E. Hagen
Onderwijsvormen	Hoorcollege, Werkcollege

Doel vak

To provide students with knowledge about and insight in the most important aspects of early modern European History. Acquaint students with different types of source material.

Inhoud vak

When does the early modern period start? This intriguing question is still debated. Fact is that around the year 1500 a number of developments set in that further shaped, but also changed Europe fundamentally. What to think of the Reformation, which tore apart the ‘unity’ in the Church and divided Europe deeply. This was also the era of Europe’s serious overseas expansion, with dramatic consequences for the economies of Europe and people all over the globe. European’s curiosity was not confined to discovering the globe, as scientists fundamentally challenged ideas and notions about the nature of the cosmos and its functioning. New ideas were also applied to the notions of man and governance during the period of Enlightenment, and they posed a threat to the Ancien Regime with its absolutist tendencies, ultimately leading to democratic revolutions in a number of states. All these themes are highlighted during this course.

Aanvullende informatie onderwijsvormen

A weekly lecture and a weekly seminar.

Toetsvorm

Assignments (25%) and a written exam (75%).

Aanvullende informatie doelgroep

Obligatory for BA1 Geschiedenis and History & International Studies students. Recommended for students with a serious interest in early modern European History. Course is open for exchange students.

European History 500-1500

Vakcode	L_GABAGES120
Studiepunten	3
Periode	P1
Vakniveau	100
Onderwijstaal	Engels
Faculteit	Faculteit der Geesteswetenschappen
Vakcoördinator	prof. dr. F.A. van Lieburg
Examinator	prof. dr. F.A. van Lieburg
Betrokken Docenten	dr. mr. D.P.H. Napolitano
Onderwijsvormen	Hoorcollege, Werkcollege

Doel vak

To provide students with knowledge about and insight in the most important aspect of the history of particularly Europe in the period knwon as 'The Middle Ages', when Europe and its culture as we know it slowly started taking shape.

Inhoud vak

After the fall of the Western Roman Empire, large parts of Europe had to reinvent themselves, confronted with changed economic circumstances that changed society fundamentally. At the same time Christianity started to play an ever more important role in this society as it spread across the continent and assumed the role of the only seriously functioning institution in this new society, with an ever greater grip on believers. This was the era that also saw the emergence of the European urban landscape in the high Middle Ages, the formation of states, and typically European institutions as Estates and universities. The later Middle Ages saw a dramatic population decline after which the foundations were once again laid for further growth that lead to innovation and the beginning of European Expansion. Al these themes are highlighted during this course.

Aanvullende informatie onderwijsvormen

A weekly lecture and a weekly seminar.

Toetsvorm

Assignments (25%) and a written exam (75%).

Literatuur

Wim Blockmans & Peter Hoppenbrouwers, Introduction to Medieval Europe, 300-1500 (London 2014, second edition)

Aanvullende informatie doelgroep

Obligatory for first year Geschiedenis and History & International Studies students. Recommended for other students with a serious interest in medieval history.

Evolutionary Genetics

Vakcode	AB_1022
Studiepunten	6
Periode	P3
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. J.M. Kooter
Examinator	dr. J.M. Kooter
Betrokken Docenten	dr. J.M. Kooter
Onderwijsvormen	Computerpracticum, Werkcollege, Hoorcollege

Doel vak

Course objectives: At the end of the course, the student • is able to describe and explain the dynamic nature of genomes and the underlying molecular mechanisms in relation to molecular evolution • can describe the regular mechanisms of transcriptional and post-transcriptional gene regulation and how genetic variation can affect these processes in relation to new traits and adaptation • can describe how natural selection, genetic drift, and migration influence the genetic structure of populations and speciation • is able to explain the various selection mechanisms • is able to explain the basic concepts of population and quantitative genetics and apply those mathematically • can interpret and determine phylogenetic relationships and is able to use computer programs for the construction of phylogenetic trees • is able to describe current hypotheses of 'the origin of life' and to discuss the evidence

Inhoud vak

To achieve the course objectives, the following topics will be discussed: • Causes and mechanisms of genetic variation at nucleotide, gene, and chromosomal level in pro- and eukaryotes • Horizontal DNA transfer • Evolutionary consequences of genome evolution and sex • Causes of Speciation • Molecular evolution of viral and bacterial pathogens • 'Origin of life' models • The use of bioinformatics and comparative genomics • Population genetics: allele frequencies in relation to selection and genetic drift • Use of genetic variation to examine stochastic and deterministic processes • Selection mechanisms • Application of simple mathematical rules to examine the behavior of alleles of one and two loci in ideal populations, and for genes with a quantitative effect. • Reconstruction of phylogenetic trees using DNA sequences and cladistic computer programs • Evolution - Development (Evo-Devo)

Aanvullende informatie onderwijsvormen

Aanvullende informatie onderwijsvormen

• Lectures and literature discussions by students (ca 50 hr) • Working groups and assignments (ca 8 hr, mandatory) • Literature presentation (ca 10 hr, mandatory) • Computer practical (ca 12 hr, mandatory) • Weblectures on specific topics • Self study (ca 85 hr)

Toetsvorm

- Written exam; 80% of final grade - Literature presentation on Evolution-related subject; 20% of final grade To pass, grades for both assessments should be ≥ 5,5

Vereiste voorkennis

Genetics, Molecular genetics, and Developmental Biology are subjects the student should be familiar with.

Literatuur

• Book: 'Evolutionary Analysis', Scott Freeman and Jon C. Herron, Fifth Edition, 2015, Pearson, Prentice Hall • Research and overview articles of subjects that are not thoroughly discussed in the book. These will be provided via the Canvas site of the course.

Aanvullende informatie doelgroep

Students of the Minor ‘Evolutionary Biology and Ecology’, and other third-year BSc students Biology, Biomedical Sciences, Bioinformatics and Systems Biology, Health and Life Sciences

Overige informatie

This minor course requires a minimum of 20 participants to take place.

Afwijkende intekenprocedure

Enrollment through studentportal: Vunet.vu.nl

Aanbevolen voorkennis

Basic genetics and molecular biology

Evolutionary Psychology

Vakcode	P_BEVOLPS
Studiepunten	6
Periode	P1
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Fac. der Gedrags- en Bewegingswetensch.
Vakcoördinator	prof. dr. M. van Vugt
Examinator	prof. dr. M. van Vugt
Betrokken Docenten	mr. G.F. Palomo Velez, prof. dr. M. van Vugt
Onderwijsvormen	Hoorcollege

Doel vak

The course will introduce students to the main concepts, theories and studies in the growing discipline of Evolutionary Psychology. The goal is to give students insight into topics central in Psychology from an Evolutionary point of view. Central in this course is whether certain behaviors could be the results of an evolved adaptation to solve problems that our ancestors faced. Possible costs and benefits of these suspected adaptations will then be discussed. During the course we will provide some insights into the following questions: - Why do we have such big brains? - Why do men want to have sex sooner than women? - Why do we help others? - Why do we make war?

Inhoud vak

This course shows students how to explain human behavior from an evolutionary perspective. During the course we will use this perspective to explain sexuality, cooperation, parenting, aggression, and cognition. The course consists of lectures and students will also do several assignments to practice evolutionary theorizing.

Aanvullende informatie onderwijsvormen

Lectures and assignments.

Toetsvorm

Exam with 60 multiple choice questions (80% of grade) and two open-ended questions (20% of grade). The assignments may also count for a small percentage of the final grade.

Literatuur

Buss, D. M. (2014). Evolutionary Psychology: The New Science of the Mind (fifth edition). US: Pearson Education.

Overige informatie

As of 2018-19 this course is part of the University Minor Psychologie en het Brein. There is room for max 80 Univeristy minor students.

Exploring a Profile: Introduction Qur'an and Sunna

Vakcode	G_BATRSPC103
Studiepunten	6
Periode	P1
Vakniveau	100
Onderwijstaal	Engels
Faculteit	Faculteit Religie en Theologie
Vakcoördinator	dr. Y. Ellethy
Examinator	dr. Y. Ellethy
Betrokken Docenten	dr. Y. Ellethy
Onderwijsvormen	Hoorcollege

Doel vak

De student kent op hoofdlijnen de ontstaansgeschiedenis, de indeling en de thematiek van de Koran en de Hadith. Dat wil zeggen dat de student: • beknopt uitleg kan geven over visies op de geschiedenis van de Goddelijke openbaring in het algemeen en de openbaring van de Koran aan de profeet Mohammed in het bijzonder, en deze vergelijken met andere religieuze tradities met het oog op dialoog; • de ontstaansgeschiedenis, de verzameling en de verspreiding van de Koranische tekst in hoofdlijnen kent, kan analyseren en logisch redeneren; • de westerse discussies en kritiek i.v.m de historische ontwikkeling van de tekst van de Koran kent en hierop kan reageren op een wetenschappelijke manier; • de algemene kenmerken, inhoud, stijl en historische context van de Koran in hoofdlijnen kent; • fundamentele kennis omtrent de terminologie van de Koranwetenschappen (en basiskennis van de Soenna en Hadith terminologie) heeft; • de geschiedenis en de ontwikkeling van de Koran- en Hadithwetenschappen en de betreffende klassieke en moderne literatuur in grote lijnen kent, en literatuuronderzoek kan doen blijkend uit schrijfopdrachten en presentaties; • een werkstuk van enkele pagina’s kan schrijven over de positie van de Koran en de Soenna binnen de Islam, het belang hiervan kan uiteenzetten in een bredere maatschappelijke of wetenschappelijke context.

Inhoud vak

In deze cursus (met meer focus op de Koranwetenschappen) worden gezaghebbende visies op de geschiedenis van de openbaring, de verzameling en de ontstaansgeschiedenis van de Korantekst, de betreffende kritiek, en de belangrijkste kernpunten en terminologie binnen de Koranwetenschappen ʿulūm al-Qur'ān behandeld. De student krijgt ook basiskennis van de positie van de Soenna binnen de Islam, het ontstaan en de ontwikkeling van de Hadith wetenschappen, terminologie en klassieke literatuur. In de module Hadith-wetenschappen zal meer nadruk worden gelegd op de Soenna en Hadithmethodologie.

Aanvullende informatie onderwijsvormen

Hoor- en werkcolleges met schriftelijke opdrachten en tussentijdse papers. Er wordt aandacht gegeven aan de interactieve deelname van de studenten. Vragen worden aan het begin van het college besproken. In aansluiting op elk hoorcollege-onderdeel wordt een werkstuk gepresenteerd, in werkgroepen besproken en beoordeeld.

Toetsvorm

Schriftelijk (eventueel online met proctoring) tentamen (80%); schrijfopdracht’ (20%)

Vereiste voorkennis

Geen

Literatuur

Verplichte literatuur: Al-A'ẓami, M., The History of the Quranic Text from Revelation to Compilation, Leicester: UK Islamic Academy, 2003. Leemhuis, F. "Koran"; "Soenna", in J. Waardenburg (ed.), Islam: Norm, Ideaal en Werkelijkheid. Houten: Fibula, 20005 , pp. 54-74; 75-79. (Canvas). Ljamai, A., Inleiding tot de Studie van de Koran, Zoetermeer: Meinema, 2005, hoofdstukken 1, 2, 3 en 4 t/m p. 71. Watt, M. (et al.), Bells Inleiding tot de Koran, Utrecht: de Ploeg, 1986, hoofdstukken 1 en 2 t/m p. 39. Nederlandse Koranvertaling. Aanbevolen literatuur: Ali, M., Sirat Al-Nabi and the Orientalists, Madinah: King Fahd complex for the Printing of the Quran, 1997 (Section IV: Receipt of Way). Hamidullah, M., An Introduction to the Conservation of Hadith in the Light of the Sahifah of Hammam ibn Munabbih, Kuala Lumpur: Islamic Book Trust, 2003. Verdere literatuur wordt voor aanvang van het college bekend gemaakt via Canvas.

Overige informatie

Aanwezigheid 80%.

Foundations of Business Administration

Vakcode	E_MB_FBA
Studiepunten	6
Periode	P1
Vakniveau	100
Onderwijstaal	Engels
Faculteit	School of Business and Economics
Vakcoördinator	dr. V. Duplat
Examinator	dr. V. Duplat
Betrokken Docenten	
Onderwijsvormen	Werkgroep, Hoorcollege

Doel vak

Students learn to apprehend real-world business situations by applying specific theoretical perspectives or using related analytic tools. In particular, after following the course students: • Have an advanced understanding of the traditional and emerging theoretical frameworks and concepts developed for studying organizations (foundational knowledge), • Are able to adopt theoretical frameworks and apply tools to real-world situations and organizations (application), • Are able to report, expose and defend their analyses and business recommendations, both verbally (report) and orally (presentation) (critical, creative and practical thinking), and • Are able to work in small teams and properly allocate tasks among team members under time pressure (Consulting project). Therefore, besides the content-centered objectives and goals, the course has for objectives to impact students' critical thinking, creativity in their problem solving approach. Critical thinking in which students analyze and evaluate; creative thinking in which students imagine and create; practical thinking in which students solve problems and make decisions. By the end of the course, students have had the opportunity to approach business situations or contexts they are familiar with by using concepts and frameworks aimed at understanding those situations and contexts and innovating them.

Inhoud vak

New approaches to business and management constantly emerge. The course on the Foundations of Business Administration provides insights on traditional and new business approaches, while adopting an even-handed appreciation for theory and practice. The course familiarizes the students with the three main theoretical perspectives on organizations - Modern, Symbolic and Post-modern perspectives - and presents analytical tools rooted in those perspectives. It puts the students in a situation where those tools must be used for providing ideas to be explored by a real-world firm. These lectures are organized in five parts: (1) introduction of the three perspectives and their assumptions over time; (2) interdependency between organizations and their environment; (3) organizational social structure and organizational culture; (4) technology and physical structure of organizations; and (5) organizational power, control and conflict. Throughout the lectures, each perspective, concept and analytical tool is presented by referring to real-world and current business situations.

Aanvullende informatie onderwijsvormen

The course combines lectures and tutorials. The tutorials involve groups of 20 to 25 students. These latter tutorials combine case studies, round-table discussions about recent academic, business and press articles, role-games

and making videos. A key objective is for you to develop your own personal synthesis and approach for identifying and addressing problems that managers face in organizations. Needless to say, preparing before attending classes gives you the best way to practice in lieu of actually designing and managing organizations. Throughout the tutorials, students will apply the theoretical frameworks and analytical tools introduced in the lectures to real-world organizations and situations.

Toetsvorm

Three group assignments under the form of a Consulting project (oral presentation, video-making, two interviews and written reports), a final written exam.

Literatuur

- Murphy, Willmott and Daft (2017, 3rd edition) “Organization theory and design: an international perspective” is used as a main reference. - Selection of business and managerial articles that will be posted on Canvas.

From Protein to Cell

Vakcode	AB_1052
Studiepunten	6
Periode	P2
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. D. Bald
Examinator	dr. D. Bald
Betrokken Docenten	dr. D. Bald, ing. H.W.J. Hakvoort
Onderwijsvormen	Deeltentamen schriftelijk, Computerpracticum, Practicum, Hoorcollege

Doel vak

Final attainment: The student understands: • Principles and applications of protein manipulation, over-expression, purification, handling, as well as the function of antibiotics as protein inhibitors. • General principles concerning design and carrying out experiments related to protein science. The student can: Apply protein bio-chemistry methods (CRISPR-Cas, protein over-expression, affinity chromatography, spectrophotometry, fluorescence methods, gel electrophoresis, enzyme activity tests).

Inhoud vak

The course consists of a mixture of lectures, practicals (in groups), and individual study. We will cover concepts/methods/techniques that you can use to study a broad range of relevant questions, e.g: • How can I manipulate a protein using CRISPR/Cas? • How can I produce a protein using bacteria? • How can I purify a protein? • How can I investigate the effect of an inhibitor/antibiotic on a target protein? • How can I investigate the effect of an inhibitor/antibiotic on a target cell? • How can I design my experimental strategy? • Which factors I have to think about to make my experiment successful?

Aanvullende informatie onderwijsvormen

The course consists of a mixture of lectures (8h), practical’s (36h), and individual study.

Toetsvorm

Reports (50 %), oral presentation (50 %). A minimum grade of 5,0 is required for each partial examination.

Literatuur

Lecture slides and experimental protocols. Any biochemistry textbook can be used for repetition.

Aanvullende informatie doelgroep

Students in the Minor Biomolecular Sciences & Neurosciences, Track Biomolecular Sciences.

Overige informatie

Part of the Minor Biomolecular Sciences & Neurosciences, Track Biomolecular Sciences. This course is scheduled

in the first half of period 2. A lab coat is mandatory for the lab practical lab work.Participation in the Portal Courses Experimental Cell Biology I and II is expected.

Aanbevolen voorkennis

Participation in the Portal Courses Experimental Cell Biology I and II.

Future Challenges in Global Health

Vakcode	AB_1042
Studiepunten	6
Periode	P1
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. N. Blignaut-van Westrhenen
Examinator	dr. N. Blignaut-van Westrhenen
Betrokken Docenten	dr. N. Blignaut-van Westrhenen
Onderwijsvormen	Hoorcollege, Werkgroep, Deeltentamen schriftelijk

Doel vak

• The student can list the five future challenges in global health and classify examples of health problems under each of these challenges. • The student can explain how new developments in health and life sciences interact with global health challenges. • The student can examine different policies developed at both the national and international level to address global health challenges. • The student can compare policy-making processes between countries and the different visions that exist on policy. • The student can apply certain methods, such as causal analysis and document review to perform a policy analysis within a team of students, on a real-world global health challenge. • The student can develop a policy brief on the basis of different sources of information (policy documents, scientific publications, grey literature), justify and present a synthesis of his/her findings verbally and in written form.

Inhoud vak

The course ‘Future Challenges in Global Health’ is the first course within the minor ‘Biomedical and Health Interventions’ as well as the minor 'Global Health' of the Bachelor’s programs Health Sciences, Biomedical Sciences and Health & Life (and other health-oriented Bachelors programs). The world of biomedical and healthcare interventions is in constant flux – new and emerging infectious diseases, changing disease patterns, demographic changes, rising costs of health care; all of which add complexity to the already considerable challenges. At the same time, some innovative answers to these challenges have emerged, such as novel pharmaceuticals, neurotechnologies, gene therapy, e-Health and m-Health (e.g. using a smart phone as a heart rate monitor or as a tool in losing weight or enhancing physical activity), and field test kits replacing entire laboratories. This begs the question: How can we make these answers fit the challenges, which are constantly emerging? History reveals a number of health interventions, which have shown to not be that effective, as well as a numerous unintended consequences (for example how does an anti-malaria campaign lead to collapsing roofs and to cats being parachuted over Borneo?). This course explores how we can learn from these experiences, and use the evidence on effective biomedical and health care interventions to develop better health policies. The beginning of the course provides you with an overview of both current and future challenges, in addition to scientific advancements in global health. We will also study how various countries and organizations, like the WHO, UN, and EU have addressed and dealt with these challenges, and why their policies have (not) been effective. We will use policy models to analyse real-world problems, solutions and policies (e.g. intervention programs). Addressing challenges in global health means both having a thorough knowledge of the health problem and potential interventions and perhaps more crucially, to understand the policy process and gain insight into how interventions can be effectively put into practice. A prominent example of this is the following. We know there is an ideal intervention to prevent the spread of HIV/AIDS: a condom. Yet, the disease still spreads, and this is not due to a lack of knowledge. This leaves us with lingering questions such as when is scientific knowledge important? Where do politics come in? Do we need to involve more people in setting up health interventions? Do we need to work in public-private partnerships? In the practical part of the course, you will use your newly acquired knowledge and apply it in small project teams. As researchers with a thorough knowledge on a particular global health challenge (e.g. poor maternal health outcomes in women in a low-income country like Tanzania, or the effects of climate change on population health) you will write a policy brief, with the ultimate aim to influence policy-making on this health challenge. By doing this, you will learn to work with the interdisciplinary practice of policy research and project management. The problem, as well as the policy and legislative context in which the selected global health challenge occurs, should be critically analysed and written down in a concise, to the point policy brief and presented to other course participants.

Aanvullende informatie onderwijsvormen

Lectures (18 hrs), training workshop (2 hrs), working groups assignment (16 hrs), self study (125.5 hrs), exam (2.5 hrs)

Toetsvorm

Written exam (50%) and assignment (50%). Both parts need to be passed.

Vereiste voorkennis

The course is open to students from all fields of study.

Literatuur

Selected materials are made available through Canvas.

Aanvullende informatie doelgroep

Course for students within the minor Global health and the minor Biomedical and health interventions.

Overige informatie

Part of the minor Global health and the minor Biomedical and health interventions. This minor course requires a minimum of 25 participants to take place.

Global Development and Prosperity

Vakcode	AB_1275
Studiepunten	6
Periode	P2
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. M. Schaafsma
Examinator	dr. M. Schaafsma
Betrokken Docenten	dr. M. Schaafsma
Onderwijsvormen	Werkgroep, Hoorcollege

Doel vak

The aim of the course is to provide students with a profound understanding of how contemporary global challenges are linked to economic, social and political systems and how transformations in these systems can deliver just and sustainable prosperity. By the end of this course, students will be able to: 1. Understand how existing, dominant measures and visions of development and economics have produced both positive and negative social and environmental effects, including inequality and climate change; 2. Describe how alternative measures of prosperity can be developed and used at different societal scales, and discuss their potential for transformations towards sustainable futures; 3. Discuss whether just transitions are necessary to achieve the sustainable development goals; 4. Analyse case studies of transformations towards sustainable and equitable futures.

Inhoud vak

Over the last centuries, mankind has seen tremendous improvements in health, education and income, but at the same time this drive for economic growth and consumerist lifestyles has caused serious and sometimes irreparable damages to global biodiversity, climate systems and habitats, as well as major socio-economic inequalities and injustices. The course first explores the history of such growth paradigms. Has emphasis on GDP growth equally benefited different world regions and people’s quality of life? We will discuss how growth-oriented visions of development have been globalized and have shaped institutions and policies from local to intergovernmental scales, and how they relate to current global environmental and social challenges. This leads us to the question: What does GDP as an indicator tell us? What does it mean to live a good life? How do you measure if someone lives a good life? We review some of the dominant measures of prosperity and the assumptions on which they rest, as well as alternative measures of prosperity, including happiness, quality of life and capabilities. Does it matter which metric we use? The module also explores various research methods and approaches necessary to develop and apply such measures. Next, we explore alternative ideas and visions of prosperity for the planet and respond to these global challenges, as also set out in the Sustainable Development Goals. What would a prosperous

society focused on long-term well-being look like, and how do we get there? How can citizens and consumers, farmers, financial institutions, or academics contribute to such a society? We will discuss the underlying assumptions of some of the existing frameworks for sustainable development as well as more radical proposals for transition and transformation towards prosperity. Using case studies of suggested transitions, we will critically evaluate whether such transformations will be sustainable and just, and how different stakeholders react to, and benefit from, these transformations.

Aanvullende informatie onderwijsvormen

The course consists of lectures, guest lectures, and seminars for discussions and group activities. The course runs for 7 weeks during period 2. Each week, there will be a lecture addressing the main material (2 hours), a guest lecture by VU researchers or external speakers illustrating the topic of the week (1 hour), and a seminar to explore the topic further (2 hours). Some of the seminars will be dedicated to the development of the argument map (see below). This is an opportunity to get feedback on the content and format of the argument map from peers and lecturers. Attendance in all classes is mandatory, but will be checked irregularly. We assume students are sufficiently serious and will show up at every class, barring unforeseen circumstances. Attending class is likely to increase your grade so attending classes is in your own interest. The course corresponds to 6 ECTS, equivalent to 168 hours of study time. Students can expect the following Class attendance 35 hours Mandatory readings 45 hours Preparing for seminars / group discussions 38 hours Developing argument map 50 hours TOTAL 168 hours

Toetsvorm

Argument map, accompanied by an annotated bibliography and a response to 2 peer-reviews (100%). The argument map should develop the 'prosperity domain' of your topic/case selected in course 1. An argument map presents a balanced assessment of different perspectives on a wicked societal issue in a structured way. Argument maps are a tool to provide clarity and insight and articulate reasoning, and to recognise different positions in order to guide open communication. In an argument map, individual elements will be grouped within “For” and “Against” either side of the contested contemporary sustainability issue. Building an argument map forces you to structure the debate and demonstrate the logic of different perspectives. The assignment also aims to advance your critical thinking and develop your skills in presenting results in a visually attractive way. The argument map should be based on a wide review of academic and ‘grey’ literature and media resources, and on discussions with peers. During a seminar meeting, you will discuss the individual posters with peers to provide and receive constructive feedback. Based on the group discussion of your poster, you write a short summary of the key issues raised by your peers and the suggested improvements to your map, and your responses to these comments and the adjustments to your argument map you made. You may or may not agree with the feedback you receive, and you have to provide arguments for your responses. The argument map is the only assignment of this course.

Vereiste voorkennis

Students do not require a specific disciplinary background, but affinity with the natural environment and social-economic development is desirable.

Literatuur

Each week, a selection of articles will be recommended to be studied in advance of the lectures and seminars.

Aanvullende informatie doelgroep

This course is part of the minor "Sustainability: Global Challenges, Interdisciplinary Solutions". This course is suitable for students with an interest in the link between the natural environment and social-economic development. This course can be taken as: • Extra-curricular course for VU-students • Extra-curricular course for non-VU-students.

Global English

Vakcode	L_ETBAETK209
Studiepunten	6
Periode	P1
Vakniveau	200
Onderwijstaal	Engels
Faculteit	Faculteit der Geesteswetenschappen
Vakcoördinator	dr. L.M. Rupp
Examinator	dr. L.M. Rupp
Betrokken Docenten	dr. L.M. Rupp
Onderwijsvormen	Hoorcollege, Werkcollege

Doel vak

1. Knowledge You are able to describe the role English plays in the world and the way in which varieties of English have evolved world-wide. Within theories of language variation and change, you are able to explain some of the emergent social characteristics and salient linguistic features of these English varieties. 2. Skills You are able to apply this knowledge in analyses and assessments of concrete situations, such as the implementation of English language policy. 3. Attitude You are able to present a well-informed perspective of the nature of different Englishes and the impact of the global spread of English on speakers of English around the world. 4. Communication You are able to report on topics in Global English in short oral presentations and in writing. 5. Competence You are able to identify people's needs regarding the English language, including your own, and you are able to decide on the best way to act upon it.

Inhoud vak

In the lecture, we will examine the world-wide spread of the English language and the role English plays in the wider world. We will begin with regions in the world where English is spoken as a first language (England, the Celtic countries, the U.S., Australia, etc.). We will then move on to regions where English is spoken as a second language (Africa and Asia), and from there to regions where English is used as a foreign language or a lingua franca (e.g. The Netherlands, China, Europe (Euro English?). We will explore different issues in the global spread of English. These include: linguistic issues (variation in English, World Englishes), social issues (the use of English in society, dialect perception, language and identity, language and power, language death), literary concerns (the use of English in postcolonial literature), and the impact of Global English on education (English language teaching and policy). In the seminar, we will address questions that have arisen from the lectures or the reading and we will discuss course work.

Aanvullende informatie onderwijsvormen

Lecture (2 hours per week) seminar (2 hours per week), and practicum (2 hours per week)

Toetsvorm

Exam (50%, individual grade) and a research report on a variety of English (50%, individual grade). Students must obtain a grade of ≥5,5 for both the exam and the research report.

Vereiste voorkennis

Students must have passed Academic English CIS-L&S Grammar and Academic English CIS-L&S Writing and they must have participated in English: International Communication. Students in the Minor in English are exempted from these prerequisites. They need to contact the Onderwijsbureau of the Faculty of Humanities (FGW) to register for the course (onderwijsbureau.fgw@vu.nl).

Literatuur

Schneider, E.W. 2001. English Around The World. Cambridge: Cambridge University Press. Other literature and materials will be made available in class and on Canvas.

Aanvullende informatie doelgroep

Second-year students CIS (tracks 'English Language and Communication Studies', 'Language and Media', 'Language Learning and Language Teaching') and Literature & Society: English, third-year minor students, and exchange students.

Overige informatie

80% attendance and submission of the course work is conditional for being awarded a grade for the exam and the research report. Please note that students in the Minor in English do not take the practicum.

Global Political Economy

Vakcode	S_GPE
Studiepunten	6
Periode	P2
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Sociale Wetenschappen
Vakcoördinator	prof. dr. E.B. van Apeldoorn

Examinator	prof. dr. E.B. van Apeldoorn
Betrokken Docenten	prof. dr. E.B. van Apeldoorn, dr. J.M. Hoye
Onderwijsvormen	Hoorcollege

Doel vak

Knowledge and understanding – The student has acquired knowledge and understanding of: (1) the contemporary global political economy, in particular how the contradictory process of globalization reshapes the relationship between states and markets; (2) rival concepts and theories within International Political Economy and their application to issues in contemporary global political economy.

Inhoud vak

This course offers students an introduction to the subject of International Political Economy (IPE). Throughout, the course will be guided by the question to which extent, and how, the current process of globalization is changing the relationship between states and markets, between public regulation and the private economy, between state and capital. Traditionally IPE studies the relationship between ‘the economic’ and ‘political’ within the interaction of – patterns of co- operation and conflict between – national states. If anything, the global financial and economic crisis of 2008 and beyond has made clear that this state-centric perspective is no longer adequate. At the same time the crisis has also shown that states, although apparently vulnerable in the face of global market forces, are also crucial when it comes to protecting the workings of global capitalism. This shows that indeed the relationship between states and markets is not a one-way street. In other words, politics and policies are shaped by the interests and activities of transnational (market) actors and by economic globalization but the latter is also driven by politics, and shaped (indeed enabled) by the policy choices that states make. It is from this perspective that this course will examine the various approaches within international political economy; the historical evolution of the global political economy; the globalization of production and the role of transnational corporations; the international monetary system and the globalization of finance; the global financial crisis and the eurozone crisis; the political economy of development; the rise of China and other emerging powers, and the political economy of energy and the environment.

Aanvullende informatie onderwijsvormen

Lectures.

Toetsvorm

Written exam.

Literatuur

Balaam, D.N. and B. Dillman (eds). (2019). Introduction to International Political Economy. Pearson New International Edition (Seventh edition). Harlow: Pearson Eduction.

Aanvullende informatie doelgroep

2nd year bachelor students in Political Science; Students in the Minor Political Science. Also open as an elective course for VU-students and Exchange Students.

Aanbevolen voorkennis

Some introductory-level knowledge of political science and International Relations as well as of basic (macro-)economics is recommended but relevant concepts will also be explained in class.

Governance and Regulation of Emerging Technologies

Vakcode	R_GRET
Studiepunten	6
Periode	P1
Vakniveau	200
Onderwijstaal	Engels
Faculteit	Faculteit der Rechtsgeleerdheid
Vakcoördinator	prof. mr. A.R. Lodder
Examinator	prof. mr. A.R. Lodder
Betrokken Docenten	prof. mr. A.R. Lodder

Onderwijsvormen	Leergroep, Werkgroep, Hoorcollege

Doel vak

The aim of this course is to explore various ways to regulate and govern societal changes caused by new technological developments. After this course the student knows and understands the various regulatory and governance instruments, such as laws, regulation via technology, self-regulation, standardisation, and how and when to apply these to new technologies, including so-called disruptive technologies like Ueber, whole genome sequencing, Airbnb, and block chain technology.

Inhoud vak

This introductory course of the Minor Technology, Law and Ethics offers an introduction into and an overview of the ways technology can or should be regulated. Important general concepts to be discussed are the economy (market powers), the law (regulation and case law), social conventions and ethics, and the architecture (e.g. the software). Basically three angles can be used to approach a technological development: 1. The Possible: what is technically feasible? (Technology) 2. The Desirable: do we like it, do we want it? (Ethics) 3. The Permissible: do we allow it? do we permit it? (Law) For all emerging technologies we have to think about these three questions. The answers can roughly be categorized as: White: It is possible, desirable, and permissible. Grey: It is possible and permissible, but desirable? Black: It is impossible, or possible but not permissible. We will analyze different kinds of emerging technologies, and discuss in what categories we believe they belong (white/grey/black).

Aanvullende informatie onderwijsvormen

Lectures and tutorials.

Toetsvorm

Written exam.

Literatuur

Material will be made available via Canvas.

Aanvullende informatie doelgroep

Apart from regular students, the course is also available for: Students from other universities/faculties Contractor (students who pay for one course)

Governance of Global Sustainability

Vakcode	AB_1229
Studiepunten	6
Periode	P2
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. J. Dell'Angelo
Examinator	dr. J. Dell'Angelo
Betrokken Docenten	dr. J. Dell'Angelo, dr. K.E. Negacz
Onderwijsvormen	Werkcollege, Hoorcollege

Doel vak

The main objective of this course is for you to develop an understanding of the different modes and multidimensional challenges of sustainability governance and the critical ways in which it is possible to think about decisions that have impact on the environment. Collectively as a class, and individually, you will develop knowledge in the politics of the environment by engaging with core scientific literature and discussing and tackling real world socio-environmental problems. By the end of the course, you will have gained an understanding of the complexity of the political dimension of the environment and the decisions that society deals with that impact sustainability. You will develop theoretical knowledge that will give you the ability to think critically and question mainstream societal decisions, politics and policies about the environment. By the end of this course you will be able to: Understand and describe different critical principles and theories about multilevel governance of sustainability and the politics and policies of Sustainable Development Apply different theories to think critically about and different

sustainability problems, by analyzing them from diverse and diverging perspectives Characterize different modes of sustainability governance and identify their strengths and limitations in relation to different types of socio-environmental problems Formulate your own analysis and suggestions regarding societal decisions that impact local and global sustainable development

Inhoud vak

Humanity deals with complex socio-environmental problems that impact the wellbeing of current and future generations. Nature and ecosystems globally are threatened and under suffering increasing deterioration. It is important to develop critical knowledge, understanding and perspectives about socio-environmental problems and potential solutions. Governance plays a key role in dealing with global sustainability issues. In this course we will study alternative theories about the sustainability challenges that will allow you to think of socio-environmental problems critically and we will learn about the different modes of governance that play a role in addressing issues of sustainability and sustainable development. We will deal with the political dimension of the environment and learn about how different theoretical perspective challenge the dominant paradigms. We will discuss and debate key sustainable development and socio-environmental problems such as the FEW nexus, climate change, water challenges, environmental conflicts etc.

Aanvullende informatie onderwijsvormen

We will mix: frontal lectures, seminars, discussions and group activities. The structure of the course consists of a mix of lectures and group discussions, activities and assignments. The group activities in class will include simulations and team assignments. (Please see information about Seminar preparation in canvas). Readings will be assigned for each session and it will be essential to be well prepared in order to successfully participate and address key questions that we will tackle. Participation: Due to the complexity of the issues addressed and the concentrated length of the course I highly recommend attending every session. Of course, if you will have serious family or health reasons you can count on my help for making up for your absence and catching up. The amount of the material that we will go through and the very short time to prepare between the end of classes and the final exam will not allow you to be successful in this course if you procrastinate reading and if you don’t participate. I will lead group discussions on key questions related to the readings. To make the most of our time together, I will call on students directly to address specific question during the group discussion. I will apply the “Socratic method” and challenge you to defend your opinions. (This is a method that might seem a little intimidating but is particularly useful to develop the capacity to debate publicly and defend your opinions – in line with the learning goals of the course.) Preparation advice: I can’t stress enough the importance to hit the ground and start running from day one, actively participate and not fall behind. A critical aspect is that you make an effort to study the assigned readings before class. If you don’t you will see pages adding up quickly and you not be as able to engage productively in discussions and have less information and tools to understand the lectures. I look forward to work with you, so please also take advantage of office hours.

Toetsvorm

Assessment is based on exam, presentations and written individual and group assignments

Literatuur

For each week, a selection of articles will be made to be studied in advance.

Aanbevolen voorkennis

Interest in sustainability issues and social questions

Grand Challenges for Sustainability

Vakcode	E_IBA3_GCS
Studiepunten	6
Periode	P1
Vakniveau	300
Onderwijstaal	Engels
Faculteit	School of Business and Economics
Vakcoördinator	dr. G.C. van der Meijden
Examinator	dr. G.C. van der Meijden
Betrokken Docenten	dr. G.C. van der Meijden
Onderwijsvormen	Werkcollege, Hoorcollege

Doel vak

ACADEMIC AND RESEARCH SKILLS After successfully completing this course, the student • can analyze and demonstrate an understanding of sustainabilibty problems from different perspectives • is able to put forward well-founded, substantiated points of view on sustainable development BRIDGING THEORY AND PRACTICE • After successfully completing this course, the student is able to select, frame and qualitatively describe a challenge in the context of sustainability that is urgent, multidisciplinary, and linked to your personal interest and to present a well-founded research proposal that is embedded in the media and the academic literature in an online pitch. KNOWLEDGE After successfully completing this course, the student: • Can describe the biophysics behind global environmental problems such as climate change and biodiversity loss; • explain the importance of the 17 Sustainable Development Goals (as agreed upon in 2012 by the UN General Assembly) for achieving sustainable development; • explain the determinants of economic growth and development; • can argue why the management of natural resources cannot be left to the free market; • can discuss whether the government can, and, if so, how the government should intervene to obtain sustainable development and how to combat poverty, climate change, biodiversity loss, and resource depletion; APPLICATION After successfully completing this course, the student: • can describe theoretical and empirical methods necessary to study economic growth, the effects of market failures, the optimal management of natural resources, and the effects of different policy interventions. SOCIAL SKILLS After successfully completing this course, the student: • can present and actively discuss themes relevant to this course BROADENING YOUR HORIZON After successfully completing this course, the student can explain: • the interactions of the world economy, global society, and the natural environment that are important for sustainable development • why sustainable development calls for socially inclusive and environmentally sustainable economic growth. • can explain the role of good governance, both by governments and multinational firms, for achieving sustainable development

Inhoud vak

Sustainable development is the central challenge of our days. Currently, the Earth is inhabited by 7.8 billion people (9 times more than at the start of the Industrial Revolution in the 18th century) who together produce more than 90 billion US dollars of output (200 times more than at the start of the Industrial Revolution). Both population and output are projected to keep on growing during the next decades. Furthermore, our world is increasingly interconnected through trade, migration, technology diffusion, knowledge flows, and social networks. As a result, human influence on the Earth’s physical processes has been increasing. Nowadays, in the Anthropocene, human activity is even deemed to be the dominant influence on the Earth’s climate and natural environment. Although two decades of economic development have brought widespread prosperity, more than a billion people are still living in extreme poverty. Moreover, by crossing planetary boundaries human activities may plunge the world into a gigantic environmental crisis caused by climate change and biodiversity loss. In order to eradicate poverty and to prevent environmental catastrophes, a transition needs to me made from the business as usual (BAU) to a sustainable development (SD) path. Making this transition requires good governance, not only by governments, but also by citizens and businesses. The objective of this course is to characterize a path of sustainable development and to identify the Grand Challenges that the world faces in making the transition from BAU to the SD path. The course is organized around the Sustainable Development Goals as adopted by the UN in 2015. The first week will start with a general introduction that sketches several important sustainability issues, illustrated by empirical evidence. During the course, we pay attention to the scientific as well as to the economic and societal dimensions of the identified challenges for sustainability. Furthermore, both the positive or analytical side (i.e., how to make sense of the interactions of the economy, society and the environment?) and the normative or ethical side (i.e., what should be the objectives of a well-functioning society?) of sustainable development will be discussed during the course. The topics that will be dealt with during the course are: 1. Growth and development: capital accumulation and technological change; 2. Ending global poverty, education, and health; 3. Management of natural resources and planetary boundaries; 4. Climate change: climate science and environmental policies; 5. Biodiversity and land-use change; 6. Global governance.

Aanvullende informatie onderwijsvormen

Lectures (with interactive elements) Tutorials (including presentation and discussion sessions) MOOC (to prepare at home for the lectures and tutorials)

Toetsvorm

Written exam – Individual assessment Interim Assignments – Group assessment

Literatuur

Sachs, Jeffrey D., The Age of Sustainable Development, 2015, Columbia University Press, New York. Collection of articles.

Aanbevolen voorkennis

Microeconomics

Great Minds I

Vakcode	W_BA_MND1
Studiepunten	6
Periode	P1
Vakniveau	200
Onderwijstaal	Engels
Faculteit	Faculteit der Geesteswetenschappen
Vakcoördinator	dr. E. Koster
Examinator	dr. O.L. Lizzini
Betrokken Docenten	dr. O.L. Lizzini
Onderwijsvormen	Hoorcollege

Doel vak

Het doel van deze collegereeks is het verwerven van kritische kennis van een aantal hoogtepunten uit de Antieke en Middeleeuwse wijsbegeerte. Dat wil zeggen dat je na dit college (1) kennis hebt van het gedachtengoed van een aantal grote denkers uit de Westerse wijsbegeerte in Oudheid en Middeleeuwen, (2) inzicht hebt in de vragen waarop die wijsbegeerte een antwoord probeert te zijn. Na dit college ben je in staat (1) filosofische teksten uit Oudheid en Middeleeuwen te interpreteren, (2) een aantal filosofische kernbegrippen te hanteren, (3) in eigen woorden de ontwikkeling van de Antieke en Middeleeuwse wijsbegeerte te schetsen.

Inhoud vak

Dit college bestrijkt de Westerse wijsbegeerte van de 6e eeuw v.Chr. tot en met de 14e eeuw n.Chr. Het beoogt een inleiding te zijn in de Antieke en Middeleeuwse wijsbegeerte aan de hand van het gedachtegoed van Plato, Aristoteles, Boëthius, Thomas van Aquino, en ook besteden we aandacht aan Arabische en een aantal vrouwelijke filosofen. We zullen ons concentreren op de relatie tussen wereld, kennis en taal (metafysica, epistemologie, logica).

Aanvullende informatie onderwijsvormen

Interactief hoorcollege; werkcollege; tekstanalyse.

Toetsvorm

Wekelijkse opdrachten ter voorbereiding op de werkcolleges; afsluitend tentamen. De opdrachten moeten voldoende zijn, het tentamen bepaalt het eindcijfer.

Literatuur

• Reader Great Minds I

Aanvullende informatie doelgroep

Minorstudenten Filosofie.

Great Minds II

Vakcode	W_BA_MND2
Studiepunten	6
Periode	P2+3
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Geesteswetenschappen
Vakcoördinator	dr. J.M. Halsema
Examinator	dr. J.M. Halsema
Betrokken Docenten	dr. C.H. Krijnen, dr. J.M. Halsema
Onderwijsvormen	Hoorcollege

Doel vak

Students acquire: 1. knowledge and insight into the fundamental questions of modern and contemporary philosophy; 2. knowledge and insight into the basic ideas of the main philosophers from the 17th-20th century; 3. insight into connections and differences between the most important concepts and ideas in modern and

contemporary philosophy. Students practice: 1. the ability to critically study and consider texts from the philosophical history; 2. academic judgment; 3. argumentative skills; 4. writing skills.

Inhoud vak

In this course the most important thinkers from the philosophical history of the 17th until the 20th century will be discussed, who have had an ineffaceable influence on philosophical thinking in general and thinking about science and culture in particular. The following philosophers are discussed: Descartes, Hume, Kant, Hegel, Nietzsche, Heidegger, Arendt, Wittgenstein and Foucault.

Aanvullende informatie onderwijsvormen

Lectures to introduce the philosophical movement and philosopher's work (2 hours per week); text reading seminars in which a passage or text(fragment) of the philosopher is discussed (2 hours per week). Attendance of 80% of the text reading seminars in the classes on Modern Philosophy and in the classes on Contemporary Philosophy is mandatory.

Toetsvorm

Protocol on the primary literature (10%); - Short essay on Modern Philosophy or Contemporary Philosophy (20%); - Midterm test on Modern Philosophy with essay questions (35%); - Final test on Contemporary Philosophy with essay questions (35%). - There is a mandatory attendance of 80% in the lectures in part I and 80% in the lectures in part II in order to achieve the learning objectives.

Literatuur

The literature list will be published at Canvas two weeks before the start of the course.

Aanvullende informatie doelgroep

The course is part of the minor Philosophy.

Aanbevolen voorkennis

Great Minds I

Hadith-wetenschappen

Vakcode	G_BATRSAL026
Studiepunten	6
Periode	P2
Vakniveau	300
Onderwijstaal	Nederlands
Faculteit	Faculteit Religie en Theologie
Vakcoördinator	dr. Y. Ellethy
Examinator	dr. Y. Ellethy
Betrokken Docenten	dr. Y. Ellethy
Onderwijsvormen	Hoorcollege

Doel vak

De student kan: - de terminologie op het gebied van de hadithwetenschappen benoemen, definiëren, uitleggen, analyseren, en toepassen; - vergelijkingen maken tussen westerse historische methodologie en Hadithmethodologie, de hadithwetenschappen integreren in en confronteren met bestaande historische theorieën en eigen theoretische positiebepaling verwoorden; - de niet-islamitische en islamitische kritiek tegen de autoriteit van de Soenna en de betrouwbaarheid van de Hadithmethodologie weergeven, bediscussiëren en hierover argumenteren; - uitleg geven over de belangrijkste concepten van de principes van de hadithwetenschappen [uṣūl al-ḥadīth]; - de inhoud van een aantal in het college behandelde Koran- en Hadiththeksten weergeven en deze teksten analyseren en uitleggen volgens de methode van de Koran- en hadithwetenschappen blijkend uit presentaties en werkcollege discussies; - in hoofdlijnen iets vertellen over de hedendaagse discussies en problematiek van de hadith in de moderne tijd, het belang van dit vakgebied uiteenzetten in een bredere maatschappelijke of wetenschappelijke context. - de belangrijke Soenna-hadithliteratuur benoemen en hierover uitleg geven en literatuuronderzoek doen blijkend uit schrijfopdrachten en presentaties; - de hadiths classificeren en toeschrijven aan een bepaalde autoriteit en deze classificeren; - enkele hadiththeksten vanuit een eigen perspectief toelichten, verwoorden, in verband brengen met andere posities, en het belang hiervan uiteenzetten in een bredere

maatschappelijke en wetenschappelijke context; - hermeneutische competenties gebruiken, achtergrondinformatie bij actuele kwesties aanleveren en de opgedane kennis in link met de praktijk toepassen.

Inhoud vak

Hadith-wetenschappen is een vervolg op en verdieping van Inleiding in de Koran en Soenna. De inhoud wordt verdiept met meer aandacht voor: hadithwetenschappen/methodologie, terminologie van de hadithwetenschappen usul/mustalah al-hadith, en de hedendaagse discussies over de autoriteit van de Soenna. Het gaat dus om: geschiedenis van usul al-hadith, classificatie van de hadiths, analyse van isnâd/sanad en matn, relatie tussen Koran en Soenna , deconstructie en beoordeling van een sanad, leeswijze van een sanad, criteria van betrouwbaarheid van een overlevering/overleveraar, aanvaardbaarheid en onaanvaardbaarheid van een hadith, aantasting van een isnâd of matn, hadith commentaar (sharh) en methodes van takhrij van een hadith.

Aanvullende informatie onderwijsvormen

Hoor- en werkcolleges met schriftelijke opdrachten en tussentijdse papers. Een klassieke bron-tekst (matn) van de hadithmethodologie wordt uitgelegd en ganalyseerd; een aantal relevante artikelen, boekhoofdstukken en hadith teksten worden behandeld. Er wordt aandacht gegeven aan de interactieve deelname van de studenten. Vragen worden aan het begin van het college beantwoord en besproken. Aan het eind van de serie hoorcolleges wordt een werkstuk gepresenteerd, in werkgroep besproken en beoordeeld.

Toetsvorm

schriftelijk (eventueel online met proctoring) tentamen (80%) + schrijfopdracht’ (20%)

Literatuur

Verplicht: - Azami, M., Studies in Hadith Methodology and Literature, Indianapolis: American Trust publications, 1977 - Brown J., "The rules of Matn criticism:There are no rules", Islamic Law and Society 19 (2012), pp. 356-396 (Canvas) Aanbevolen: - Ibn Al-Salah, An Introduction to the Science of the Hadith, trans. Dickinson E., Reading: Garnet Publishing Ltd, 2006 - Kamali M., A Textbook of Hadith Studies, Leicestershire: The Islamic Foundation, 2009 - Maloush T., Early Hadith Literature and the Theory of Ignaz Goldziher, Phd thesis, University of Edinburgh, 2000 - Siddiqi, M., Hadith for Beginners, New Delhi : Goodword Books, 2000 (VU Bibliotheek)

Overige informatie

Aanwezigheid 80%.

Aanbevolen voorkennis

Inleiding in de Koran Soenna, Arabisch IV (n.v.t. voor minor studenten), Geschiedenis van de Islam tot 1800 (n.v.t. voor minor studenten) .

Health Economics

Vakcode	E_EBE3_HEC
Studiepunten	6
Periode	P1
Vakniveau	300
Onderwijstaal	Engels
Faculteit	School of Business and Economics
Vakcoördinator	prof. dr. W. Janssens
Examinator	prof. dr. W. Janssens
Betrokken Docenten	prof. dr. W. Janssens, R.E.K. Prudon, dr. T.J. Galama
Onderwijsvormen	Werkcollege, Hoorcollege

Doel vak

In this course students learn to: • Apply microeconomic theory to the study of health and healthcare investments • Understand and address the drivers of individual health-related behavior • Explain the origins of inequalities in health outcomes over the life cycle • Formulate economic requirements for effective healthcare systems • Identify healthcare market failures and explain how/why the government may intervene • Evaluate the impact and effectiveness of healthcare policies using economic theory • Perform longitudinal analyses of developments in healthcare • Collect and synthesize empirical evidence to communicate on matters of healthcare

Inhoud vak

Inhoud vak

The central theme of this course is the economic optimalization of healthcare systems. This course provides students the necessary economic knowledge to analyse healthcare policies and individuals' health behavior, and to examine the economic effects of healthcare policy measures. The following topics will be addressed: • healthcare system's main objectives; • market imperfections and principal-agent relationships in healthcare; • methods to evaluate the economic performance of healthcare policies; • health financing and health insurance; • cost-benefit incidence and cost-effectiveness analyses of healthcare programs; • socioeconomic and life cycle inequalities in health outcomes; • preventive health behavior and infectious diseases (such as COVID19, HIV/AIDS, malaria); • the growing burden of non-communicable diseases; • individual behavior and lifestyle choices that affect health outcomes; • the link between mental health, depression and socioeconomic outcomes.

Aanvullende informatie onderwijsvormen

- Lectures. - Group meetings to discuss papers on the reading list based on student presentations of these papers. - Tutorial meetings with written (group) assignments.

Toetsvorm

- Written exam - individual assessment - Weekly paper presentations - individual/group assessment of submitted slides, one presentation, and class participation - Weekly written tutorial assignments - group assessment

Vereiste voorkennis

None.

Literatuur

- Selection of chapters from Bhattacharya, J., T. Hyde and T. Tu (2014), "Health Economics", Palgrave McMillan. - Papers, as listed in the course manual and published on Canvas.

Aanbevolen voorkennis

None.

Human Rights and Citizenship

Vakcode	R_HumRC
Studiepunten	6
Periode	P2
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Rechtsgeleerdheid
Vakcoördinator	mr. dr. M.C. Stronks
Examinator	mr. dr. M.C. Stronks
Betrokken Docenten	prof. dr. G.R. Jones, mr. dr. M.C. Stronks
Onderwijsvormen	Werkgroep, Leergroep

Doel vak

After successfully taking this course you will be able to: • Analyse and evaluate the multi-faceted and changing character of citizenship and nationality; • Recognise and explain the variety of rights that are connected to (European) citizenship and/or national membership; • Critically engage with the concept of ‘integration’ and analyse the assimilationist shift of mandatory integration measures; • Scrutinize the temporal dimension of citizenship and the assumed relation between the migrant, the citizen and time; • Thoroughly scrutinise the reading material and being able to engage with the literature in essays; • Formulate your own opinion on the central issues of this course well-informed by the literature and case-law.

Inhoud vak

What and who is a citizen? What kind of non-citizens can one discern? How does a migrant become a citizen? Who are and have been historically excluded from citizenship? And is there an exclusionairy violence inherent in the concept of citizenship? What rights do non-citizens have? And how do these rights develop over time? It will turn out in this course that upon close scrutiny the relation between the citizen and the alien is rather puzzling. In this course we investigate which rights can be invoked by nationals and by migrants. We will address the different

understandings of citizenship, the concept of and the rights attached to European citizenship, the difference that having or not having national membership makes, the possibility of being joined by family members from abroad, the concept of ‘integration’, the violence inherent in citizenship and the relation all these different aspects of citizenship have with time. These issues will be addressed in weekly lectures and assignments.

Aanvullende informatie onderwijsvormen

Weekly lectures, obligatory weekly assignments.

Toetsvorm

Written exam. Re-examination might be an oral exam, depending on the number of participants. Submission of weekly assignments is required for taking the exam.

Literatuur

Will be announced on Canvas.

Aanvullende informatie doelgroep

Apart from law students of the VU, the course is also available for: Students from other universities/faculties Exchange students Contractor (students who pay for one course)

Human Rights and the Border

Vakcode	R_HumRB
Studiepunten	6
Periode	P1
Vakniveau	200
Onderwijstaal	Engels
Faculteit	Faculteit der Rechtsgeleerdheid
Vakcoördinator	mr. dr. Y. Arbaoui
Examinator	mr. dr. Y. Arbaoui
Betrokken Docenten	mr. dr. E.R. Brouwer, drs. R.S. Franco MSc, dr. E. Zambelli MA
Onderwijsvormen	Leergroep, Werkgroep

Doel vak

The overall aim of the course is to increase knowledge of the law concerning borders and the understanding of the changing meanings of borders. The course invites students to explore borders from a (global) legal and sociological perspective. The specific learning aims of this course are: 1. To develop some insight into the coherence and conflicts between relevant domestic, European and international law; 2. To understand the ways in which the law develops and manifests itself in a social context; 3. To read, understand and analyze legal and theoretical texts and arguments, including case law and legislation; 4. To take a well-founded and substantiated position in a social-legal debate. After completion of this course, you will be able to: (exit qualifications) - understand the different categories of ‘migrants’ created by the law and the attaching differences with regard to the right to cross borders and the sanctioning of illegal border crossing; - identify relevant domestic, European and international law and deal with conflicts among them. - critically reflect on legislation and case-law concerning borders, practices concerning borders as well as on the human dimension of borders.

Inhoud vak

The operation of borders and border control in practice may differ greatly from how it may be understood to operate in theory. In this course, the knowledge of the law on borders will be connected to societal reality. The course explores the convergence and discontinuities between physical borders and social identities, and the emerging tensions between the nation state and migrants’ enjoyment of their fundamental human rights. It provides an opportunity to study which laws regulate people’s mobility, creating different categories of ‘migrants’. The course covers the issue of non-refoulement and other forms of how human rights provisions can generate migration rights. In addition, the course addresses current issues such as the safety of boat migrants, the role of private actors, and the use of technologies at the borders.

Aanvullende informatie onderwijsvormen

The course basically consists of (interactive) lectures. In addition, field excursions (or online alternatives) may take place, enabling students to learn how borders work in practice.

Toetsvorm

The course will be concluded with a written exam.

Literatuur

Will be announced on Canvas.

Aanvullende informatie doelgroep

This course is open to students of various disciplines who have completed their first year of their Bachelor program, including exchange students.

Overige informatie

This course is part of the minor ‘Law and Global Society: Internet, Migration and Climate Change’ and of the minor ‘Migration Studies’.

Human-Computer Interaction

Vakcode	X_400432
Studiepunten	6
Periode	P6
Vakniveau	200
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. L.M. Lischke
Examinator	dr. D.J. Smith
Betrokken Docenten	dr. L.M. Lischke, dr. D.J. Smith, dr. S. Lusini
Onderwijsvormen	Hoorcollege, Werkcollege

Doel vak

Students will learn to: 1. Describe fundamental principles of user experience 2. Describe fundamental input and output techniques for human-computer interaction 3. Gather requirements for designing interactive systems 4. Apply low-fidelity and high-fidelity prototyping methods for interactive systems 5. Evaluate interactive systems 6. Validate empirical evaluations of interactive systems 7. Communicate design solutions and evaluations on an academic level 8. Work in teams to achieve a common goal

Inhoud vak

The lectures in this course will discuss and present examples of concepts and methods in the field of human-computer interaction. It will cover in detail all steps in the human-centered design lifecycle; We will discuss methods for requirement analysis, designing, and building prototypes of interactive systems, and evaluating them. In practical sessions, students will practice the use of relevant methods within the context. Some of the topics covered in the course are: User Needs Analysis, Conceptual Design, Mockups, and Prototypes, Usability, Evaluation of Prototypes and technology for interactive systems.

Aanvullende informatie onderwijsvormen

Lectures, practical sessions

Toetsvorm

The final grade is composed of the several assessments: - course assignments (group and individual); - essay (individual). The final grade will be calculated based on the assignment grades and the essay grade (FINAL GRADE = 0.6 ASSIGNMENTS + 0.4 ESSAY). To pass the course, students need to pass both parts (Grade >=5,5).

Literatuur

Recommended Literature: MacKenzie, I. S. (2012). Human-computer interaction. Elsevier Science. ISBN: 9780124058651. Available at the VU Library (https://vu.on.worldcat.org/oclc/875263048)

Aanvullende informatie doelgroep

2CS

Toelichting Canvas

All details of the course will be published on the Canvas page.

Aanbevolen voorkennis

Knowledge of programming, statistics, data collection, and requirements gathering.

Identity, Diversity and Inclusion

Vakcode	S_IDI
Studiepunten	6
Periode	P2
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Sociale Wetenschappen
Vakcoördinator	prof. dr. S. Saharso
Examinator	prof. dr. S. Saharso
Betrokken Docenten	dr. M.C. de Regt, prof. dr. S. Saharso
Onderwijsvormen	Hoorcollege

Doel vak

This course is designed to introduce students to the various issues concerning diversity and inclusion in an increasing globalizing world. The course focuses in particular on contemporary issues concerning processes of inclusion and exclusion in the Dutch/European context. The central questions in this course are: 1. How and why are identities based on ethnicity, gender, class and sexuality constructed by both insiders and outsiders? 2. How do (groups within) European/Dutch societies respond to diversity? 3. What are the relevant mechanisms of inclusion or exclusion? 4. How should we contextualize current debates and practices related to inclusion/exclusion processes in relation to Dutch/European historical developments? Learning outcomes: Knowledge and understanding - The student has acquired knowledge and understanding of: (1) the relevant forms and dimensions of social identities; (2) theories of identity construction inclusion and exclusion; (3) the questions, debates and policies on diversity in con-temporary Western societies, and the differences between societies thereof; (4) the challenges of contemporary developments - such as globalization and individualization- on contemporary forms of diversity. Application - The student has acquired the competences to: (5) apply acquired knowledge in the analysis of contemporary forms of diversity. Making judgements - The student is able to demonstrate: (6) a critical stance in contemporary debates over identity, diversity and inclusion.

Inhoud vak

Identity issues have become very prominent in our globalizing world. While migration is often presented as one of the main causes of the increasing emphasis on identity, other developments, such as those related to (cultural) globalization and economic transformations, have had a strong impact as well. In addition to ethnic and religious diversity, gender inequalities, class differences and issues related to sexual diversity have changed The Netherlands, and other European societies. Ethnicity, gender, class and sexuality are markers of identity, but have also become axes of inclusion and exclusion in contemporary European societies. This course discusses how ethnic and religious diversity intersect with other forms of diversity. While historical constructions of the nation were already gendered, in contemporary discourses on national identity gender (women) and (homo)sexuality have become more prominent as markers of national inclusion and exclusion. Or, as in Europe ethnic diversity largely coincides with class distinctions, how does this affect feelings of belonging and inclusion? Islamophobic rightwing radicalization and Islamic radicalization are studied as possible reactions to experi-enced threats to identity and/or social exclusion. The course will also zoom in on cases of local conflict and on related contemporary debates, such as feminist solidarity in an age of diversity.

Aanvullende informatie onderwijsvormen

Lectures.

Toetsvorm

Digital exam.

Literatuur

TBA, a reader including texts by Alba & Foner (2015), Crenshaw (1991), Okin (1999(), Young (1990) and others (see CANVAS).

Aanvullende informatie doelgroep

2nd year bachelorstudents in Cultural Anthropology and Development Sociology; 2nd year bachelorstudents in Sociologie. Students in the Minor Sociology, the Minor Development and Global Challenges and the Minor Gender & Diversity. Also open as an elective course for Exchange Students

Imagining the Dutch: themes in Dutch History

Vakcode	L_GCBAALG003
Studiepunten	6
Periode	P1+2
Vakniveau	200
Onderwijstaal	Engels
Faculteit	Faculteit der Geesteswetenschappen
Vakcoördinator	drs. W.C. Manuhutu
Examinator	drs. W.C. Manuhutu
Betrokken Docenten	drs. W.C. Manuhutu
Onderwijsvormen	Hoorcollege

Doel vak

The main goal of this course is to familiarize diverse group of students coming from different countries and educational backgrounds with some core aspects of the history of the Netherlands. Students will also learn how to connect Dutch history with a number of present-day academic as well as public debates on issues such as national identity, tolerance, environment and colonialism. They will learn how to connect these themes with different representations of aspects of Dutch history in the media and in museums. Not all participating students are history students, and this course will also introduce several concepts of history as an academic discipline, by discussing several branches within the field, such as political history, colonial history, environmental history or national history. After taking this course, students will be able to recognize normative thinking in scientific literature and in the work of historians. Students will also learn how to read and summarize academic writing, and how to use scientific literature in debates. The course also addresses the problematic nature of obtaining historical information from internet resources. Students will be demanded to integrate their own reading with the different lectures. The course also aims to encourage a critical attitude towards nformation presented in texts and images.

Inhoud vak

Often, the perception of the Netherlands at home and abroad is ridden with stereotypes. It is a country of cheese, herring and coffeeshops. Canals, clogs, windmills and a very liberal attitude to life choices are also elements in this imagery. The struggle against water is yet another recurring theme in the way the Dutch are perceived and see themselves. The course will cover a period of over 500 years from 1500 until the present, giving an overview of the multiple histories of the Netherlands. Besides written texts, audiovisual sources will also be employed in order to illuminate the themes that will be discussed. Breaking away from the Spanish Habsburg Empire in the late sixteenth century, the Dutch Republic became a world power in the course of the seventeenth century. As a republic it was an exception in an age of kingdoms and empires. The seventeenth century was marked by economic, scientific and cultural success. The foundations for a large colonial empire were laid in the seventeenth century. This period has been coined the ‘Golden Age’, a term that has come under scrutiny and debate in recent years. In the course the emergence of the Dutch Republic and the way the ‘Golden Age’ came into being and is remembered will be discussed. Several characteristics that are considered ‘typically Dutch’ such as a pragmatic, entrepreneurial mentality are linked to this period The merchant and the minister are two other images that are often used in characterizing the Dutch. As a country dependent on trade, international relations have always been of the utmost importance. As a small nation the Netherlands also has a tradition in international law as well as a tendency to imagine itself as holding the moral high-ground and a guide to the world. During the course among others the following themes will be discussed: -The emergence of the Netherlands as an independent political nation and its development as a Republic in the seventeenth century. -Notions of tolerance and religious diversity - The economic, scientific and cultural developments in the Netherlands (Rembrandt, Hugio Grotius) -The Dutch and the sea and water: a maritime power at sea, managing water at home --The Dutch as a colonial power and a post-colonial society -The transition from a Republic to a Kingdom - Pillarrized consensus democracy and present-day Dutch politics. - The Dutch and the World Wars - Migration, diversity and race In the Netherlands Discussion among students about the content of the lectures and the course literature is part of this course, which is specifically designed to connect history with contemporary issues. Quizzes and polls will be employed to stimulate class engagement.

Aanvullende informatie onderwijsvormen

Aanvullende informatie onderwijsvormen

There will be weekly lectures (1h45). All the thematic lectures will be given by guest lectures, primarily from the History Department of the VU. Presence in class is mandatory. Students who have a reason to be absent have to inform the course coordinator in time of their absence, which is limited to a maximum of two times, after which the student can be penalized with exclusion from participating in the exams.

Toetsvorm

There is one written assignments (35%), as well as a written exam (65%).

Literatuur

Friso Wielenga, A History of the Netherlands. From the Sixteenth Century to the Present Day (London: Bloomsbury, 2015) ISBN 9781472569592 (obligatory). Next to Wielenga's handbook, students will be asked to read articles or book chapters related to each theme, which will be posted on Canvas in due time.

Aanvullende informatie doelgroep

Students taking part in the minor programme 'History' or the programme 'A Semester in Amsterdam'; other exchange students; Dutch students interested in Dutch History.

Overige informatie

This course will be provided two times during the academic year in periods 1&2 (L_GCBAALG003) and in periods 4&5 (L_GCBAALG004).

Information Management for CS

Vakcode	XB_0047
Studiepunten	6
Periode	P3
Vakniveau	100
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. I.G. Gerostathopoulos
Examinator	dr. I.G. Gerostathopoulos
Betrokken Docenten	dr. I.G. Gerostathopoulos
Onderwijsvormen	Hoorcollege, Werkcollege

Doel vak

Through this course, students will study the topic of information management in breadth and in depth. After taking this course, the student will be able to: 1. Explain the strategic relevance of information systems for modern organizations; (Knowledge and understanding) (Applying knowledge and understanding) 2. Analyze the level of competition within an industry and determine is implications for an information systems strategy; (Applying knowledge and understanding) 3. Understand the impact of the advent of the internet on the management of information within and between organizations; (Knowledge and understanding) 4. Identify the various phases in the development of an information system; (Applying knowledge and understanding) 5. Model simple and moderately complex business processes with a formal modeling technique (Petri nets); (Making judgements) (Applying knowledge and understanding) 6. Analyze process models with respect to various behavioral properties. (Lifelong learning skills)

Inhoud vak

No organization can do without information systems. For some organizations, such systems are even of strategic relevance, as they offer a clear competitive advantage. Think, for example, of how Amazon has become such a dominant retailer or how an organization as Uber has conquered the taxi market. This course explains the relevance and use of information systems in modern organizations. We will briefly sketch how the role of information systems has developed over the years to reach its current ubiquitous level. Special attention is devoted to the rise of the internet and its impact on traditional organizations, as well as the emergence of new types of (cloud-based) organizations. Reasoning from the organizational importance of information systems, we will look into the way information systems are developed such that organizations can achieve their objectives. We will pay considerable attention to an important phase in information system development, namely how we analyze and model business processes. For this purpose, we will rely on the use of classical Petri nets. This course will

approach the topic of information management in breadth and in depth. Breadth is achieved by giving an overview of all relevant topics in the area of information management; depth is attained by introducing students to a powerful, formal modeling technique that they will learn to master in the context of organizational analysis.

Aanvullende informatie onderwijsvormen

This course consists of lectures and practicals. Attendance is not mandatory but highly encouraged.

Toetsvorm

Midterm exam (30%) and final exam (70%). Resit option: If a student fails to obtain a 5.5 or more in the course grade calculated as the rounded, weighted average of the midterm (30%) and the final exam (70%) grades, she or he can participate in a resit exam, in which case the course is graded solely by the resit exam grade.

Literatuur

1. "Business Information Systems: Analysis, Design and Practice", 6th edition, Graham Curtis and David Cobham. ISBN: 9780273713821. 2. "Modeling Business Processes", Wil van der Aalst and Christian Stahl. ISBN: 9780262015387 (print), 9780262296465 (eBook).

Aanvullende informatie doelgroep

BSc Computer Science (year 2)

Information Retrieval

Vakcode	X_400435
Studiepunten	6
Periode	P2
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. T. Kuhn MSc
Examinator	dr. T. Kuhn MSc
Betrokken Docenten	dr. T. Kuhn MSc
Onderwijsvormen	Werkcollege, Deeltentamen schriftelijk, Hoorcollege

Doel vak

In the end of this course, students will: - understand how search engines and other information retrieval systems work (knowledge and understanding); - understand the general principles and methods of information retrieval systems (knowledge and understanding); - have aquired some basic skills and experiences in programming important aspects of information retrieval systems (apply knowledge and understanding)

Inhoud vak

This course covers the core aspects of information retrieval and search engines, including indexing, Boolean retrieval, the different types of queries, query execution, the vector space model, web crawling, networks, link analysis, PageRank, classification, and clustering.

Aanvullende informatie onderwijsvormen

Lectures, which are video-recorded, and practical sessions. The lecture recordings are made available through Canvas afterwards. Physical presence in the lectures is recommended but not mandatory. The practical sessions provide help for the assignments and are optional.

Toetsvorm

Six programming assignments in Python (5% of final grade each) and final exam in the form of a multiple-choice test (70% of final grade). The final exam needs to be completed with a passing grade, in order to pass the course. There is no resit for the programming assignments.

Vereiste voorkennis

Basic programming skills are expected (in Python). Students without previous programming experience should

reserve additional time in the weeks before the course start to learn the basics of Python programming on their own.

Literatuur

"Introduction to Information Retrieval" by Manning, Raghavan and Schütze. The book can be found online: http://nlp.stanford.edu/IR-book/

Aanvullende informatie doelgroep

Minor Business Analytics and Data Science

Inleiding Inspanningsfysiologie

Vakcode	B_IF
Studiepunten	6
Periode	P1
Vakniveau	100
Onderwijstaal	Nederlands
Faculteit	Fac. der Gedrags- en Bewegingswetensch.
Vakcoördinator	dr. J.J. de Koning
Examinator	dr. J.J. de Koning
Betrokken Docenten	dr. H.L. Gerrits, prof. dr. H.A.M. Daanen, drs. B.L. van Keeken, dr. J.J. de Koning
Onderwijsvormen	Practicum, Hoorcollege, Bijeenkomst, Werkcollege

Doel vak

Doel van dit vak is het verkrijgen van kennis van de bouw en werking van organen en orgaansystemen die een rol spelen bij het bewegen en de energiehuishouding. Na afloop van de cursus kan de student de belangrijkste onderdelen van deze organen en orgaansystemen benoemen, de bouw en werking van deze onderdelen benoemen en de werkingsmechanismen beschrijven. Daarnaast kan de student deze kennis toepassen tijdens het meten van verschillende variabelen tijdens rust en inspanning. Ten slotte is de student in staat de uitkomsten van de metingen te interpreteren en te verwerken.

Inhoud vak

Tijdens de colleges wordt, na een inleiding, de bouw en de werking van van de voor het bewegen belangrijkste fysiologische systemen, zoals de bloedsomloop, de ademhaling, de spieren, het zenuwstelsel en de hormoonhuishouding besproken. Daarbij wordt zowel het functioneren tijdens rust als tijdens fysieke inspanning besproken. Bij de practica wordt de theoretische kennis verder uitgebreid en toegepast bij het registreren van de stofwisseling in rust, het ECG en de bloeddruk, de verschillende longvolumina en ademhalingsparameters, de hartfrequentie tijdens fysieke inspanning, het lichamelijk prestatievermogen, het dagelijkse energieverbruik en de dagelijkse voedselopname.

Aanvullende informatie onderwijsvormen

De cursus bestaat uit hoorcolleges welke dienen ter verduidelijking van de leerstof. Deze colleges zijn niet verplicht maar wel behulpzaam voor de bestudering van de leerstof. Door middel van vraagstukken en opdrachten wordt verder inzicht in de leerstof verkregen. De opdrachten moeten worden ingeleverd. Daarnaast volgt iedere student een aantal werkgroepen en practica. De practica zijn verplicht en dienen ter aanvulling op de collegestof en bieden bovendien de gelegenheid om de kennis van de leerstof toe te passen en te verdiepen. Voorwaarde voor deelname aan het practicum is dat de student voor elke bijeenkomst steeds de betreffende stof in het boek en de cursushandleiding bestudeerd heeft. Na elke practicumbijeenkomst wordt het practicum door iedere student uitgewerkt aan de hand van een opdracht (inhoud en tijdstip van inleveren volgens de richtlijnen in de cursushandleiding). Het is niet toegestaan een practicumbijeenkomst bij te wonen indien de opdracht van de vorige bijeenkomst nog niet is ingeleverd. 40 uur/ 20 hoorcolleges 12 uur/ practica en werkgroepen 20 uur / uitwerking, opdracht practicum 3 uur / tussentoets 3 uur/ eindtoets 90 uur / zelfstudie

Toetsvorm

De tentamenstof beslaat de hoofdstukken van het boek ("Exercise Physiology: nutrition, energy, and human performance") zoals besproken tijdens de hoorcolleges, de diverse practica en de studiehandleiding. Om deel te kunnen nemen aan het tentamen dient men aan de practicumverplichtingen te hebben voldaan. Deze verplichtingen zijn: alle practicumbijeenkomsten (actief) volgen, de bijbehorende opdrachten (voldoende) maken. Het tentamencijfer zal bestaan uit een gemiddelde van de tussen- en de eindtoets. De tussentoets wordt

halverwege de cursus gegeven. Beide toetsen worden schriftelijk afgenomen en bestaan uit meerkeuze en open vragen.

Literatuur

De verplichte literatuur bestaat uit: - W.D. McArdle, F.I. Katch, V.L. Katch: Exercise Physiology: nutrition, energy, and human performance , 8th edition (2014). International edition. - De cursushandleiding

Overige informatie

De practica zijn verplicht. Deelname aan het tentamen is alleen mogelijk als alle practicumbijeenkomsten zijn gevolgd en de betreffende opdrachten zijn ingeleverd. Bij het eventuele missen van een practicumbijeenkomst of opdracht met een geldige reden dient zo spoedig mogelijk contact opgenomen te worden met de practicumbegeleiders voor het plannen van een inhaalbijeenkomst.

Afwijkende intekenprocedure

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

Inleiding programmeren (Python)

Vakcode	X_401096
Studiepunten	6
Periode	P2
Vakniveau	100
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	ir. M.P.H. Huntjens
Examinator	dr. A.J. van der Ploeg MSc
Betrokken Docenten	ir. M.P.H. Huntjens, dr. A.J. van der Ploeg MSc, J. Veltman
Onderwijsvormen	Deeltentamen schriftelijk, Hoorcollege, Practicum

Doel vak

The goal of this course is to teach students to solve problems using structured programming (Knowledge and understanding) (Apply knowledge and understanding).. Learning Python is actually a side effect that happens because the programming language to practice structured programming happens to be Python.

Inhoud vak

During this course, students learn to write program in Python using types (int, boolean, float, list and str), expressions, assignment statements, if-statements, iterations (while- and for-statement), They also learn standard functions, module math, as well as how to make functions, perform I/O, make classes and use objects.

Aanvullende informatie onderwijsvormen

Lectures and practicals.

Toetsvorm

Four problems that have to be made during the practical. There is no resit for the practical, but students that finished three out of the four problems, can finish the fourth problem in period 5. If the grade P for the practical is a pass, and if the grade E for the exam is also a pass grade, a final grade F will be calculated with the formula max(E, (2*E + P) / 3).

Literatuur

An on line book is used (How to Think Like a Computer Scientist, Learning with Python 3, by Jeffrey Elkner, Allen B. Downey, and Chris Meyers) see URL: http://openbookproject.net/thinkcs/python/english3e/index.html

Aanvullende informatie doelgroep

BSc Artificial Intelligence (year 1)

Afwijkende intekenprocedure

Choosing a TA and scheduling will be done in the beginning of the first week of period 2. There will be 2 hours of practical for module 1 and 6 hours practical for the module 2 - 6.

Inleiding Psychologie (UM)

Vakcode	P_UINLPSY
Studiepunten	6
Periode	P1
Vakniveau	100
Onderwijstaal	Engels
Faculteit	Fac. der Gedrags- en Bewegingswetensch.
Vakcoördinator	dr. W. Donk
Examinator	dr. W. Donk
Betrokken Docenten	dr. W. Donk
Onderwijsvormen	Hoorcollege

Doel vak

Een eerste kennismaking met het vakgebied psychologie

Inhoud vak

Het vak geeft een overzicht van de psychologie. Wat is de genetische en biologische basis van gedrag? Wat is bewustzijn? Hoe zien we, leren we, onthouden we en denken we? Waarom gedragen we ons zoals we doen? Naast deze fundamentele vragen zullen o.a. ook de volgende onderwerpen aan bod komen: intelligentie, sociale psychologie, de ontwikkeling, persoonlijkheidsleer, psychopathologie en psychologische behandelmethoden.

Aanvullende informatie onderwijsvormen

Twee keer per week hoorcollege Contacturen: 168 (28 college, 3 examen, 137 zelfstudie)

Toetsvorm

- Multiple choice tentamen

Literatuur

Gazzaniga, M.S. (2018). Psychological Science (6th edition). Norton.

Overige informatie

Hoorcolleges worden Engelstalig aangeboden.

Internet Governance

Vakcode	R_InternGov
Studiepunten	6
Periode	P1
Vakniveau	200
Onderwijstaal	Engels
Faculteit	Faculteit der Rechtsgeleerdheid
Vakcoördinator	mr. T.H.A. Wisman
Examinator	mr. T.H.A. Wisman
Betrokken Docenten	mr. T.H.A. Wisman
Onderwijsvormen	Hoorcollege, Werkgroep

Doel vak

At the end of this course students: • Understand the basics of the Internet; • Understand the challenges posed by the Internet to (national) regulation; • Understand and be able to apply the modalities of Lessig; • Understand and be able to apply the models of Solum; • Understand what Internet governance is, both in the broad and the narrow sense and explain how they relate; • Have a basic knowledge of the different schools in Internet Governance

(paternalism, libertarianism and communitarianism); • Know European law and case law regarding privacy, freedom of expression and copyright, and be able to apply to this Lessig's modalities and Solum's models.

Inhoud vak

The first half of this interdisciplinary course the focus is on the (legal) challenges and problems introduced by the internet. The course shall first identify the special characteristics of the internet in an effort to demonstrate and discuss the associated challenges. Besides identifying and subsequently discussing (legal) challenges, this course will also treat different models of internet governance, both legal and non--legal, which can be used in developing a critical mind towards possible solutions. Additionally, the course shall cover modalities of regulation as introduced by Lawrence Lessig. The second half of this course deals with specific legal subjects: freedom of expression, privacy and copyright. In this half we delve deeper in these various subjects, the specific challenges that arise in the context of the internet and the developments in case law. The models of internet governance and modalities of regulation will be used in this stage to apply on these subjects and reflect on them.

Aanvullende informatie onderwijsvormen

Lectures and tutorials.

Toetsvorm

Exam

Literatuur

Amongst others: L. Lessig, Code and Other Laws of Cyberspace (Basic Books, New York 2006) L.B. Solum, Models of Internet Governance Material will be made available on Canvas before the start of the course.

Aanvullende informatie doelgroep

Apart from regular students, the course is also available for: Students from other universities/faculties Exchange students Contractor (students who pay for one course)

Interpreting Information in Text by Humans and Machines

Vakcode	L_PABAALG005
Studiepunten	6
Periode	P2
Vakniveau	200
Onderwijstaal	Engels
Faculteit	Faculteit der Geesteswetenschappen
Vakcoördinator	dr. E. Maks
Examinator	dr. E. Maks
Betrokken Docenten	dr. E. Maks
Onderwijsvormen	Werkcollege, Hoorcollege

Doel vak

In this course, students are trained in systematic text analysis. In particular, we explore the process of identifying and annotating information in historic and contemporaneous texts such as novels, lyrics, letters, newspaper articles, movie scripts, blogs and other social media texts using manual and automatic methods. By the end of the course : * students are able to formulate a humanities or social analytics research question that can be answered by the information found in a (set of) texts of their choice and identify this information in the text. * students are able to make the relevant information explicit by carrying out a linguistic annotations task. They know how to perform this task following methods for annotation schema design, and inter-annotator agreement calculations and using annotation tools (CAT). * students are able to build and apply basic text mining techniques (in particular sentiment and emotion analysis) to find the relevant information automatically. * students are able to reflect on the results of the automatic analysis by performing a qualitative and quantitative error analysis. * students are able to present their findings in a research paper.

Inhoud vak

This module addresses the process of systematic text analysis through (1) human annotation and (2) automatic analysis using text mining techniques. Annotations make information that is implicit in data explicit, allowing researchers to explore their data, identify patterns and answer various research questions in a methodologically

sound way. It also requires the use of some type of interpretation model and it results in an analysis that can be compared across annotators. The degree to which annotators agree or disagree (the so-called Inter Annotator Agreement) tells us something about the reproducibility of the interpretation process, the matureness of theoretical notions and the criteria used to apply them to real data. Text mining techniques can be used to automatically find the same or similar information in text. Some of these techniques are off the shelf software, but most of them need to be built or fine-tuned to carry out a specific task. How do these techniques work? Can a machine do better than humans? Is it possible to use the automatic annotations to extract useful informations from the text and to answer research questions?

Aanvullende informatie onderwijsvormen

Lectures, Seminars (2 hrs a week each)

Toetsvorm

Weekly assignments and a final research paper.

Vereiste voorkennis

Python (basics)

Aanvullende informatie doelgroep

3rd year bachelor students, in particular in Humanities, Social Science and Computer Science. Students in the Minor Digital Humanities and Social Analytics.

Afwijkende intekenprocedure

This module is taught at the VU. Module registration at the VU is required.

Introduction to Computer Science

Vakcode	X_401087
Studiepunten	3
Periode	P1
Vakniveau	100
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	prof. dr. ir. H.E. Bal
Examinator	prof. dr. ir. H.E. Bal
Betrokken Docenten	dr. A. Mehrabi, dr. J.C. Blanchette, prof. dr. ir. H.E. Bal
Onderwijsvormen	Bijeenkomst, Werkcollege, Hoorcollege

Doel vak

After following the course, you will - gain a broad and robust understanding of typical main topics in computer science - learn the basic skills for computer science studies and research - practice your skills on reading and presenting (English) scientific articles and critical/analytical thinking about CS topics.

Inhoud vak

The course consists of two parts: lectures and group activities. In the (guest) lectures it will be made clear what modern computer science is about and which ideas and techniques are involved. In addition, two tutorial sessions on basic CS skills (e.g., Linux, Shell, git) will be given. These basic CS skills will be helpful in later courses and research. In the group activities you will work under guidance on a few computer science topics in a group. On one of the topics you will give a presentation by processing scientific literature. The groups also form the mentor group in which attention is paid to academic skills and reflection on your own learning and study.

Aanvullende informatie onderwijsvormen

Lectures, guest lectures, tutorials, work groups (all mandatory, 4 hours per week)

Toetsvorm

The grading (pass/fail) is based on your active participation in the group activities and your attendance of the

(mandatory) guest lectures.

Literatuur

Articles handed out at work groups.

Aanvullende informatie doelgroep

1CS

Introduction to Data Science

Vakcode	XB_0018
Studiepunten	6
Periode	P1
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. D. Spagnuelo
Examinator	dr. D. Spagnuelo
Betrokken Docenten	dr. D. Spagnuelo, drs. E.M. Maassen MSc
Onderwijsvormen	Werkcollege, Hoorcollege

Doel vak

At the end of the course the students will be able to: Knowledge and Understanding: - Explain the scope of the field of Data Science, and the phases that a data science project goes through. - Reason about the role of feature detection and selection, labels, supervised and unsupervised learning algorithms. - Understand the basic principles of: regression methods; neural networks; k-NN; clustering; decision trees and random forests. Applying knowledge and understanding: - Implement suitable feature detection and selection methods, and two of the above (un)supervised algorithms accordingly in order to prevent under- and overfitting. - Present conclusions of their own data science project with suitable visualisation methods. Making judgements: - Explain ethical issues and dilemmas around data collection and usage. Communication skills: - Collaborate with peers in oral presentation, writing assignments and practical data science projects. Learning skills: - Test and validate the choices of algorithms and methods in their own data science projects.

Inhoud vak

This introductory course will provide an overview of the field of Data Science. We will discuss the different specialties within data science and the ethical issues that arise around data collection and use. The student will understand the daily activities of a data scientist, and get hands-on experience with a first data science project. The lectures will be given by many different people: scholars of different specialities, and people who work in data science teams of big and small companies.

Aanvullende informatie onderwijsvormen

Lectures and Guest-Lectures (2x week), Practical sessions (1x week).

Toetsvorm

There will be ungraded assignments (pass/fail construction), one graded group project, and one graded individual exam. Ungraded: - Practical assignments in Python. - Peer assessment of essays. - For each lecture: formulation of one exam question with answer about the lecture topic. Graded: - Short essay on a possible data science project - 20% - ‘Kickstarter’ Data Science Project - 30% - Exam - 50%

Literatuur

Book: - Grus, J.(2019). Data science from scratch: First principles with Python. O'Reilly Media. Additional materials: - Additional reading material will be provided through Canvas.

Aanvullende informatie doelgroep

Minor Data Science Minor Business Analytics & Data Science

Aanbevolen voorkennis

Knowledge of statistical methods and Python is highly recommended.

Introduction to Digital Humanities and Social Analytics

Vakcode	L_AABAALG076
Studiepunten	6
Periode	P1
Vakniveau	200
Onderwijstaal	Engels
Faculteit	Faculteit der Geesteswetenschappen
Vakcoördinator	dr. H.M.E.P. Kuijpers
Examinator	dr. H.M.E.P. Kuijpers
Betrokken Docenten	dr. H.M.E.P. Kuijpers, dr. C.M. van den Akker
Onderwijsvormen	Werkcollege, Hoorcollege

Doel vak

At the end of this course the student • Has a global idea of recent developments in the field of data digitization and research in the fields of digital humanities and social analytics • Understands the complexity and challenges of (global) data developments • Understands the relevance of data-oriented research for humanities and social sciences • Is able to critically evaluate the use of digital data in humanities and social science research and to reflect on the implications of the selection, structuring and manipulation of data for the outcome of their own work • Has a basic knowledge of data formats and ontologies • Is able to apply various computational techniques for cleaning, parsing and structuring / modelling of digital data • Is aware of disciplinary differences among students of humanities, social science, informatics and other academic fields and is equipped to work in multi-disciplinary teams

Inhoud vak

This course consists of three modules: 1 Study of current developments in the digital humanities and social analytics through reading, evaluation and discussion 2 Introduction to hermeneutics, data criticism and tool criticism. 3 Practice in working with structured data, data curation and modelling The humanities and social sciences have more and more digital material at their disposal. Increasingly literature, newspapers, archival sources as well as library and museum catalogues become available in digital formats. Meanwhile digital born data from social media, news media government bodies and all sorts of institutions allow scholars to work with enormous amounts of new data on human behavior and communication. How can humanities researchers and social scientists use digital data to support their research? What are the digital tools at their disposal and how can these tools provide new perspectives and research questions? In this course you will be introduced to this cross-disciplinary research field, to the data collections, computational tools and methods used. In class we will also discuss what is really new about digital humanities and social analytics and evaluate both the promises and the limits of some digital methods. Hermeneutics is the theory of interpretation. We will discuss hermeneutics in relation to source-criticism and evaluate what the methodological and theoretical implications are of the use of digitized data, quantitative methods and large datasets. A first step in data-oriented research is a critical understanding of the providence, characteristics, shape and limits as well as the potential of a given dataset. In this course, students will familiarize with the ‘research data lifecycle’: Starting with the critical analysis of how data are generated or how they are created through digitization of original sources (objects), how data are formatted and structured, how they can be cleaned and annotated, how they can be modelled and analyzed, and finally documented, stored and published. Practical choices that are to be made in the course of this process have crucial implications for the way data can be used in research. In class we will discuss the use of ontologies and different data formats and data models. Practical problems such as the heterogeneity of humanities and social media data, incompleteness, disambiguation, partiality and bias will be discussed as well.

Aanvullende informatie onderwijsvormen

Classes will consist of a combination of bi-weekly lectures, excursions, discussion, interdisciplinary group work and hands-on practicals (1 x 3.45 (practicals & excursions); 1x 1.45 hours (lectures and literature). Students are required to attend at least 80% of the classes. Students who fail to do so without a valid reason will be excluded from the course.

Toetsvorm

Practical group assignments (40%) and written exam (60%).

Literatuur

Workbench Digital Humanities VU: http://www2.fgw.vu.nl/dighum/ Further readings will be announced through CANVAS

Aanvullende informatie doelgroep

Students who take the University Minor ‘Digital Humanities and Social Analytics’. As long as there are available places, we welcome other students of all disciplines, including international exchange students. Please contact the coordinator in advance.

Introduction to Digital Innovation

Vakcode	E_MM_IDI
Studiepunten	6
Periode	P1
Vakniveau	200
Onderwijstaal	Engels
Faculteit	School of Business and Economics
Vakcoördinator	dr. J. van Angeren
Examinator	dr. J. van Angeren
Betrokken Docenten	dr. J. van Angeren
Onderwijsvormen	Werkcollege, Hoorcollege

Doel vak

ACADEMIC SKILLS: Develop the ability to critically understand and examine theories and concepts relating to digital innovation, and the relationship between technological developments and innovation. KNOWLEDGE: Develop a fundamental understanding of the domain of digital innovation, and the main trends and issues that permeate it. More specifically, students will gain knowledge concerning the following: • What digital innovation is, and how it is different from other forms of innovation; • the fundamental building blocks of hardware, software, and networking that underpin digital innovation; • how emerging technologies such as big data, social media, mobile, cloud computing and the Internet of Things relate to digital innovation; • the impact of digital innovation for work, organizations, and society. BRIDGING THEORY AND PRACTICE: Develop the ability to use the elementary characteristics and theories of digital innovation to explain the fast-paced digital transformation of industries. Master the technological fundamentals to conceive of and develop innovative digital tools. SOCIAL SKILLS: Being able to effectively work in teams, and communicate on project results both through presentation and writing.

Inhoud vak

Digital innovations are ever present in today's society, from smartphones to home automation and from cloud computing to artificial intelligence. Digital innovations have transformed the way organizations do business and the way in which people work and make decisions. In broad terms, digital innovations can be defined as newly perceived products, processes, and business models that are somehow embodied in or enabled by information technology. This course provides an introduction to the domain of digital innovation. The course covers the fundamental technological developments, including those in hardware, software, and networking, that have given rise to digital innovation. It discusses the general architecture and theories of digital innovation to understand how such innovations are realized and managed in practice. The course also touches upon some of the ways in which digital innovations such as analytics and algorithms affect decision-making and work in organizations. Throughout the course, many practical examples of digital innovations will be discussed. Students will apply their knowledge about digital innovation in practice through the development of an innovative digital tool to solve a business problem.

Aanvullende informatie onderwijsvormen

Lectures Case tutorials

Toetsvorm

Individual exam Group project assignment

Literatuur

Various papers that will be made available through Canvas.

Introduction to Python for Humanities and Social

Sciences

Vakcode	L_AABAALG075
Studiepunten	6
Periode	P1
Vakniveau	200
Onderwijstaal	Engels
Faculteit	Faculteit der Geesteswetenschappen
Vakcoördinator	dr. H.D. van der Vliet
Examinator	dr. H.D. van der Vliet
Betrokken Docenten	dr. P.J.M. Sommerauer, dr. M.C. Postma, dr. H.D. van der Vliet
Onderwijsvormen	Werkcollege

Doel vak

Goals of this course: • Get to know the basics of the Python programming language • Make a start with becoming an independent programmer, who is able to find solutions to new problems Skills you will acquire during this course: - Learn how to develop Python code using Jupyter notebooks as well as Python modules (.py files) - Learn how to make your own code project - Learn how to create readable code that can be understood by others - Learn how to debug your code - Learn how to deal with unstructured textual data - Learn how to perform linguistic processing with established NLP pipelines

Inhoud vak

During this course, you will learn how to analyze text data using the Python programming language. No programming knowledge is required; we believe that anyone can learn how to program. You will learn how to extract information from text corpora; deal with different file types (plain text, CSV, JSON). We will focus on readability and understandability of your code so that you will be able to share it with others, and reuse your code in the future.

Aanvullende informatie onderwijsvormen

The course is organized in blocks. Blocks typically follow this routine: - Lecture 1: introduction of concepts in the form of an (interactive) lecture. Students are expected to have worked through preparatory exercises and ask questions in class. - Lecture 2: The lecturer focuses on dedicating time to more difficult concepts from the block. If there is enough time, students can already start working on the assignment. - Lecture 3: the lecture is mostly dedicated to working on the assignment. Students will have the opportunity to ask for help and clarification. The deadline for an assignment is typically soon after this lecture. - Lecture 4: this lecture is a feedback session. The lecturer provides general feedback about the submitted assignments.

Toetsvorm

Individual bi-weekly assignments (60%): The assignments are designed to practice your programming and problem-solving skills. Moreover, they allow us to keep track of your progress, and identify topics that require more attention in class. To pass this course, you need a passing grade (at least 5.5) for the total grade for the assignments. For students who do not reach a passing grade, there will be an option to submit a retake assignment (which can make up for one of the bi-weekly assignments). Final exam (40%): The final exam is designed to test your knowledge of Python. To pass this course, you need a passing grade (at least 5.5).

Vereiste voorkennis

There are no prerequisites to take this course. We advise against using Netbooks or Tablets for this course since you will need to use the command line and execute Python code.

Literatuur

To be announced on Canvas. All materials are freely available online.

Aanvullende informatie doelgroep

All BA and MA students who want to get acquainted with programming in Python.

Introductory Econometrics for Business and Economics

Vakcode	E_EOR3_IEBE
Studiepunten	6
Periode	P1
Vakniveau	300
Onderwijstaal	Engels
Faculteit	School of Business and Economics
Vakcoördinator	prof. dr. J. Schaumburg
Examinator	prof. dr. J. Schaumburg
Betrokken Docenten	E. D'Innocenzo, prof. dr. J. Schaumburg
Onderwijsvormen	Computerpracticum, Werkgroep, Hoorcollege

Doel vak

By the end of this course students will have had an introduction to modern econometric techniques, that will enable them to conduct an empirical study of their own. In particular, students will be familiar with econometric methods for cross-sectional and panel data, and with real-world applications in macroeconomics, finance and business.

Inhoud vak

First, a review is given of least squares estimation and testing in the simple linear cross-sectional regression model. We discuss the classical assumptions, and the consequences arising when these assumptions are not fulfilled. The linear model with multiple regressors is discussed using matrix notation. Furthermore, we cover maximum likelihood estimation, and models that are nonlinear in variables. Finally, an introduction to panel data analysis is given. Throughout the course, the focus lies on developing an intuition for state-of-the-art econometric concepts. A balance is struck between theoretical derivations and empirical applications. Extensive use is made of the statistical software R, both for in-class illustration and for hands-on exercises. An introduction to R is provided in the tutorial of the first week.

Aanvullende informatie onderwijsvormen

Lectures (4h per week) and tutorials (2h per week). The latter are used to discuss theoretical and practical exercises.

Toetsvorm

Final written exam (85%) and practical assignment (15%)

Literatuur

Main reference: Stock and Watson (2010), "Introduction to Econometrics", Pearson, 3rd edition or newer. Supplementary literature: Wooldridge (2013), "Introductory Econometrics: A Modern Approach", Cengage Learning, Inc. 4th edition or newer.

Aanvullende informatie doelgroep

The course is part of the SBE faculty minor "Applied Econometrics: A Big Data Experience for All". It is targeted at students who are currently not enrolled in Bachelor in Econometrics or a similar study program.

Overige informatie

Participation in this course is a worthwhile preparation for the remaining courses of the Minor "Applied Econometrics: A Big Data Experience for All".

Toelichting Canvas

All materials (slides, theory exercises, practice exams, etc.) are provided on Canvas.

Aanbevolen voorkennis

This course assumes familiarity with probabilistic concepts such as discrete and continuous random variables, conditional expectations, hypothesis testing and central limit theorems, with the basics of matrix calculus, and with the essentials of regression analysis. This material, excluding matrix calculus, corresponds more or less to chapters 1-5 in the book by Stock/Watson (see literature references), and students are recommended to refresh their memory prior to the first lecture.

Islam en Europese cultuur

Vakcode	G_BATRSAL005
Studiepunten	6
Periode	P1
Vakniveau	300
Onderwijstaal	Nederlands
Faculteit	Faculteit Religie en Theologie
Vakcoördinator	dr. ing. H. Quadir
Examinator	dr. ing. H. Quadir
Betrokken Docenten	dr. ing. H. Quadir, dr. M. Aulad Abdellah
Onderwijsvormen	Werkcollege, Hoorcollege

Doel vak

De student: • is in staat de belangrijkste verschillen en overeenkomsten tussen islamitische en westerse jurisprudentie te analyseren; • kan de wederzijdse beeldvorming van westerse en islamitische zijde omtrent de positie van de islam in het Westen onderscheiden en kritisch evalueren en zelf genuanceerde standpunten uitwerken waarbij rekening wordt gehouden met beide perspectieven; • is in staat bepaalde religieuze vraagstukken in de westerse context op een kritische en wetenschappelijke manier te benaderen en te evalueren; • is in staat islamitische jurisprudentie (fiqh) toe te passen in de westerse samenleving inzake bepaalde kwesties.

Inhoud vak

De module focust op de islamitische visies vanuit de fiqh ten aanzien van kwesties waaromtrent moslims in het Westen een positie proberen te bepalen. Het gaat over kwesties als Islamitische ethiek en jurisprudentie, de geschiedenis van de islam en moslims in Europa; het recht van minderheden (fiqh al-aqalliyat); Islam als minderheidsgodsdienst: confrontatie en consensus; de westerse beeldvorming over de Islam; afvalligheid binnen de Islam; de scheiding tussen religie en staat; het ritueel slachten; de jihâd, godsdienstvrijheid, gelijkheid tussen man en vrouw in de islam, vrijheid van meningsuiting in de islam en in liberale democratieën, de relatie tussen moslims en niet moslims in het westen. De voorbeeldfunctie van Andalusië (Spanje) als ontmoetingsplaats voor verschillende religies en culturen in het Westen komt eveneens aan de orde.

Aanvullende informatie onderwijsvormen

Gekozen is voor een werkcollege. Dat betekent dat aanwezigheid verplicht. Er zijn twee colleges per van 2, 45 uur op maandag en woensdag.

Toetsvorm

Het eindcijfer wordt als volgt berekend: - 20% schrijfopdracht (inleveren via Canvas!) - 10 % presentatie - 70 % schriftelijk tentamen

Vereiste voorkennis

Er is geen voorkennis vereist.

Literatuur

Al deze teksten worden geplaatst op Canvas. U hoeft dus zelf geen boeken aan te schaffen!

Aanvullende informatie doelgroep

Dit vak kan door zowel reguliere Bachelor studenten van Religiewetenschappen als door minor studenten worden gevolgd.

Overige informatie

1) In overeenstemming met het examenreglement wordt van u 17 uur per week aan voorbereiding verwacht. 2) Een overmaat aan taal- of grammaticale fouten leidt tot aftrek. Onbegrijpelijke teksten worden geretourneerd. 3) In zes weken worden verschillende teksten gelezen. Al deze teksten worden geplaatst op Canvas. U hoeft dus zelf geen boeken aan te schaffen! Aanwezigheid tijdens de colleges is verplicht. Werkstukken en/of presentaties die niet op tijd en volgens de afspraken zijn ingeleverd, zullen niet worden geaccepteerd, en evenmin worden meegeteld bij de berekening van het eindcijfer. Het tentamen behelst het volgende: - De behandelde onderwerpen vanuit literatuur, de collegeaantekeningen en de werkcolleges - De op het college of via CANVAS verschafte extra stof - Het tentamen zelf bestaat uit tien open essayvragen waarin de student wordt getoetst op de volgende

academische vaardigheden: kennis, vergelijken, analyseren en evalueren. Gedurende de collegereeks zal de docent enkele voorbeeldvragen behandelen. Gezien de huidige situatie en ontwikkelingen rond COVID-19 ligt het in de lijn der verwachtingen dat er een take-home tentamen zal worden afgenomen. Studenten ontvangen hier tijdig instructies voor.

Toelichting Canvas

Alle opdrachten dien te worden ingeleverd via Canvas (dus niet via email).

Aanbevolen voorkennis

Er is geen voorkennis vereist.

Islamitische ethiek

Vakcode	G_BATRSAL049
Studiepunten	6
Periode	P3
Vakniveau	300
Onderwijstaal	Nederlands
Faculteit	Faculteit Religie en Theologie
Vakcoördinator	dr. W. Boender
Examinator	dr. W. Boender
Betrokken Docenten	dr. W. Boender, dr. M. Aulad Abdellah
Onderwijsvormen	Werkcollege, Hoorcollege

Doel vak

Het college bereidt voor op het (zelfstandig en gezaghebbend) vinden van islamitische (biomedische) ethische standpunten en het beoordelen ervan. Na afloop van dit college heeft/is de student: • Inzicht in centrale aspecten van klassieke en hedendaagse methodologieën van islamitische ethiek; • Kennis van recente islamitische debatten rond centrale biomedische ethische vraagstukken; • Inzicht in de verhouding tussen theoretische discussies en dilemma's in de praktijk; • In staat om te discussiëren over de vraag hoe religieus recht en ethiek zich verhouden tot statelijk recht, zowel in islamitische meerderheidssamenlevingen, als in Westerse samenlevingen (in het bijzonder West-Europa en Nederland); • Beheersing van centrale islamitische terminologie in Arabische transcriptie.

Inhoud vak

Centraal in de islam staat het ethisch handelen van de individuele gelovige en van de moslimgemeenschap als manier om God te dienen. Geleerden hebben methodologieën ontwikkeld om uit de bronnen van de islam te destilleren wat de juiste handelswijze is. Door de tijd heen is er voortdurend sprake geweest van het opkomen van nieuwe vragen (nawâzil) die om een standpunt vroegen wat ethisch handelen was. In dit college richten we ons met name op het terrein van de (bio)medische ethiek. Door de snelle toename van technologische mogelijkheden, is de complexiteit van de vragen en ethische dilemma's enorm toegenomen. We bespreken in deze cursus standpunten binnen de islamitische ethiek omtrent abortus, orgaandonatie en palliatieve zorg. De cursus biedt de student inzicht in centrale religieuze ethische kaders en in (veranderende visies op) rechtswetenschappelijke methodologieën. De studenten bespreken diverse artikelen die zowel vanuit deelnemers- als vanuit waarnemingsperspectief zijn geschreven. Centrale vragen zijn: Hoe komen geleerden tot een beslissing? Hoe zien deze beslissingen eruit? Hoe worden ze gecommuniceerd naar gelovigen? Hoe wordt omgegaan met diversiteit in opvattingen – bijvoorbeeld tussen wetscholen? Hoe kunnen we de herkomst van een ethisch advies (fatwa) herkennen en beoordelen? Hoe krijgen dilemma's rond ethisch handelen vorm in de Nederlandse praktijk van gezondheidszorg?

Aanvullende informatie onderwijsvormen

Twaalf hoor-/werkcolleges gedurende drie weken. In de vierde week bereiden de studenten zich voor op de eindtoets en maken zij de eindopdracht. De student bereidt ieder college voor d.m.v. het lezen van verplichte literatuur en het maken van bijbehorende opdrachten. Daarbij wordt gewerkt met peerfeedback. De student werkt één opdracht verder uit tot een eindopdracht. Er geldt een aanwezigheidsplicht.

Toetsvorm

Actieve deelname aan de hoor- en werkcolleges (10%). Schriftelijke toets; in het geval van online-only zal dit een online afgenomen take-home tentamen zijn (60%). Eindopdracht (30%).

Literatuur

Literatuur

Literatuur wordt nader bekend gemaakt via Canvas.

Islamitische theologie/Kalam

Vakcode	G_BATRSAL027
Studiepunten	6
Periode	P2
Vakniveau	300
Onderwijstaal	Nederlands
Faculteit	Faculteit Religie en Theologie
Vakcoördinator	dr. M. Ajouaou
Examinator	dr. M. Ajouaou
Betrokken Docenten	dr. M. Ajouaou
Onderwijsvormen	Werkcollege, Hoorcollege

Doel vak

De student - kan het ontstaan en de ontwikkeling van Kalām scholen (Islamitische theologie) beschrijven; - kan tenminste 5 discussiepunten onder de belangrijkste moslimtheologen uit de klassieke periode (700-1200) van islamitische theologie/ Kalām weergeven; - kan de algemene principes van de islam en de principes van de mu‘tazila en de repliek van Ash‘ariyya benoemen en uitleggen; - kan het verschil tussen islamitische scholen weergeven; - kan de theologische uitgangspunten van verschillende oude en nieuwe islamitische stromingen vergelijken en analyseren; - de student leert aan de hand van casuïstiek methodieken (kennen) om de toepassing van Kalām te vergemakkelijken - de studenten zijn vertrouwd met het brede spectrum en de verschillende dimensies (leer, praxis, zingeving, ethiek. ideologie) van de islamitische religiositeit en de plaats van Kalām daarin. - De student kan daarnaast het voorgaande in de huidige context plaatsen (Te ontwikkelen) vaardigheden met toelichting: A) Academische vaardigheden: Analyseren, logisch redeneren, vraagstelling formuleren, literatuuronderzoek doen, praktijkonderzoek opzetten, stage uitvoeren; zelfstandig leren studeren. B) Methodologische vaardigheden: Onderzoekmethodieken van verschillende vakdisciplines toepassen; onderzoeksresultaten analyseren, interpreteren en beoordelen; vergelijken van religieuze tradities (met het oog op dialoog). C) Hermeneutische vaardigheden: Interpreteren van bedoelingen in levensbeschouwelijke teksten en praktijken; integreren in en confronteren met bestaande theorieën; eigen theoretische positiebepaling verwoorden. D) Vakkennis beschikken: Vakkennis op het gebied van de eigen religie, levensbeschouwing en van die van anderen; vakkennis van religiewetenschappen; vakkennis van relevante aanverwante wetenschappen. E) toepassingsvaardigheden (link met de praktijk): Analyseren van actuele kwesties; aanleveren van achtergrondinformatie bij actuele kwesties; professionele vaardigheden qua presentatie. F) Communicatieve vaardigheden: Schrijven, presenteren, uitleggen, feedback geven, een dialoog kunnen aangaan. G) Integratievaardigheden (algemene ontwikkeling): Belang van het vakgebied kunnen uiteenzetten in een bredere maatschappelijke of wetenschappelijke context; wetenschappelijke en maatschappelijke ontwikkelingen kunnen inbrengen in het eigen vakgebied. H) Zelfreflectie: Eigen levensbeschouwelijke positie verwoorden en in verband brengen met andere posities.

Inhoud vak

De definities van de islamitische godsdienst, betekenis van de islamitische geloofsbelijdenis, enkele belangrijke islamitische begrippen, de zes geloofspunten en de zuilen van de islam, het begrip God en goddelijke eigenschappen, profeetschap in de islam, hiernamaals, de predestinatieleer en de vrije wil, goed en kwaad (ethiek), het begrip ‘majeure zonden’ en de meetlat van geloof en secularisatie. De belangrijkste principes van de pre-Kalām scholen (Khawārdij en Mardji’a, Quadarriya en Djabriyya) en Kalām scholen (Mu‘tazila, Asj’ariyya en Maturdiyya) komen aan de orde. Toepassing van de opgedane inzichten op de hedendaagse religiositeit van moslims geschiedt middels casuïstiek, opdrachten en discussie in werkgroepen.

Aanvullende informatie onderwijsvormen

Hoorcolleges en werkcolleges

Toetsvorm

Opdrachten (werkcolleges), paper en schriftelijke eindtoets.

Vereiste voorkennis

Geen

Literatuur

- Tim Winter, (ed.), Classical Islamic Theology. Cambridge: Cambridge University Press, 2008.- (digitaal te raadplegen via de universiteitsbibliotheek) - Mohamed Ajouaou (2014), Wie is moslim? Geloof en secularisatie onder westerse moslims. Zoetermeer: Meinema, 2014 (beschikbaar op canvas) - Syllabus.

Aanvullende informatie doelgroep

Alle doelgroepen

Key Strategies in Disability and Neuropathy

Vakcode	AB_1045
Studiepunten	6
Periode	P1
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. M.M. Waltz
Examinator	dr. M.M. Waltz
Betrokken Docenten	dr. M.M. Waltz
Onderwijsvormen	Hoorcollege, Werkgroep

Doel vak

• Gain insight into the issues and intervention strategies concerning common causes of impairment, using neuropathy as a model • Gain insight into strategies for the prevention of impairment and disability, rehabilitation and inclusion • Gain insight into various philosophical ideas about the meaning of disability and diversity: how people experience disability, and what this means for the choices that matter (in management, policy and personal life) • Gain insight into the rights of persons with disabilities • Gain insight into how these ideas are influenced by innovations in the field of biomedical sciences • Practice research skills during the problem-based learning sessions, including: participating in scientific discussions, formulation of research objectives, literature research, abstracting, presenting, summarising and giving feedback on findings • Practice research skills through Community Service Learning, including working in partnership with disabled people, semi-structured observation, and accessible communication of results • Develop skills in formulating lines of argumentation verbally and in the form of an essay and through problem-based learning

Inhoud vak

All over the world, people with impairments and illnesses experience activity limitations and have difficulties participating in society due to barriers, including physical barriers, legal and policy barriers, and psychological and social barriers, such as stigma. When people with an impairment or illness face barriers they cannot easily overcome, they experience disablement. The scale of this problem is huge. The World Health Survey and the Global Burden of Disease estimate state the prevalence of disability as 15.6% and 19.4%, respectively (WHO, 2011). This course looks at issues surrounding disability. We will review relevant theories and models related to disability, including the medical model, social model and ICF model. During the course you will investigate questions such as ‘What is disability?,’ ‘What is normal?,’ ‘How do different worldviews influence how people see disability?,’ and ‘What is my own worldview?’. Disorders that affect the nervous system (neuropathies) are responsible for many forms of impairment. Neuropathies that are important in this course include diabetes, leprosy, intellectual disability, autism, mental illness, spina bifida and cerebral palsy. It is important to understand that there are differences of opinion about these conditions: for example, many people consider autism and some forms of mental functioning that can be labelled as mental illness to be variant, but normal, forms of neurological function, while others consider them impairments that should be eliminated. Different interventions and technologies, and various health and support policies and practices, have been developed to address health issues and remove the social and environmental barriers that affect disabled people. During the 20th and 21st centuries, developments and innovations in health and life sciences have resulted in an exponential growth in scientific knowledge about people, society and the environment. The idea that we know who we are seems to increase, but is this truly the case? For example, what does having a disability mean for a person’s identity, and what does the existence of disability mean for our dominant image of human nature, or the drive for standardization or even perfection? Innovations bring forth possibilities for new interventions and technological gadgets (e.g. bionic prosthetics, cochlear implants, microchips that enhance intelligence), but how do we select and use these? Who decides what is appropriate for whom? In this course you will learn to reflect on various theories related to disability, and think critically about strategies to address the medical and social problems faced by people diagnosed with a neuropathy.

Aanvullende informatie onderwijsvormen

Aanvullende informatie onderwijsvormen

- Lectures (20 hours) - Work groups (24 hours) - Community Service Learning project (6 hours) - Self-study (remaining hours)

Toetsvorm

- Individual exam (60%) - Community Service Learning project (30%) - Participation in workgroups (problem-based learning) (10%) All three parts need to be passed individually.

Literatuur

There are 1-2 compulsory readings per lecture (an overview of these readings will be provided on Canvas). Also, the information gathered by you and your classmates for the workgroups is part of the study material.

Aanvullende informatie doelgroep

Bachelor students from Biomedical Sciences, Health & Life, Health Sciences, bachelor programs in the natural sciences, and similar bachelor programs that participate in the minor Biomedical and Health Interventions or in the minor Global Health. Students from other programmes are welcome.

Klassiekers in Context 1

Vakcode	L_AABAALG080
Studiepunten	6
Periode	P1+2
Vakniveau	100
Onderwijstaal	Nederlands
Faculteit	Faculteit der Geesteswetenschappen
Vakcoördinator	dr. M.J.E. van Tooren
Examinator	dr. M.J.E. van Tooren
Betrokken Docenten	dr. M.J.E. van Tooren, dr. J.J.M. van Stralen
Onderwijsvormen	Werkcollege, Hoorcollege

Doel vak

Kennismaken met een aantal belangrijke literaire werken uit de Nederlandse en internationale canon en in staat zijn deze te analyseren met behulp van een literatuurtheoretisch instrumentarium; het leren herkennen van verhalende structuren waarmee thema's en motieven tot uitdrukking worden gebracht in literaire teksten en bewerkingen (film, toneel, graphic novel etc) daarvan; het leren herkennen en beschrijven van maatschappelijke en ethische dilemma's in literatuur; leren een onderbouwd schriftelijk oordeel te geven over een literaire tekst.

Inhoud vak

In dit college onderzoek je aan de hand van verschillende klassiek geworden teksten wat literatuur is en welke functies zij vervult en je leert daar zakelijk over te schrijven (blog en recensie). Literatuur is een kunstvorm die je, in bijzondere taal, met behulp van bijzondere verteltechnieken, in de huid laat kruipen van andere mensen, andere werelden en andere tijden. Literatuur geeft een esthetisch genoegen, is verbonden met schoonheid, maar is ook verbonden met vormen van zingeving. Het is een kunstvorm die je iets leert over de wereld waarin we leven, ook als het gaat over vroeger tijden. Literatuur verbindt, kan troost bieden, kan je zelfs laten lachen, maar laat je ook nadenken over de grote thema's: liefde, dood, verlies, geluk – en over jezelf, want het verhaal van de ander is ook relevant voor je eigen levensverhaal. Deze collegereeks begint met een inleiding over het belang van het verhaal binnen en buiten de literatuur, daarna lees je enkele bekende Nederlandse en buitenlandse werken, gekoppeld aan de thema's literatuur en engagement, trauma en troost. Uitgangspunt is dat een literair werk een op zichzelf staand kunstwerk is, waarin een bijzondere stijl en verteltechnieken centraal staan, maar de teksten worden ook in verband gebracht met bredere thema's en maatschappelijke vraagstukken. Docenten gaan telkens in op het Nachleben van een literaire tekst, in de vorm van toneel, film, graphic novel, musical. Aan de hand hiervan schrijven de studenten een eigen blog voor leeftijdgenoten.

Aanvullende informatie onderwijsvormen

Hoor- en werkcollege (1 x 2 uur per week)

Toetsvorm

Tijdens het college houd je een blog (leesdagboek) bij over de gelezen boeken, waarin je je leeservaring beargumenteert en een persoonlijk onderbouwd oordeel geeft over de besproken romans (50% van het eindcijfer); aan het eind van periode 1 schrijf je een recensie over een van de besproken romans; vanzelfsprekend kan hier ook je persoonlijk oordeel in doorklinken (50% van het eindcijfer).

Literatuur

De te lezen primaire en secundaire teksten worden voor aanvang van de cursus in Canvas bekendgemaakt.

Aanvullende informatie doelgroep

De minor staat open voor alle studenten, van binnen en van buiten de VU.

Overige informatie

Deze cursus is een verplicht onderdeel van de minor ‘De Schrijfacademie’. Daarnaast volgen de studenten ‘Klassiekers in context 2 (6 EC), ‘Multatuli multicultureel’ (6 EC), ‘Het Rijksmuseum’ (6 EC), ‘Creatief schrijven’ (6 EC) en ‘De schrijversparade’ (3 EC).

Klassiekers in context 2

Vakcode	L_AABAALG081
Studiepunten	3
Periode	P3
Vakniveau	200
Onderwijstaal	Nederlands
Faculteit	Faculteit der Geesteswetenschappen
Vakcoördinator	dr. M.J.E. van Tooren
Examinator	dr. M.J.E. van Tooren
Betrokken Docenten	dr. M.J.E. van Tooren, dr. J.J.M. van Stralen
Onderwijsvormen	Hoorcollege, Werkcollege

Doel vak

Kennismaken met een aantal belangrijke literaire werken uit de Nederlandse en internationale canon en in staat zijn deze te analyseren met behulp van een literatuurtheoretisch instrumentarium; het leren herkennen van verhalende structuren waarmee thema’s en motieven tot uitdrukking worden gebracht in literaire teksten en bewerkingen (film, toneel, graphic novel etc) daarvan; het leren herkennen en beschrijven van maatschappelijke en ethische dilemma’s in literatuur; leren een onderbouwd mondeling oordeel te geven over een literaire tekst.

Inhoud vak

In dit college onderzoek je aan de hand van verschillende klassiek geworden teksten wat literatuur is en welke functies zij vervult en je leert daar zelf een presentatie over te houden. Literatuur is een kunstvorm die je, in bijzondere taal, met behulp van bijzondere verteltechnieken, in de huid laat kruipen van andere mensen, andere werelden en andere tijden. Literatuur geeft een esthetisch genoegen, is verbonden met schoonheid, maar is ook verbonden met vormen van zingeving. Het is een kunstvorm die je iets leert over de wereld waarin we leven, ook als het gaat over vroeger tijden. Literatuur verbindt, kan troost bieden, kan je zelfs laten lachen, maar laat je ook nadenken over de grote thema’s: liefde, dood, verlies, geluk – en over jezelf, want het verhaal van de ander is ook relevant voor je eigen levensverhaal. Deze collegereeks sluit aan bij het onderdeel ‘Klassiekers in context 1’; je leest enkele bekende en meeslepende Nederlandse en buitenlandse werken, gekoppeld aan de thema’s literatuur en oorlog, literatuur en multiculturaliteit, vaders en zonen. Uitgangspunt is dat een literair werk een op zichzelf staand kunstwerk is, waarin een bijzondere stijl en verteltechnieken centraal staan, maar de teksten worden ook in verband gebracht met bredere thema’s en maatschappelijke vraagstukken. Docenten gaan telkens in op het Nachleben van een literaire tekst, in de vorm van toneel, film, graphic novel, musical.

Aanvullende informatie onderwijsvormen

Hoor- en werkcollege (1 x 2 uur per week)

Toetsvorm

Schriftelijk tentamen aan het eind van periode 2 over de gehele reeks (70% van het eindcijfer); presentatie met PowerPoint in periode 3 over een ‘klassieker’ naar keuze (30% van het eindcijfer).

Literatuur

Literatuur

De te lezen primaire en secundaire teksten worden voor aanvang van de cursus in Canvas bekendgemaakt.

Aanvullende informatie doelgroep

De minor staat open voor alle studenten, van binnen en van buiten de VU.

Overige informatie

Deze cursus is een verplicht onderdeel van de minor ‘De Schrijfacademie’. Daarnaast volgen de studenten ‘Klassiekers in context 1 (3 EC), ‘Multatuli multicultureel’ (6 EC), ‘Het Rijksmuseum’ (6 EC), ‘Creatief schrijven’ (6 EC) en ‘De schrijversparade’ (3 EC).

Knowledge and Data

Vakcode	X_400083
Studiepunten	6
Periode	P1
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. V. de Boer
Examinator	dr. V. de Boer
Betrokken Docenten	dr. K.S. Schlobach, dr. ing. J. Raad, dr. V. de Boer
Onderwijsvormen	Computerpracticum, Hoorcollege, Werkcollege

Doel vak

The objective of the Knowledge and Data course is to make students acquainted with methods and technologies used for expressing knowledge and data, in particular on the Web. By the end of this course, students will have built an intelligent web application that queries and reasons over integrated knowledge from various sources obtained from the Web. All of this will be based on formal logic theory. Knowledge and Insights: Theory of Knowledge, Data and Information, Knowledge Graphs, Semantic Web technology stack, Ontology Engineering, Web Application Design Application of Knowledge and Insights: Integration of acquired knowledge in an intelligent semantic data driven web application. Judgement: The ability to assess the value of available datasets and ontologies for web applications, and to choose the appropriate technology for a specific application. Communication: The ability to write a report about a developed application. Learning skills: The skill to acquire and apply knowledge and skills about fundamental knowledge representation concepts as well as state-of-the art technology.

Inhoud vak

In this course, we study formalisms that are useful and necessary to represent knowledge and data, in particular when these knowledge and data are to be reused, e.g. published and consumed on the web. We introduce the technologies and representation formats (RDF, RDFS, OWL) for expressing semantics and linked data in a web-accessible format, use the SPARQL query language to query over this data, and build a Web application that uses the data for some intelligent task. Even though content on the web is generally produced from structured data sources (databases), its representation is in a form that is meant for human consumption. Linked Data allows to scale the walls of this siloed information space, by reusing identifiers and vocabularies across these datasets, and presenting that information in a way that is appropriate for machine consumption. Google, Bing and Yahoo already use this type of linked, structured information to improve web search and information retrieval. But it also helps content providers, such as the BBC, to better augment their content with content from other sources (e.g. from Musicbrainz).

Aanvullende informatie onderwijsvormen

The course consists of (interactive) lectures and lab sessions. Students will work on individual assignments in the first half of the course. They will also collaborate in groups for a final project assignment.

Toetsvorm

The final grade will be determined by a grade for the foundational material (individual assignments and partial exams) for 50% as well as the final group project (report) 50%.

Literatuur

Recommended: A Semantic Web Primer (3rd edition) Grigoris Antoniou, Paul Groth, Frank van Harmelen and Rinke Hoekstra, MIT Press, September 2012

Aanvullende informatie doelgroep

B Artificial Intelligence year 2 B Information Sciences year 2 B Econometrics & Operations Research (elective course) Minor Bioinformatics & Systems Biology (elective course) B Business Analytics (constrained choice)

Aanbevolen voorkennis

Basic programming (Python, Javascript), Web development, (Formal) Modeling (Basic propositional and predicate logic)

Law and Ethics of Reproductive Technologies

Vakcode	R_LERT
Studiepunten	6
Periode	P3
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Rechtsgeleerdheid
Vakcoördinator	prof. dr. mr. B.C. van Beers
Examinator	prof. dr. mr. B.C. van Beers
Betrokken Docenten	prof. dr. mr. B.C. van Beers
Onderwijsvormen	Werkcollege

Doel vak

This interdisciplinary course explores the bioethical, biolegal and biopolitical dilemmas that are raised by technological developments at the intersection of reproductive medicine and genetics. This course will enable the student to critically reflect upon legal and ethical dimensions of current public debates on the regulation of assisted reproductive technologies. This course will teach the student to come to an understanding of the key concepts and categories within legal regulation of reproductive technologies, and to connect these with various normative ethical theories. Through an examination of the existing legal frameworks surrounding reproductive and genetic technologies from the perspectives of law and bioethics against the background of ongoing contemporary political and societal discussions, the student will be trained to integrate ethical reasoning, daily practices and legal rules and regulations into a normative evaluation of these technologies. In this process the student will be encouraged to take a legally and ethically argued position in scientific debates on current developments in the field of assisted reproductive technologies through written and oral presentations of a legal and philosophical nature.

Inhoud vak

Technologies at the intersection of reproductive medicine and genetics offer news ways of creating human life. These technologies make it possible to assemble, genetically screen, choose and, possibly, even design one’s future children. How can societies decide who may access these technologies to create which kinds of children? Which rights, whose rights and which public values should be taken into account within the regulation of this complex field? And what are the legal and ethical limits to these currently emerging forms of 'liberal eugenics'? The general focus in this course will be on the role and meaning of human rights and human dignity for the regulation of assisted reproductive technologies. Topics in this course include: - law and ethics of prenatal testing - selective reproduction and ‘designer babies’ - reproductive markets and reproductive tourism - reproductive rights - gestational and commercial surrogacy - wrongful life claims - the welfare of future children - sperm and egg cell donation - eugenics and human enhancement - the status of embryos and gametes As students in this course are invited to discuss recent reproductive technologies and trends against the background of legal, ethical and societal approaches, this course fits in very well with the VU law school's focus on 'law in action'.

Aanvullende informatie onderwijsvormen

This 3 week course will be taught through interactive tutorials of each 2,5 hours.

Toetsvorm

Written open-book exam.

Vereiste voorkennis

Vereiste voorkennis

No special knowledge of law, philosophy or bioethics is required to be able to participate in this course. A basic knowledge of human rights and a keen interest in the contemporary dilemmas surrounding reproductive technologies are a plus.

Literatuur

All literature will be made available on Canvas, and will include legal and philosophical academic literature, legal and political documents, policy reports, news articles and audiovisual materials.

Aanvullende informatie doelgroep

Because this course is also part of a university minor (Technology, Law and Ethics), it is open to students from various academic backgrounds. Apart from regular students, the course is also available for: Students from other universities/faculties Exchange students Contractor (students who pay for one course)

Linear Algebra

Vakcode	X_400649
Studiepunten	6
Periode	P4
Vakniveau	200
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	prof. dr. J. Hulshof
Examinator	prof. dr. J. Hulshof
Betrokken Docenten	prof. dr. J. Hulshof
Onderwijsvormen	Werkcollege, Practicum, Hoorcollege

Doel vak

Besides to be able to explain, interrelate, know the basic properties of, and construct simple arguments with the concepts listed above, the student will learn the following skills (organized by topic): Linear systems: Can solve systems of linear equations using row-reduction Can determine the number of solutions of a linear system Can prove or disprove simple statements concerning linear systems Linear transformations: Can determine if a linear transformation is one-to-one and onto Can compute the standard matrix of a linear transformation Can use row-reduction to compute the inverse of a matrix Can prove or disprove simple statements concerning linear transformations Subspaces and bases Can compute bases for the row and column space of a matrix Can compute the dimension and determine a basis of a subspace Can prove or disprove simple statements concerning linear systems Eigenvalues and eigenvectors Can compute the eigenvalues of a matrix using the characteristic equation Can compute bases for the eigenspaces of a matrix Can diagonalize a matrix Can prove or disprove simple statements concerning eigenvalues and eigenvectors Orthogonality Can compute the orthogonal projection onto a subspace Can determine an orthonormal basis for a subspace using the Gramm-Schmidt algorithm Can solve least-squares problems using an orthogonal projection Can orthogonally diagonalize a symmetric matrix Can compute a singular value decomposition of a matrix Can prove or disprove simple statements concerning orthogonality

Inhoud vak

The topics that will be treated are listed below. For every topic, the relevant concepts are listed. Linear systems: linear system (consistent/inconsistent/homogeneous/inhomogeneous), (augmented) coefficient matrix, row equivalence, pivot position/column, (reduced) echelon form, basic/free variable, spanning set, parametric vector form, linear (in)dependence. Linear transformations: linear transformation, (co)domain, range and image, standard matrix, one-to-one and onto, singularity, determinant, elementary matrices. Subspaces and bases: subspace, column and null space, basis, coordinate system, dimension, rank. Eigenvalues and eigenvectors: eigenvalue, eigenvector, eigenspace, characteristic equation/polynomial, algebraic multiplicity, similarity, diagonalization and diagonalizability. Orthogonality: dot product, norm, distance, orthogonality, orthogonal complement, orthogonal set/basis, orthogonal projection, orthonormality, orthonormal basis, Gramm-Schmidt process, least squares problem/solution, orthogonal diagonalization, singular value/vector, singular value decomposition, Moore-Penrose inverse.

Aanvullende informatie onderwijsvormen

The course is spread over a period of seven weeks. Each week there will be two theoretical classes of 90 minutes

each and two exercise classes of 90 minutes each.

Toetsvorm

There is a written exam at the end of the course.

Vereiste voorkennis

None.

Literatuur

Linear Algebra and its Applications, by David C. Lay, Steven R. Lay en Judi J. McDonald, global edition (fifth edition), Pearson.

Aanvullende informatie doelgroep

CS2, AI2, IS2

Aanbevolen voorkennis

None.

Literaire receptie klassieke verhalen

Vakcode	L_AABAALG202
Studiepunten	6
Periode	P1
Vakniveau	200
Onderwijstaal	Nederlands
Faculteit	Faculteit der Geesteswetenschappen
Vakcoördinator	dr. M.J.E. van Tooren
Examinator	dr. M.J.E. van Tooren
Betrokken Docenten	dr. M.J.E. van Tooren
Onderwijsvormen	Hoorcollege, Werkcollege, Practicum

Doel vak

Kennismaken met een aantal beroemde klassieke mythen en verhalen, met actualiseringen daarvan in de West-Europese literatuur en met de manier waarop je deze receptie en de intertekstuele relaties die daardoor ontstaan, kunt bestuderen. Opzetten en uitvoeren van een klein onderzoek naar een 'receptiecasus' en daarvan schriftelijk verslag uitbrengen.

Inhoud vak

Uitgangspunt van dit onderdeel is een klein corpus van klassieke mythologische verhalen, zoals het lot van Andromache na de val van Troje, de zwerftochten van Odysseus en de rol van Penelope, de liefde tussen Orpheus en Eurydice, de razernij van Medea en het verhaal van Oidipous en zijn familie. We lezen bekijken de oorspronkelijke verhalen, te vinden bij schrijvers als Homeros, Ovidius, Vergilius, Aischylos, Sophokles en Euripides en gaan daarbij in op de filosofische, ethische, politieke en religieuze kwesties die zij in hun werk aankaarten. Vervolgens kijken we hoe schrijvers door de eeuwen heen (denk aan Racine, Atwood, Lanoye, Hermans) met dit gedachtegoed omgaan en het gebruiken om hun eigen visie op genoemde (en andere) kwesties weer te geven.

Aanvullende informatie onderwijsvormen

Hoorcollege en werkcollege (2x2 uur per week). In de hoorcolleges geeft de docent in de eerste week een theoretische inleiding over receptie en intertekstualiteit en in de weken daarna inleidingen op de mythen en de te bestuderen auteurs, met tevens aandacht voor de receptie van de verhalen in de beeldende kunst. Tijdens de werkcolleges wordt de secundaire literatuur besproken en worden voorbeeldcasussen uitgewerkt. Daarbij wordt van de studenten een actieve inbreng verwacht.

Toetsvorm

Verplichte aanwezigheid (80% van de colleges) en actieve participatie, blijkend uit inbreng tijdens de discussie over

de voorbeeldcasussen. Wie te vaak afwezig is geweest, maar daarvoor een gegronde reden had, krijgt een vervangende opdracht. Schriftelijk werkstuk over een 'receptiecasus'. De eisen waaraan dit werkstuk moet voldoen, staan vermeld in de studiehandleiding.

Literatuur

De precieze lijst met te lezen teksten wordt voor aanvang van de cursus bekend gemaakt in de studiehandleiding op Canvas.

Aanvullende informatie doelgroep

Verplicht onderdeel van de minor 'Aan de slag met literatuur'. De overige onderdelen zijn 'Meesterwerken uit de wereldliteratuur' (1 en 2; elk 6 EC), 'Schrijvershuisbezoeken' (6 EC) en 'Creative Writing' (6 EC).

Logic and Modelling

Vakcode	X_401015
Studiepunten	6
Periode	P5
Vakniveau	200
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. J.C. Blanchette
Examinator	dr. J.C. Blanchette
Betrokken Docenten	dr. R.Y. Lewis, dr. J.C. Blanchette
Onderwijsvormen	Hoorcollege, Deeltentamen schriftelijk, Practicum, Werkcollege

Doel vak

The course objective is to obtain a good knowledge and understanding of the most important logical systems: propositional logic, predicate logic and modal logic. The students learn to use these systems to model data, knowledge and actions. An important aspect of the course is the ability to reason using these logics and reason about these logics: what can and what can not be expressed with a logic system, and what are the differences between the systems with respect to expressive power or the existence of decision procedures.

Inhoud vak

The focus of the lecture is on propositional logic and first-order predicate logic. We work with natural deduction as proof system. The relation between semantic and syntactic methods is important; the central keywords are correctness, consistency and completeness. Moreover, we pay attention to expressive power, for example when formulating queries. A fundamental tool, for this purpose, is the compactness theorem. Algorithmically there the contrast between the decidability of propositional logic and the undecidability of predicate logic (for example, seen by a coding of the Post Correspondence Problem). As a variation of the mentioned logics, we consider modal logic with Kripke models as semantics.

Aanvullende informatie onderwijsvormen

Lecture (3 hours per week) Exercise classes (3 hours per week) Computer practicum using the Lean proof assistant, done during exercise classes

Toetsvorm

Final exam (100%) and computer assignments using the Lean proof assistant (required to qualify for the exam, and .5 bonus points for doing extra problems.)

Literatuur

Mandatory: Jeremy Avigad, Robert Y. Lewis, Floris van Doorn, Logic and Proof https://avigad.github.io/logic_and_proof/ Michael Huth, Mark Ryan, Logic in Computer Science (2nd edition) Cambridge University Press, 2004 ISBN 0 521 54310 X

Aanvullende informatie doelgroep

2CS

Aanbevolen voorkennis

Aanbevolen voorkennis

Logic and Sets

Logic and Sets

Vakcode	X_401090
Studiepunten	6
Periode	P4
Vakniveau	100
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	prof. dr. W.J. Fokkink
Examinator	prof. dr. W.J. Fokkink
Betrokken Docenten	dr. O. Fabert, prof. dr. W.J. Fokkink
Onderwijsvormen	Werkcollege, Hoorcollege, Deeltentamen schriftelijk

Doel vak

After completing this course, the student can 1. express logical statements in propositional and predicate logic 2. reason about the meaning of such formulas through truth tables and models 3. argue formally whether one formula implies another one, or that they are equivalent 4. reduce a propositional formula to disjunctive or conjunctive normal form 5. express propositional formulas in logic circuits and OBDDs Furthermore, the student is able to 6. reason about set constructions through Venn diagrams and the algebra of sets 7. construct and interpret formal, graphic, and matrix representations of sets, relations and functions 8. determine and argue whether a. a relation is reflexive, transitive, symmetric or antisymmetric. b. a relation is an ordering relation, equivalence relation, or a function c. a function is injective or surjective 9. construct and interpret compositions of relations (or functions) and their inverses 10. construct a proof by mathematical induction

Inhoud vak

The sets part of the course starts by introducing the concepts of sets, Venn diagrams, product sets and relations. The student then learns the main characteristics and properties of three particular types of relation: ordering relations, equivalence relations and functions. The sets part concludes with a study of the principle of mathematical induction. The logic part focuses in the first place on propositional logic: truth tables, boolean operators, functional completeness, logical puzzles, SAT-solving, logic circuits and OBDDs. In addition the student will learn the meaning and use formulas of predicate logic, to express mathematical properties and sentences from natural language.

Aanvullende informatie onderwijsvormen

Every week, there is one 2-hour lecture and one 2-hour tutorial for the logic part of the course, and one 2-hour lecture and one 2-hour tutorial for the sets part of the course.

Toetsvorm

A written midterm exam (40% of the grade) and a written final exam (60% of the grade). For both the midterm and the final exam, at least a 5.0 must be achieved. (And the overall mark must be at least 5.5.) The resit exam covers all material of the course. It is not possible to resit only the midterm exam or only the final exam of the course.

Literatuur

All course materials are provided via Canvas.

Aanvullende informatie doelgroep

1CS, 1LI, 1IMM

Logistics Analysis

Vakcode	X_401084
Studiepunten	6
Periode	P2
Vakniveau	300

Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. ir. S. Dabia
Examinator	dr. ir. S. Dabia
Betrokken Docenten	dr. ir. S. Dabia
Onderwijsvormen	Hoorcollege, Werkcollege, Practicum

Doel vak

The course Logistics Analysis is an exciting course that will challenge you in various ways. By taking Logistics as a point of departure, we bring together several perspectives and analyze business problems faced by logistics companies. Taking a logistics perspective will stimulate you to think about organizations in a different way, bringing together knowledge from different fields and realizing that this creates challenges and conflicts that managers need to deal with. You will learn to systematically describe logistical systems, and identify problems that emerge in these systems. Moreover, this course offers you a number of tools that allow you to analyze logistical systems, optimize them, (re)design them and assess the consequences of suggested improvements. Important topics such as production management, inventory management, and maintenance management are addressed, which are essential, hands-on tools any logistics professional should be able to work with. Course Objectives: The overall objective of the course Logistics Analysis is to furnish you with knowledge and skills to analyze logistics problems in a variety of industries including manufacturing, transportation and services. More specifically, we expect that upon completion of the course you are able to: - Understand and explain (the importance of) logistical systems and their complexity; - Analyze, model, and optimize real-life logistical systems by applying quantitative tools; - Interpret and discuss the use of these tools in specific logistics situations as well as their general strengths and weaknesses; - Write a clear management report containing useful recommendations for the management of a logistical company; - Clearly report your work: analysis, modelling, solution approach, computational results, and managerial insights.

Inhoud vak

The course Logistics Analysis consists of a set of modules, each module covers a specific topic. The covered modules are: Module 0: Introduction to Logistics Module 1: Forecasting Module 2: Production Management Module 3: Inventory Management Module 4: Maintenance Management Module 5: Transportation Management Module 6: Simulation Game

Aanvullende informatie onderwijsvormen

Lectures and tutorials

Toetsvorm

Assignments (50% of the final grade) Written examination (50% of the final grade)

Literatuur

Provided via Canvas

Aanvullende informatie doelgroep

3BA

Machine Learning

Vakcode	X_400154
Studiepunten	6
Periode	P4
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. P. Bloem
Examinator	dr. P. Bloem
Betrokken Docenten	dr. P. Bloem
Onderwijsvormen	Hoorcollege, Werkcollege

Doel vak

Upon completion of this course, students will: - get acquainted with the dominant concepts of machine learning methods, including some theoretical background. (Knowledge and understanding) - acquire knowledge of established machine learning techniques such as Linear Models, Support Vector Machines, Decision Trees and Neural Networks. (Knowledge and understanding) - learn some statistical techniques to assess and validate machine learning results. (Apply knowledge and understanding) (Make judgements)

Inhoud vak

Machine Learning is the discipline that studies how to build computer systems that learn from experience. It is a very active subfield of Artificial Intelligence that intersects with statistics, cognitive science, information theory, and probability theory. Recently, Machine Learning has gained great importance for the design of search engines, robots, and sensor systems, and for the processing of large scientific data sets. Further applications include handwriting or speech recognition, image classification, medical diagnosis, stock market analysis and bioinformatics.

Aanvullende informatie onderwijsvormen

The course consists of two parts: a written exam and a practical assignment. The written exam is supported by lectures (two per week) and optional homework assignments (one per week). The practical assignment is supported by small exercises to help with the relevant technologies, and informal weekly presentations. A large amount of the material is freely available at mlvu.github.io The practical assignment is made in groups of five. No resit is possible for the practical assignment. The course will be taught in English.

Toetsvorm

Exam (50%) and a project report (50%).

Literatuur

Some reading material will be provided digitally.

Aanvullende informatie doelgroep

B Econometric and Operation Research optional Courses B Information Science year 3 compulsory courses B Business Analytics year 3 compulsory courses B Computer Science year 3 compulsory courses B Artificial Intelligence year 3 compulsory courses M Bioinformatics and Systems Biology optional courses B Artificial Intelligence year 3 B AI track Intelligent Systems

Aanbevolen voorkennis

We recommend that students have some prior experience with Linear Algebra, Calculus (limited to differentiation), and Probability Theory (or Statistics). A basic understanding will suffice and we will take some time to go over the basics again. Feel free to register if you have no experience with any of these, but expect to put in a little extra effort in the first weeks. Programming experience, preferably in python, is highly recommended, but not strictly necessary.

Mechanics and Thermodynamics in the Cell

Vakcode	X_422589
Studiepunten	6
Periode	P2
Vakniveau	400
Onderwijstaal	Nederlands
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	prof. dr. ir. E.J.G. Peterman
Examinator	prof. dr. ir. E.J.G. Peterman
Betrokken Docenten	prof. dr. ir. E.J.G. Peterman
Onderwijsvormen	Werkcollege

Doel vak

- To provide insight in how the basic tools and knowledge of physics and physical chemistry (in particular mechanics, statistical physics and thermodynamics) and mathematics can be used to better understand biology on

the cellular and molecular level. - To be able to understand and build quantitative models that provide a deeper insight in living systems. - To provide insight in how quantitative data obtained from microscopic imaging methods can be used to increase the understanding of biological systems.

Inhoud vak

- Biology by Numbers - Mechanical and Chemical Equilibrium in the Living Cell - Entropy Rules! - Two-State Systems: From Ion Channels to Cooperative Binding - Random Walks and the Structure of Macromolecules - Beam Theory: Architecture for Cells and Skeletons - The Mathematics of Water - A Statistical View of Biological Dynamics

Aanvullende informatie onderwijsvormen

Lectures (4h per week) & Tutorials (2h per week)

Toetsvorm

Written exam + written test on part of the course contents.

Literatuur

Phillips, R., Kondev, J., and Theriot, J., Physical Biology of the Cell. 2nd Edition New York: Garland Science, 2012 (ISBN 0815344503). (1st edition is also fine)

Aanvullende informatie doelgroep

3N, 3MNW mi-BB, 3WN, 3S

Overige informatie

This course is part of the Minors Biomedische Beeldvorming and Bioinformatics and Systems Biology.Mathematics: Calculus & Mathematische Methoden (or comparable) Physics: basics of mechanics & thermodynamics

Aanbevolen voorkennis

Mathematics: Calculus & Mathematische Methoden (or comparable) Physics: basics of mechanics & thermodynamics

Meesterwerken uit de wereldliteratuur 1

Vakcode	L_AABAALG077
Studiepunten	6
Periode	P1
Vakniveau	200
Onderwijstaal	Nederlands
Faculteit	Faculteit der Geesteswetenschappen
Vakcoördinator	dr. M.J.E. van Tooren
Examinator	dr. M.J.E. van Tooren
Betrokken Docenten	dr. M.J.E. van Tooren, dr. M.H. Koenen
Onderwijsvormen	Hoorcollege

Doel vak

Kennismaking met de belangrijkste periodes en stromingen binnen de West-Europese literatuur vanaf de Oudheid tot en met de 18e eeuw aan de hand van klassiek geworden meesterwerken.

Inhoud vak

Elke week, dat wil zeggen vóór elk college, leest de student een literair 'meesterwerk' met bijbehorende secundaire literatuur. Bij de bespreking van elke tekst gaan we in op de redenen waarom deze als een meesterwerk wordt beschouwd: status in het literaire veld, literaire prijzen, aandacht in wetenschappelijke studies, receptie. Soms zal de docent naast het te lezen meesterwerk ook enkele fragmenten uit andere canonieke teksten uit de betreffende periode/stroming bespreken.

Aanvullende informatie onderwijsvormen

Hoorcollege met discussie (1x3 uur per week).

Toetsvorm

Schriftelijk tentamen aan het eind van periode 1

Literatuur

Na een algemene inleiding over theoretische kwesties als periodisering, classificering en canonvorming worden vijf teksten besproken. Bij het publiceren van de studiegids waren nog niet alle keuzes van de docenten voor een meesterwerk bekend. De definitieve lijst zal zo snel mogelijk op Canvas bekend worden gemaakt, maar je kunt denken aan titels als: Lucretius (selectie uit zijn werk); Tristan en Isolde; Vondel, Lucifer; Milton, Het paradijs verloren (Paradise Lost); Defoe, Robinson Crusoe. De teksten mogen zowel in de oorspronkelijke taal als in vertaling gelezen worden. De te lezen secundaire literatuur wordt via Canvas bekend gemaakt.

Aanvullende informatie doelgroep

De minor staat open voor alle studenten. Het vak is ook los te volgen.

Overige informatie

Deze module is een verplicht onderdeel van de minor 'Aan de slag met literatuur'. Daarnaast volgt de student de onderdelen 'Meesterwerken uit de wereldliteratuur 2', 'Literaire receptie van klassieke verhalen' 'Schrijvershuisbezoeken' en 'Creative Writing' (alle vier 6 studiepunten). Er is verplichte aanwezigheid (minimaal 80% aanwezigheid). Dit onderdeel vormt inhoudelijk één geheel met Meesterwerken uit de wereldliteratuur 2, maar kan wel zelfstandig gevolgd worden. In dit eerste deel komt de literatuur van de Klassieke Oudheid tot en met de 18e eeuw aan bod; in het tweede deel staan de 19e tot en met de 21e eeuw centraal.

Meesterwerken uit de wereldliteratuur 2

Vakcode	L_AABAALG078
Studiepunten	6
Periode	P2+3
Vakniveau	300
Onderwijstaal	Nederlands
Faculteit	Faculteit der Geesteswetenschappen
Vakcoördinator	dr. M.J.E. van Tooren
Examinator	dr. M.J.E. van Tooren
Betrokken Docenten	prof. dr. F.M. Doorman, dr. M.J.E. van Tooren, prof. dr. J.H.C. Bel
Onderwijsvormen	Werkcollege, Hoorcollege

Doel vak

Kennismaking met de belangrijkste periodes en stromingen binnen de West-Europese literatuur van de 19e tot en met de 21e eeuw aan de hand van klassiek geworden meesterwerken.

Inhoud vak

Elke week, dat wil zeggen vóór elk college, leest de student een literair 'meesterwerk' met bijbehorende secundaire literatuur. Bij de bespreking van elke tekst gaan we in op de redenen waarom deze als een meesterwerk wordt beschouwd: status in het literaire veld, literaire prijzen, aandacht in wetenschappelijke studies, receptie. Soms zal de docent naast het te lezen meesterwerk ook enkele fragmenten uit andere canonieke teksten uit de betreffende periode/stroming bespreken.

Aanvullende informatie onderwijsvormen

Hoorcollege met discussie (1x3 uur per week), gedurende periode 2; eigen presentatie van een literair meesterwerk in periode 3. het rooster van deze presentaties (1x3 uur per week) wordt op Canvas bekend gemaakt

Toetsvorm

Schriftelijk tentamen aan het eind van periode 2 (70% van het eindcijfer). Mondelinge presentatie aan het eind van periode 3 (30% van het eindcijfer). Voor beide onderdelen moet minimaal een 5,5 worden behaald.

Literatuur

In dit college worden zes teksten besproken. Bij het publiceren van de studiegids waren nog niet alle keuzes van de docenten voor een meesterwerk bekend. De definitieve lijst zal zo snel mogelijk op Canvas bekend worden gemaakt, maar je kunt denken aan titels als: Goethe, Die Leiden des jungen Werthers/Het lijden van de jonge Werther; Hugo, Notre Dame de Paris/De klokkenluider van de Notre Dame; Flaubert, Madame Bovary; Thomas Mann, Der Zauberberg/De toverberg; Oscar Wilde, The Picture of Dorian Gray/Het portret van Dorian Gray; Couperus, De stille kracht; Michel Houellebecq, Soumission/Onderworpen. De teksten mogen zowel in de oorspronkelijke taal als in vertaling gelezen worden. De te lezen secundaire literatuur wordt via Canvas bekend gemaakt.

Aanvullende informatie doelgroep

De minor staat open voor alle studenten. Het vak is ook los te volgen.

Overige informatie

Deze module is een verplicht onderdeel van de minor 'Aan de slag met literatuur'. Daarnaast volgt de student de onderdelen 'Meesterwerken uit de wereldliteratuur 1', 'Literaire receptie van klassieke verhalen', 'Schrijvershuisbezoeken' en 'Creative Writing' (alle vier 6 studiepunten). Er is verplichte aanwezigheid (minimaal 80% aanwezigheid). Dit onderdeel vormt inhoudelijk één geheel met Meesterwerken uit de wereldliteratuur 1, maar kan wel zelfstandig gevolgd worden. In het eerste deel komt de literatuur van de Klassieke Oudheid tot en met de 18e eeuw aan bod; in dit tweede deel staan de 19e tot en met de 21e eeuw centraal.

Mind and Machine

Vakcode	AB_1060
Studiepunten	6
Periode	P3
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. L.N. Cornelisse
Examinator	dr. L.N. Cornelisse
Betrokken Docenten	prof. dr. K. Linkenkaer Hansen, dr. L.N. Cornelisse
Onderwijsvormen	Hoorcollege, Werkgroep, Computerpracticum, Excursie

Doel vak

To introduce the students to the basic principles of brain modelling, artificial intelligence, and brain computer interfacing, discussing the practical applications as well as the ethical, moral, and philosophical aspects. Specifically, at the end of the course the student should be able to: 1. explain the meaning of key concepts treated in the course and to give examples of where key concepts are already applied (services or products). 2. describe most commonly used forms of, as well as recent trends in, brain modeling, AI and BCI as discussed in the course. 3. reproduce the underlying principles of brain modelling, AI and BCI at the level discussed in the course. 4. develop, present and defend a business proposal, i.e., an idea for a product or service that exploits the technologies and concepts presented in the course. 5. formulate a scientifically informed opinion about the ethical aspects of AI and BCI.

Inhoud vak

What is intelligence and what is unique about human intelligence? People have always been fascinated with the idea to create intelligent computers and robots and to integrate computers in the brain to enhance its performance. In recent years these technologies have become so advanced that they become more and more present in our daily live, from the personal assistant in your smart phone, to smart software in self-driving cars, to portable EEG headsets. Many see this as the start of a new era where smart machines will be completely integrated in our society, taking over many tasks and services now still done by humans. More dystopian views on the integration of human and machine are shown in science fiction films and series like Terminator 3 and Black Mirror. This has led to the realization that intelligence is not unique to humans but can exist in machines, and forces us to reflect on whether computers could ever reach or surpass human level intelligence, or merge with biological brains. , and if the brain can be of inspiration to improve Artificial Intelligence (AI). In this course, the basic principles of brain inspired artificial intelligence, realistic computer simulations of the brain, and brain-computer interfacing (BCI) will be discussed. To investigate one of these topics in more detail students work in groups to start their own virtual start-up company and prepare a business proposal in which they describe a new commercial application of artificial intelligence or brain computer interfacing. The business project is presented to peers and a reviewer during a poster session at the end of the course. In addition, students will gain hands-on experience in computer practicals and an EEG-based neurofeedback competition, and discuss the ethical, moral, and philosophical aspects of

artificial intelligence and brain-computer-interfacing. Disclamer: this course is aimed at students without a background in computer science or AI. It will cover general concepts of AI and BCI, and their impact on society, rather than an in-depth discussion of all technological details.

Aanvullende informatie onderwijsvormen

Lectures 35 hrs Practicals 8 hrs Business project 60 hrs

Toetsvorm

Exam 50% Business project 40% Discussion 10% For all three sub-grades a grade ≥ 5.5 must be obtained. It is not possible to compensate.

Literatuur

To be decided

Aanvullende informatie doelgroep

All students with an interest in the computational abilities of the brain and brain-inspired technology, that do not have a background in Artificial Intelligence or computer science.

Overige informatie

Part of minor Brain and Mind. This minor course requires a minimum of 25 participants to take place. Central Academic Skills: Creative thinking to apply learned knowledge in the design and development of a product or service in the field of mind and machine. Reflecting on acquired knowledge during the course to discuss ethical and philosophical implications.

Aanbevolen voorkennis

Two years of study at bachelor's level. Basic knowledge of neurobiology.

Minor English: English in my own Discipline

Vakcode	L_ETBAALG008
Studiepunten	6
Periode	P3
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Geesteswetenschappen
Vakcoördinator	dr. G.A. Dreschler
Examinator	dr. G.A. Dreschler
Betrokken Docenten	dr. G.A. Dreschler
Onderwijsvormen	Werkcollege

Doel vak

You gain insight into features of the English language as used in various text types which are common in your own academic discipline and the professional domains associated with your specialization. After successfully completing this course you will have (i) knowledge of the different types of texts written in your own discipline, either on an academic level or in the professional domain; (ii) insight into linguistic features related to structure, formality and stance in one or two text types in your discipline; and (iii) knowledge of several types of analysis and methods used in genre analysis and corpus linguistics. You will be able to apply these methods independently to a selection of texts from your discipline and use the knowledge gained from these analyses in your own writing.

Inhoud vak

In the first couple of sessions, we will discuss different methods of analysis used in linguistics for analyzing characteristics of texts and apply them to texts. You will then choose one of these methods and apply this in an analysis of a collection of English texts in your own discipline, present the preliminary results of your analysis, and write a final research article in which you report on the analysis, following conventions from linguistic papers.

Aanvullende informatie onderwijsvormen

2 seminars of 2 hours per week in weeks 1 - 3.

Toetsvorm

The grade for this course will be based on the final report (after rewriting) (75%); and the grade for the presentation (25%). In order to pass the course, you need a 5.5 minimum for each component.

Vereiste voorkennis

This course is only available as part of the Minor Engels/Minor in English. Students must have completed Writing 2 before embarking on this course.

Literatuur

Materials will be made available or listed on Canvas.

Aanvullende informatie doelgroep

The Minor Engels/Minor in English as a whole is aimed at bachelor and premaster students across the university who want to improve their written English in an academic context. The Minor is not open for students in the BA programme CIW who are following the specialization in English and international communication (old program) or English Language and Communication Studies (new program).

Overige informatie

Attendance is obligatory (80% minimum). If you miss more classes, you may still be allowed to finish the course if you submit an alternative assignment, but only if you've attended 70% of the classes.

Minor English: Grammar and Writing 1

Vakcode	L_ETBAALG007
Studiepunten	6
Periode	P1
Vakniveau	100
Onderwijstaal	Engels
Faculteit	Faculteit der Geesteswetenschappen
Vakcoördinator	dr. G.A. Dreschler
Examinator	dr. G.A. Dreschler
Betrokken Docenten	dr. G.A. Dreschler, A.J. Gambrel
Onderwijsvormen	Werkcollege, Hoorcollege, Instructiecollege, Werkgroep

Doel vak

After successfully completing this course you will have knowledge of and insight into the language which typifies academic writing in English and into English requirements of text structure, as well as into how these aspects are different from other languages. You have knowledge of and insight into the most important aspects of English grammar, particularly those which typically cause students problems when writing formal English. You will also be able to write a well-structured English text in a formal style about a subject related to your own study programme, free of serious lexical and grammatical error which would have an adverse effect on the readability of the text. You will have greater insight into the strengths and weaknesses of your English writing skills, and knowledge of how to further develop your strengths and reduce your weaknesses.

Inhoud vak

The course consists of a writing and a grammar component. In the writing component of the course the emphasis is on (a) identifying the paragraph structures, sentence structures and kind of language used across a range of academic texts in all kinds of disciplines, and (b) getting to grips with the basic problems involved in writing good, formal English (e.g. differences between English and Dutch/other languages, the essentials of English punctuation, formal style). The grammar component consists of a practical introduction to basic aspects of the grammar of contemporary English, with special attention for the problems that students typically have when writing formal English.

Aanvullende informatie onderwijsvormen

For the writing component: 1 hr per week lecture; 2 hrs per week seminar. For the grammar component: 1 hr per

week lecture; 2 hrs per week seminar.

Toetsvorm

(i) a text of 1000-1200 words on a subject related to the student's own discipline (50%); (ii) a multiple choice computer test on grammar (50%). In order to pass the course, you need a 5.5 minimum for each component.

Vereiste voorkennis

At least one year of university study, including experience in writing academic text; premaster students may also follow this course as long as they have completed an academic skills course.

Literatuur

For the writing component: Hannay, M. & J.L. Mackenzie (2017). Effective Writing in English. 3rd edition. Bussum: Coutinho. Materials for the grammar component will be announced at a later stage. Additional materials will be made available on Canvas.

Aanvullende informatie doelgroep

Bachelor students across the university who want to improve their written English in an academic context; the course is not open for students who have done academic English in their academic core. The course is part of the Minor Engels/Minor in English but can also be followed separately.

Overige informatie

Attendance is obligatory (80% minimum). If you miss more classes, you may still be allowed to finish the course if you submit an alternative assignment, but only if you've attended 70% of the classes. Note that this is an English writing course rather than simply a writing skills course. The assumption is that participants have already successfully completed an academic skills course in their first or second year of university study.

Minor English: Pronunciation and Presentation

Vakcode	L_EABAALG006
Studiepunten	6
Periode	P2
Vakniveau	200
Onderwijstaal	Engels
Faculteit	Faculteit der Geesteswetenschappen
Vakcoördinator	A.J. Gambrel
Examinator	M.M.M.A. Lemmen MA
Betrokken Docenten	A.J. Gambrel, M.M.M.A. Lemmen MA
Onderwijsvormen	Werkcollege, Hoorcollege, Werkgroep

Doel vak

Regarding pronunciation, you will be able to describe the 10 most common difficulties in English pronunciation. You will also be able to describe the effects of particular pronunciation features on the intelligibility and credibility of accents, and the importance of pronunciation features for identity construction. Regarding presentation, you will be able to strategically apply prosodic features and conversational patterns in such a way that they will help you structure and enliven your talk. By the end of the course, you will be able to adapt features in your own English pronunciation and you are able to confidently give an oral presentation.

Inhoud vak

In the pronunciation module, we will set goals for the English accent that you wish to develop, both professionally and at a personal level. We will analyse the 10 most common difficulties in English pronunciation and the effects that these difficulties may (inadvertently) have on the intelligibility and credibility of your accent. We will also take account of features that seem part of your identity. You will do exercises, practise ear-training and be given tools that help you analyse English pronunciation features. You will work on features in your own pronunciation accordingly. As far as the presentation component is concerned, we will focus on those aspects of speech (based a.o. on corpus linguistic research) that help you catch your listener's attention. Many of these aspects come naturally in everyday speech, but seem to be forgotten during more strenuous activities, such as speaking and presenting. This course will make you more aware of those prosodic features (intonation, voice quality) and conversational patterns (questions, pauses, repetition) of speech that you can use to get your message across.

Aanvullende informatie onderwijsvormen

Pronunciation: weekly lectures (1 hour) and seminars (2 hours). Presentation: weekly seminars (3 hours). Students are expected to do weekly reading and assignments.

Toetsvorm

Two recordings of your own pronunciation (50%) and a presentation on an academic subject (50%). In order to pass the course students must score a grade of ≥5.5 for each component.

Literatuur

Literature and other materials will be made available on Canvas. The pronunciation module is accompanied by online audio and video material (https://english-pronunciation.weebly.com).

Aanvullende informatie doelgroep

Students across the university who wish to work on their English pronunciation and presentation skills.

Overige informatie

80% attendance and submission of the course work is conditional for being awarded a grade for the recordings and the presentation.

Minor English: Writing 2

Vakcode	L_ETBAALG005
Studiepunten	6
Periode	P2
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Geesteswetenschappen
Vakcoördinator	dr. G.A. Dreschler
Examinator	dr. G.A. Dreschler
Betrokken Docenten	dr. G.A. Dreschler
Onderwijsvormen	Hoorcollege, Werkcollege

Doel vak

After successful completion of the course students will feel confident that they can write a bachelor dissertation in English and embark on a Master's degree where English is the language of tuition. Specifically, the course aims to help students in: • getting more practice in writing formal, academic English; • developing reading skills which will allow them to note linguistic and structural features of relevant academic text types in their own discipline; • gaining insight into how specific linguistic structures can contribute to text coherence and text cohesion; • acquiring greater knowledge of the stylistic and rhetorical aspects of written formal texts; • getting greater insight into the strengths and weaknesses of their English writing skills, and knowledge of how to further develop strengths and reduce weaknesses.

Inhoud vak

For this course we focus on your position as a writer in the academic world, i.e. as someone who is engaged in academic discourse. This means that you need to be aware of appropriate structures at sentence level as well as at text level, of ways of using language to refer to other writers, and of ways of using academic language effectively. The emphasis in this course is on (a) gaining more insight into the language and style of your own academic discipline, (b) improving coherence, compactness and readability, and (c) expanding your grammatical repertoire.

Aanvullende informatie onderwijsvormen

2 hrs per week lecture; 2 hrs per week seminar.

Toetsvorm

There are three assignments for this course: a short comparative essay (30%), a short paper on linguistic and stylistic features of academic texts in your own discipline (30% each), plus a paper of 2000 words on a subject related to your study (40% of the mark). In order to pass the course, you need a 5.5 minimum for each component

Vereiste voorkennis

Students must have either (a) completed an introductory academic English course earlier in their university studies or (b) already completed Minor English: Grammar and Writing 1.

Literatuur

Hannay, M. & J.L. Mackenzie (2009). Effective Writing in English. 2nd edition. Bussum: Coutinho. Separate materials available via Canvas.

Aanvullende informatie doelgroep

Bachelor and premaster students across the university who want to improve their written English in an academic context, with the exception of students of CIW who are following the specialization in English and International Communication (old program) or English Language and Communication Studies (new program).

Overige informatie

Attendance is obligatory (80% minimum). If you miss more classes, you may still be allowed to finish the course if you submit an alternative assignment, but only if you've attended 70% of the classes.

Molecular Cell Biology

Vakcode	AB_1053
Studiepunten	6
Periode	P2
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. R.J.M. van Spanning
Examinator	dr. R.J.M. van Spanning
Betrokken Docenten	dr. R.J.M. van Spanning, prof. dr. B. Teusink, prof. dr. H.V. Westerhoff, dr. B.G. Olivier, prof. dr. J.L. Snoep
Onderwijsvormen	Hoorcollege, Werkgroep, Practicum, Computerpracticum

Doel vak

To obtain a basic understanding of the functioning of living cells at the molecular level, and introduction to qualitative and quantitative methods applicable inside and outside the living cell. To learn to design and execute studies where these methods are applied, and to interpretate the results. Specifically, the students will be trained in: • The use and interpretation of information about cellular processes such as energy metabolism, regulation of gene expression, oxygen damage, apoptosis and signal transduction. • The design and execution of simple experiments concerning gene expression, signal transduction, growth and metabolic processes. • Application of Metabolic Control Analysis and Flux Balance Analyses to quantify distribution of control and regulation of cellular processes by individual cellular reactions and of flow distributions within cells. • The use of existing computer models of molecular systems in the cell to explore the behaviour of these systems.

Inhoud vak

• Introduction to Metabolic Control Analysis and its basis in enzyme kinetics and of Flux Balance Analyses. • Laws and practical applications of Metabolic Control Analysis, and extension of this method to include gene expression. • Modular kinetic analysis of cellular networks. • Structure and function of bacterial and mitochondrial respiratory networks. • Regulation of gene expression during respiration in microorganisms. • Use of a depository of mathematical models to explore reaction systems in the cell. • Control Analysis of signal transduction as a key in the understanding of cancer.

Aanvullende informatie onderwijsvormen

Lectures (16.5 contact hours); workgroups (3 day parts, obligatory); computer practical (1.5 contact hours, obligatory); practical project in the department of Molecular Cell Biology (depending on the project ca. 20 contact hours, obligatory).

Toetsvorm

Written exam (70%) Presentation (30%)

Vereiste voorkennis

Participation in the course “From Protein to Cell” (1st half of period 2)

Literatuur

A syllabus is available on the Canvas site.

Aanvullende informatie doelgroep

Part of the minor Biomolecular Science and Neuroscience, track Biomolecular Science.

Overige informatie

For the practical a laboratory coat will be supplied. After the course, the coat will be sterilised. Participation in the course "From Protein to Cell" (1st half of period 2) is compulsory. Students who chose to participate in the computer practicals of Jacky Snoep, please bring your own lap top.

Multatuli multicultureel

Vakcode	L_AABAALG083
Studiepunten	6
Periode	P1
Vakniveau	300
Onderwijstaal	Nederlands
Faculteit	Faculteit der Geesteswetenschappen
Vakcoördinator	prof. dr. J.H.C. Bel
Examinator	prof. dr. J.H.C. Bel
Betrokken Docenten	prof. dr. J.H.C. Bel
Onderwijsvormen	Werkcollege, Excursie

Doel vak

• Studenten verwerven inzicht in de vele aspecten van één enkele literaire tekst • Studenten leren een storyline te ontwerpen voor het Multatuli-museum • Studenten zijn in staat in een recensie een onderbouwd oordeel te geven over een literaire tekst • Studenten leren een podcast te maken over de Max Havelaar

Inhoud vak

Na een inleiding over het kolonialisme en de (post)koloniale theorie, wordt één enkele literaire (post)koloniale tekst centraal gesteld, Multatuli’s Max Havelaar. Deze roman wordt vervolgens vanuit verschillende perspectieven bekeken, namelijk in literair-historische, receptie-historische, historische, juridische, medische en boek-historische context. Ook wordt het Nachleben van de tekst bestudeerd in de vorm van toneel- en filmbewerkingen. Een excursie naar het Multatuli-museum, het Tropenmuseum en/of het Museum voor Volkenkunde in Leiden maakt deel uit van het programma. Een bekende radiopresentator geeft een gastcollege over het maken van een goed radioprogramma, ter voorbereiding op de eindopdracht (podcast).

Aanvullende informatie onderwijsvormen

werkcollege (2 uur per week)

Toetsvorm

• Tussentijdse opdrachten - mondeling en schriftelijk, waaronder een storyline - (moeten voldoende zijn) • Mondelinge presentatie met powerpoint en handout (10%) • Recensie over de centrale roman (40%) • Als eindopdracht maken de studenten een podcast waarbij zij verschillende personages uit de roman interviewen (50%) Voor alle onderdelen moet minimaal een 5,5 worden behaald.

Literatuur

De te lezen primaire en secundaire teksten worden voor aanvang van de cursus in Canvas bekendgemaakt.

Aanvullende informatie doelgroep

De minor staat open voor alle studenten, van binnen en van buiten de VU.

Overige informatie

Deze cursus is een verplicht onderdeel van de minor ‘De Schrijfacademie’. Daarnaast volgen de studenten ‘Klassiekers in context 1 en 2 (9 EC), De schrijversparade’ (3 EC), ‘Het Rijksmuseum’ (6 EC) en ‘Creatief schrijven’ (6 EC).

Nature versus Nurture

Vakcode	AB_1057
Studiepunten	6
Periode	P1
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. S. van der Sluis
Examinator	dr. S. van der Sluis
Betrokken Docenten	dr. S. van der Sluis
Onderwijsvormen	Practicum, Hoorcollege, Werkgroep, Computerpracticum

Doel vak

Students learn how individual differences in human complex behavior can be explained by differences between people in their genes, and in their environment.

Inhoud vak

Human traits show considerable individual differences. In the Nature vs. Nurture course, the influence of genes and of environmental factors on individual differences in human behavior will be discussed. The course starts with an historical overview of the nature-versus-nurture debate, and will describe how twin- and family studies paved the way for current genetic research. The course specifically focuses on the rapid developments in the field of genetics, that allow researchers to search the entire genome for genes that are predictive of human behavior and disease. We will discuss recent large-scale gene-finding studies and discuss how these translate to state-of-the-art neuroscience research, and how they inspire studies on personalized treatments in medical practice. In addition, ethical aspects of current genetic research will be discussed.

Aanvullende informatie onderwijsvormen

Lectures, discussion groups, presentations.

Toetsvorm

The final grade of Nature vs. Nurture is based on participation in ethical debate sessions and a written exam. The course Nature vs. Nurture is successfully completed with a final grade of 5.5 or higher.

Vereiste voorkennis

None

Literatuur

Book, TBA before the start of the course. Scientific papers, TBA during course

Aanvullende informatie doelgroep

This course is part of the minor "Brain and Mind". This minor is accessible to third year BSc students from alpha, beta, and gamma sciences (e.g., Sociology, Psychology, Economics, Law, Artificial Intelligence, computer science, criminology) and students from Life sciences (e.g., Biology, Physics, Chemistry, Medicine, Movement Science, Nutrition) with a broad interest in neuroscience. Students of Biomedical Sciences and Health and Life Sciences as well as students who plan to pursue a career in Neuroscience can follow the more specialized minor "Biomolecular/Neurosciences".

Aanbevolen voorkennis

Broad interest in brain, behavior, psychology, genetics and neuroscience

Networks and Graphs

Vakcode	X_401010
Studiepunten	6
Periode	P5
Vakniveau	200
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. J. Urbani
Examinator	dr. J. Urbani
Betrokken Docenten	dr. J. Urbani, dr. A. Mehrabi
Onderwijsvormen	Werkcollege, Deeltentamen schriftelijk, Hoorcollege

Doel vak

After taking this course, you will be able to describe what the science of networks is all about, making use of terminology from graph theory and basic probabilities. You will also be able to use (simple) discrete math for notations and proofs. In particular, you can - model simple real-world situations expressed in graphs/networks - show the (in)correctness of mathematical statements about graphs - construct networks and conduct simple analyses of existing ones - read and understand introductory, popular texts on networks There are eight learning goals: G1: Learn the basic notions and notations used in Graph Theory G2: Learn the various types of graphs and their properties G3: Familiarize with standard algorithms that work on graphs G4: Familiarize with well- known applications of complex networks on the Web and social networks G5: Learn the most important models for complex networks and be able to compare them G6: Use existing metrics for the analysis of complex networks G7: Learn to argument using a formal language about properties of graphs and graph algorithms G8: Able to model a realistic situation using a graph and/or complex network

Inhoud vak

The world around us is becoming increasingly connected. This increased connectivity is leading to new phenomena that are not that easy to understand: - why is it difficult, if not impossible, to remove data from the Web? - why does the Internet continue to function despite big disasters? - why is Google so effective and efficient? - why are navigation systems so responsive to traffic jams? - why do certain diseases spread so rapidly and others not? The core of the answers to these questions is formed by the notion of "network:" a mathematical concept consisting of nodes that are joined by edges. Networks are also called graphs. In the last 20 years we have seen an increase in interests for networks/graphs. Many real-world phenomena turned out to be conveniently modeled by networks, and in such a way that it allowed us to better understand those phenomena. In this course, graph theory and its applications are the main focus point. We'll be paying attention to the math that underlies graphs and networks, as well as the application to real-world situations. In particular, you will be conducting simple experiments dealing with the construction and analyses of networks. Application domains that are discussed are selected from: - the Internet - the Web - social communities and online social networks We'll putting emphasis on: 1. Standard mathematical terminology and techniques, including: - directed and undirected graphs - planar graphs - edge and vertex coloring - optimal routing - trees 2. Experimental analyses of networks. To this end, we'll be discussing various ways to measure network properties, like the relative position of (important) nodes, clustering coefficients, diameter, eccentricities, and so on.

Aanvullende informatie onderwijsvormen

There are two main lectures per week. Moreover, there are also one or two exercise classes per week. Attendance is not mandatory but highly encouraged.

Toetsvorm

The final grade is determined by two written exams: The midterm and the final exam. Both exams account for 50% of the total grade. There are also four mandatory homework assignments. Students need to pass at least one homework in the first part of the course and one homework in the second part of the course to be admitted to the exams.

Literatuur

Most of the material is covered in the book "Van Steen, M., Graph Theory and Complex Networks: An Introduction. 2010". Online available through www.distributed_systems.net. Some other topics are described in several online papers.

Aanvullende informatie doelgroep

1CS, 1-IMM.

Neuro- en Revalidatiepsychologie

Vakcode	B_NEURREVPSY
Studiepunten	6
Periode	P3
Vakniveau	200
Onderwijstaal	Nederlands
Faculteit	Fac. der Gedrags- en Bewegingswetensch.
Vakcoördinator	dr. A. Ledebt
Examinator	dr. A. Ledebt
Betrokken Docenten	dr. J.F. Stins, dr. A. Ledebt
Onderwijsvormen	Hoorcollege, Hoorcollege

Doel vak

Na afloop van de cursus heeft de student een goed beeld van hoe neuropsychologische kennis, theorieën en onderzoeksmethoden kunnen bijdragen aan het revalidatietraject van mensen met hersenletsel (met name CVA). Ook zal de student in staat zijn wetenschappelijke artikelen over dit onderwerp kritisch te lezen en vragen over deze artikelen te beantwoorden en te presenteren aan medestudenten.

Inhoud vak

Neuropsychologie onderzoekt de relatie tussen hersenen en gedrag, en in het bijzonder de gevolgen van hersenschade op verschillende gedragsniveaus. Neuropsychologische stoornissen kunnen cognitief van aard zijn (bv geheugen, spraak), emotioneel (bv de stressreacties) of gedragsmatig (bv vermoeidheid en motivatie). Het vakgebied van de revalidatiepsychologie belicht de talrijke psychologische processen die inherent zijn aan de revalidatie van mensen met een lichamelijke en/of neurocognitieve aandoening. Al deze psychologische facetten hebben grote invloed op de kans van slagen van het traject van (neuro)revalidatie. De cursus beoogt een brug te slaan tussen enerzijds de theoretische inzichten uit de neuro- en revalidatiepsychologie, en anderzijds de uitdagingen die optreden in de praktijk van de revalidatie. De nadruk zal liggen op hersenschade na CVA (wat abrupt optreedt) en niet op neurodegeneratieve aandoeningen zoals dementie en PD. De bewegingswetenschapper die werkzaam zal zijn in de revalidatie (bv als behandelaar of wetenschappelijk onderzoeker) zal na afloop van deze cursus uitstekend in staat zijn om psychologische en neuropsychologische kennis en instrumenten in te zetten in dit werkveld. De cursus is opgedeeld in 3 onderwerpen, die elk in een afzonderlijke cursorische week worden besproken, als volgt: (1) psychologische factoren in de (neuro)revalidatie, (2) cognitieve stoornissen in de (neuro)revalidatie, en (3) motorisch (her)leren na beroerte.

Aanvullende informatie onderwijsvormen

De cursus bestaat uit hoorcolleges en werkcolleges.

Toetsvorm

Het eindcijfer bestaat uit de score behaald op het schriftelijk tentamen (70%) en de punten behaald tijdens de opdrachten (30%). Schriftelijk tentamen met open-eindvragen.

Literatuur

Losse artikelen. De literatuurlijst en de Cursushandleiding worden tzt online bekendgemaakt.

Overige informatie

Voor de werkcolleges geldt een aanwezigheidsplicht. Werkcolleges worden voorafgegaan door een aantal opdrachten (bv vragen over literatuur) die op Canvas worden geplaatst. Alle studenten (werkzaam in tweetallen) moeten opdrachten maken en inleveren. Tijdens de werkcolleges moeten studenten hun antwoord presenteren voor de groep.

Toelichting Canvas

Studenten werken gedurende de cursus in tweetallen aan de groepsopdrachten. Studenten mogen zelf aan het begin van de cursus koppels vormen via Canvas. Studenten die geen partner hebben worden door de docenten

toegewezen aan een koppel.

Aanbevolen voorkennis

Van de deelnemers wordt verwacht dat zij globaal kennis hebben van neuroanatomie en neurofysiologie zoals bijvoorbeeld behandeld in het boek “Neurowetenschappen, een overzicht” van Ben van Cranenburgh. De cursus sluit wel aan bij een aantal cursussen die eerder in de Bachelor Bewegingswetenschappen worden gegeven, te weten: Psychologie (BA1); Motorisch leren en ontwikkelen (BA2); Neurowetenschappen (BA2); Revalidatie (BA3).

Neuropsychologie (UM)

Vakcode	P_UNEUPSY
Studiepunten	6
Periode	P3
Vakniveau	200
Onderwijstaal	Engels
Faculteit	Fac. der Gedrags- en Bewegingswetensch.
Vakcoördinator	prof. dr. E.J.A. Scherder
Examinator	prof. dr. E.J.A. Scherder
Betrokken Docenten	prof. dr. E.J.A. Scherder
Onderwijsvormen	Werkgroep, Hoorcollege

Doel vak

To receive knowledge and insight on an introductory level on the consequences of brain damage on the behaviour of people. Also to be introduced to the field of the clinical neuropsychologist.

Inhoud vak

Using our knowledge of the working of the brain we discuss the prinicples of neuropscychology. Neurological and psychiatric disorders as agnosis, aphasia, and dementia. On the basis of patient examples that correspond as closely as possible to the literature, the neuropsychological diagostics, among others, are illustrated.

Aanvullende informatie onderwijsvormen

Lectures

Toetsvorm

Exam (mc questions)

Literatuur

Kolb, B. and I.Q. Whishaw, (2015, 7th Edition). Fundamentals of Human Neuropsychology. San Francisco: W.H. Freeman and Company.

New Ways of Working

Vakcode	E_MM_NWW
Studiepunten	6
Periode	P2
Vakniveau	300
Onderwijstaal	Engels
Faculteit	School of Business and Economics
Vakcoördinator	dr. A. Sergeeva
Examinator	dr. A. Sergeeva
Betrokken Docenten	dr. A. Sergeeva
Onderwijsvormen	Werkcollege, Hoorcollege

Doel vak

After completing the course, students will: - Understand how the properties of digital technologies require, as well as enable new approaches to working and organizing - Have knowledge of relevant theories of how working, coordinating, and managing in these new environments is different from traditional workplaces and critically reflect upon the underlying assumptions - Understand the interplay between technology and work practices and be able to analyze and demonstrate that interplay - Be able to apply academic insights to analyze and develop solutions for a real life case

Inhoud vak

In this course we focus on the demands digital technologies put on organizations and society, and on how new ways of working and organizing help adapt to these challenges. Topics addressed in this course include, amongst others, how new ways of working (for example workers as digital nomads, expert systems as alternative for legal workers, or production done by 3d-printers) and new distributed and networked organizational forms (for example peer to peer communities or crowdsourcing) have advantages and disadvantages over traditional organizational practices and structures. In addition to learning about these topics in interactive lectures, students will also be required to fulfill a number of assignments related to “real-life” challenges of new ways of working and organizing. The assignments are related to a particular organizational problem and will require students to apply theories discussed during the lecture to a particular case. These “hands-on” assignments are aimed to get a better understanding of the connection between theory and practice. With the assignments, students become academically prepared to understand and support the design, introduction and use of digital innovation and its implications for new ways of organizing and working in new distributed environments.

Aanvullende informatie onderwijsvormen

The course will consist of a combination of interactive lectures, guest lectures, seminars, and assignments. The lectures will also include a critical discussion of selected readings, stimulated by obligatory individual reflections on the literature. The seminars will be used to have students present, discuss, and further develop the assignments.

Toetsvorm

Group project assignment and an individual exam

Vereiste voorkennis

None

Literatuur

A selection of readings (mostly academic papers, but also book chapters and thoughtful business magazine articles) will be made available before the start of the course.

Object-Oriented and Functional Programming

Vakcode	XB_0019
Studiepunten	6
Periode	P1
Vakniveau	200
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. A.J. van der Ploeg MSc
Examinator	dr. A.J. van der Ploeg MSc
Betrokken Docenten	dr. A.J. van der Ploeg MSc
Onderwijsvormen	Hoorcollege, Werkcollege

Doel vak

The goal of this course is to obtain familiarity and experience with advanced programming language concepts, such as inheritance and pattern matching, as well as improving general programming skills. After taking this course, you will be able to: * Understand & apply concepts from object-oriented programming such as subtyping and inheritance. * Understand & apply concepts from functional programming such as pattern matching and higher-order functions. * Design and implement a moderately large program from scratch. * Produce clear, readable code.

Inhoud vak

The lectures cover various programming concepts from Object-oriented and Functional programming and how they

occur in various programming languages. These topics include inheritance, subtyping, parametric polymorphism, side effects, higher-order functions and pattern matching. The lectures also cover how to produce clear, readable code. There are several small programming exercises which offer practice with the concepts discussed in the lectures. There are also two moderately large programming exercises that are not about specific programming techniques. These give the students experience with designing and implementing moderately large programs from scratch, train the students in producing clear, readable code and provide an opportunity to use the advanced concepts from the lectures.

Aanvullende informatie onderwijsvormen

Lectures: 4 hours per week (in total 28 hours). Practical sessions: 4 hours per week (in total 28 hours).

Toetsvorm

Written exam (50% of grade) and programming exercises (50% of grade). Both grades have to be at least 5.5. There is no resit opportunity for the programming exercises.

Vereiste voorkennis

Computer Programming(XB_40011) OR Project Application Development(X_400556)

Aanvullende informatie doelgroep

2CS

Operating Systems

Vakcode	X_405067
Studiepunten	6
Periode	P2
Vakniveau	200
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. C. Giuffrida
Examinator	dr. C. Giuffrida
Betrokken Docenten	prof. dr. ir. H.J. Bos, dr. C. Giuffrida
Onderwijsvormen	Practicum, Hoorcollege

Doel vak

Get an insight into the internals of modern operating systems. Both theory (architecture, design principles, interfaces, etc.) and practice (operating system implementation aspects, user-level systems programming in C, etc.). Upon completion of this course, you will: - have a basic understanding of the operating systems design and implementation principles adopted by mainstream operating systems such as Linux - have knowledge of key operating systems concepts, including: history and evolution of operating systems, core operating systems abstractions, system calls, virtualization, basic and advanced operating systems architectures - have knowledge of process management principles - have knowledge of memory management principles - have knowledge of file systems principles - have knowledge of input/output principles - have knowledge of concurrency principles

Inhoud vak

This course gives an introduction to the internals of operating system. The following topics are covered: operating systems architectures, processes, threads, synchronization, memory management, file systems, input/output, virtualization. The course uses real-world operating systems such as Linux and MINIX 3 as examples, providing insights into both the theory and practice of modern operating systems.

Aanvullende informatie onderwijsvormen

Lectures

Toetsvorm

Written exam and homework C programming assignments. Both exam and assignments must each be passed with a grade >= 4. The final grade is the weighted average of the exam grade (70%) and the assignments (30%). There is no resit opportunity for the practical assignments.

Vereiste voorkennis

Computer Programming or similar programming course in C/C++

Literatuur

Tanenbaum, A.S., Bos, H.J., "Modern Operating Systems", Fourth Edition. Prentice-Hall, 2015.

Aanvullende informatie doelgroep

2CS

Oral History & Biography

Vakcode	L_AABAGES208
Studiepunten	6
Periode	P3
Vakniveau	200
Onderwijstaal	Engels
Faculteit	Faculteit der Geesteswetenschappen
Vakcoördinator	dr. D.G. Hondius
Examinator	dr. D.G. Hondius
Betrokken Docenten	dr. D.G. Hondius
Onderwijsvormen	Werkcollege, Hoorcollege

Doel vak

This course aims to prepare you towards your combined skills to conduct and present the results of both oral historical and biographical historical research.

Inhoud vak

Learning goals and summary of course content A practical and short, one- month course to learn and try out skills of biographical and oral history research methods. The course is focused on practical assignments. By the end of this course you will be able to: • Find and increase your knowledge and insight from lectures, academic books and journal articles about oral history and about the biographical method. • Apply this knowledge independently in assignments. • Find, analyse and critically apply the use of existing interviews and biographical texts as research data • Prepare and conduct an oral history interview, transcribe your interview, and write a short report including a critical evaluation of your work. • Show and discuss fragments of a biographical portrait of a person that you have interviewed.

Aanvullende informatie onderwijsvormen

The course is a seminar with practical assignments.

Toetsvorm

Assignments in biographical writing, and in arranging, conducting, transcribing and presenting an interview. Depending on the number of students registering, there may be an in-course written exam included based on the course readings.

Literatuur

Lynn Abrams, Oral History Theory. (2016). Additional articles will be made available to students at the start of the course.

Aanvullende informatie doelgroep

2nd and 3rd year BA students in history

Aanbevolen voorkennis

Academic writing and research skills (ACVA) positive result is required.

Peace and Conflict: From Theory to Practice

Vakcode	S_PC
Studiepunten	6
Periode	P1+2+3
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Sociale Wetenschappen
Vakcoördinator	dr. M. Matelski
Examinator	dr. M. Matelski
Betrokken Docenten	N. Gjaltema LLM, dr. M. Matelski
Onderwijsvormen	Hoorcollege, Werkgroep, Deeltentamen schriftelijk

Doel vak

The primary objective of the course ‘Peace and Conflict: From Theory to Practice’ is to familiarise students with the practical context of issues of peace and conflict. When finalizing the course, students will a) have knowledge and understanding of: • The practical context of issues of peace and conflict; b) be able to: • Apply their knowledge, understanding and problem solving abilities to specific cases within the broader multi/interdisciplinary and multilevel context of peace and conflict; • Analyse, synthesise and co-create potential solutions to complex problems in the domain of peace and conflict; • Integrate their knowledge of multiple disciplines with the purpose of handling the complexity of issues related to peace and conflict and designing effective solutions; • Communicate conclusions, the knowledge and the rationale that underpin these, to an audience of specialists and non-specialists in a clear and unambiguous manner; • Give and receive constructive feedback to and from her/his peers on a variety of products, including oral presentations and written work, and use this feedback to revise and improve their work • Work in multidisciplinary student teams and contribute, to the comparative advantage related to the own disciplinary background, to the overall functioning and productivity of the group.

Inhoud vak

Professionals engaged in the practice of finding solutions to armed conflict and building sustainable peace are consistently faced with diverse practical and ethical challenges. Whether on the policy formulation or policy implementation side, practitioners have to navigate complex configurations of international organizations, local governments, the military, aid agencies and state or non-state armed groups. This course shifts the focus from theoretical perspectives to views on contemporary practices, with the aim of familiarizing students with the prospects and challenges of working on issues of peace and conflict outside of academia – in the manner of governments, international organizations, and non-governmental organizations. Importantly, working in interdisciplinary teams is an unmistakable feature of contemporary work around issues of peace and conflict. In this course, students work together in multidisciplinary teams and apply what they have learned to complex, real-world case studies of international responses to political violence and armed conflict. This will allow for understanding and appreciating the advantages of taking an interdisciplinary approach to understanding the practical challenges of peace and conflict work.

Aanvullende informatie onderwijsvormen

Weekly lectures in P1 and P2, bi-weekly working groups in P3. In relation to developing regulations around the COVID-19 pandemic, teaching methods may be subject to change.

Toetsvorm

Exam, written (group) assignments and presentation. In relation to developing regulations around the COVID-19 pandemic, assessment methods may be subject to change.

Vereiste voorkennis

Students must have earned 90 credits, including 60 of the first year. Participation in 'Political Violence and the Human Condition' and 'Philosophy and Ethics of Political Violence: Peace, War and Terrorism' is required.

Aanvullende informatie doelgroep

This course is intended for students in the minor Peace and Conflict Studies. The course is also open as an elective course to students from any Dutch university or other institution of higher education, and exchange students.

Overige informatie

The minor is taught in English.

Pervasive Computing

Vakcode	XB_40008
Studiepunten	6
Periode	P2
Vakniveau	100
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. N. Silvis-Cividjian
Examinator	dr. N. Silvis-Cividjian
Betrokken Docenten	dr. N. Silvis-Cividjian
Onderwijsvormen	Hoorcollege, Werkcollege

Doel vak

We expect that by the end of this course, students will be able to: • Design a realistic smart system with the potential to benefit human lives. The system acquires and processes audio and video data and uses pattern recognition to take decisions that affect the environment accordingly. • Build a simplified version of this system, based on programmable microcontrollers. • Work together in a team, collaboratively identifying not only the technical, but also the safety or ethical issues with their designs, and then sharing their challenges and discoveries through reports, presentations, and in-class demonstrations.

Inhoud vak

Pervasive (or ubiquitous) computing is a trend based on the Mark Weiser's vision of computers available "always and everywhere", embedded in everyday life. This course is an introduction to pervasive computing systems that assist people in their daily life. Think about a self-driving car, a fall-detection system, a speech-controlled wheelchair or a navigation system for visually impaired pedestrians. These systems: 1. sense the context (time, user's location, user's acceleration, road scenery, etc), 2. recognize data patterns, reason and take intelligent decisions, and 3. act upon the environment, by controlling the wheels, suggesting the best route, or just notifying a caretaker . The main components of such a system are: sensors, controllers and actuators. In this course, the students will learn different techniques to acquire signals from the environment, to process these raw signals in order to infer context by using machine learning, and to write software agents for control. During the practical sessions, the students will experience with these techniques and build their own microcontroller-based smart system. Programming is done in MATLAB and C++. Guest lectures, given by researchers working in relevant fields are planned as well.

Aanvullende informatie onderwijsvormen

Lectures, practical sessions

Toetsvorm

Compulsory practical assignments and a digital exam. The final grade is calculated as Final grade = (0.5*PRAC) + (0.5*EXAM). A pass requires both components to be >=5.5. It is possible to resit the exam, but not the practical.

Literatuur

Silvis-Cividjian, N. (2017), Pervasive Computing - Engineering Smart Systems, Springer International Publishing, ISBN 978-3-319-51654-7

Aanvullende informatie doelgroep

1 CS

Philosophy and Ethics

Vakcode	X_400433
Studiepunten	3
Periode	P5
Vakniveau	200

Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. J.J.W. Wieland
Examinator	dr. J.J.W. Wieland
Betrokken Docenten	dr. J.J.W. Wieland
Onderwijsvormen	Hoorcollege

Doel vak

1. Acquire basic knowledge of the main ethical theories: contractualism, utilitarianism, Kantian ethics, and theories of well-being. 2. Learn to carefully analyse, and reflect on, moral dilemmas concerning new technologies.

Inhoud vak

Argument of the course: 1. New technologies (e.g. systems for detecting illnesses, criminal behavior, selecting the best employees, your news feed, the ads you see, tracking infected people, etc.) take over the world. 2. These technologies better meet moral standards. 3. Hence, those involved in design or regulation (i.e. you, in the future) should know about the main ideas in ethics. In this course, you will learn about the main ethical theories (namely, contractualism, utilitarianism, Kantian ethics, and theories of well-being), and learn to utilize these theories to resolve moral dilemmas in a justified and intelligent way.

Aanvullende informatie onderwijsvormen

Lectures

Toetsvorm

Home assignments (50%) Final multiple-choice exam (50%)

Literatuur

Textbook (Rachels: The Elements of Moral Philosophy), plus texts that will be shared on Canvas.

Philosophy and Neuroethics

Vakcode	W_BA_PNEU
Studiepunten	6
Periode	P2
Vakniveau	200
Onderwijstaal	Engels
Faculteit	Faculteit der Geesteswetenschappen
Vakcoördinator	L.C. de Bruin
Examinator	L.C. de Bruin
Betrokken Docenten	prof. dr. G. Meynen
Onderwijsvormen	Werkgroep, Hoorcollege

Doel vak

You are familiar with the main philosophical positions and concepts regarding the mind-body problem and what they imply for psychological and neuroscientific research. You have a basic understanding of the most important ethical systems and their relevance for contemporary discussions on the impact of neurotechnologies. You are familiar with the main issues in the philosophy of science and you can explain how they are related to contemporary debates on topics such as implicit bias and medical research priorities You have a basic understanding of the philosophical problems involved in the assessment of mental competence and criminal responsibility.

Inhoud vak

In this course students are introduced to the most important schools of thought and key concepts in philosophical and ethical debates on the impact of neurotechnologies on society, more specifically, on healthcare and criminal law. Topics include: the problem of mind and brain, the history and philosophy of neuroscience, and the assessments of criminal responsibility in light of neuroscientific developments.

Aanvullende informatie onderwijsvormen

(Interactive) lectures

Toetsvorm

Written exam

Literatuur

Articles are available on Canvas for registered students

Overige informatie

This course is part of the Universiteitsminor Technology, Law and Ethics

Philosophy and the Ethics of Political Violence: Peace, War and Terrorism

Vakcode	S_PEV
Studiepunten	6
Periode	P1
Vakniveau	200
Onderwijstaal	Engels
Faculteit	Faculteit der Sociale Wetenschappen
Vakcoördinator	prof. dr. F. Enns
Examinator	prof. dr. G.J. Buijs
Betrokken Docenten	prof. dr. F. Enns, prof. dr. G.J. Buijs, dr. A.F. Pacheco Lozano
Onderwijsvormen	Werkcollege

Doel vak

The aim of this course is to introduce students to the main philosophical and ethical concepts on violence and non-violence, war and peace (-building), and the current phenomenon of terrorism – in the context of a globalized world. Special attention will be given to religiously motivated violence and the potential role of religion in peace-building. Learning Objectives When finalizing the course, students will have knowledge and understanding of - The prospects and problems of the main political-philosophical and ethical concepts of war and peace; - The prospects and problems of violent and non-violent peacebuilding concepts; - The historical, cultural and economic contexts in which certain approaches concerning war and peace have emerged and have been applied; - The prospects and problems of religion as one of the main contributors to violence (terrorism) as well as to non-violent peace (-building) in a globalized world.

Inhoud vak

For centuries, in the Western World the concepts of war and peace have been developed and discussed in the field of philosophy linked to theology, due to the fact of the corpus christianum (the medieval concept of a unity of church and state). The just-war-theory is the predominant model of reasoning in this tradition, challenged only by some religious minorities who pronounced non-violence as the moral obligation within Christian ethics. During the Enlightenment period, this societal unity of political and religious powers begins to fall apart, due to new ways of thinking and reasoning. This has lead the (European) societies into violent (freedom-) struggles within, resulting in a clear separation of “church and state”. This paved the way to secular states on the one hand and religious plurality on the other. Nevertheless, current phenomena like some forms of terrorism, “New Wars” as well as the “Renaissance of the Just War theory” demonstrate, that moral reasoning of religious communities still plays a major role in orienting people of faith – and implicitly also people of no faith – in their ethical judgements. This is not only true for some ethical dilemmas (such as collective self-defense, emergency assistance for populations at risk or violent struggles for political liberty and independence) but also for concepts of non-violent resistance, peace-building, and reconciliation (see Mahatma Gandhi, Martin Luther King, Nelson Mandela, World Council of Churches etc.). – In times of economic globalization, cultural diversity, and religious plurality the discourse on war, (non-) violence and peace (-building) finds itself in rapidly changing contexts – and new forums of analysis and engagement.

Aanvullende informatie onderwijsvormen

Seminar-style with presentations and discussions Attendance mandatory (80%)

Toetsvorm

Two written assignment

Literatuur

The Ashgate Research Companion to Religion and Conflict Resolution, ed. By Lee Marsden (2012) Additional articles

Aanvullende informatie doelgroep

2nd year bachelor students in the minor Peace and Conflict Studies. The course is also open as an elective course

Philosophy of Science

Vakcode	W_BA_SCIE
Studiepunten	6
Periode	P2
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Geesteswetenschappen
Vakcoördinator	dr. J.S. de Boer
Examinator	dr. J.S. de Boer
Betrokken Docenten	dr. J.S. de Boer
Onderwijsvormen	Hoorcollege

Doel vak

Students: - acquire knowledge of and insight into the most important schools and problems in contemporary philosophy of science (at an introductory level); - applying this knowledge and insights to current questions and discussions regarding the nature of science and its role in today's society. - develop one's own substantiated judgment with regard to philosophical questions concerning science, and are able to communicate this judgment verbally and in writing.

Inhoud vak

This course will address key-subjects in philosophy of science: - Classical philosophy of science (logical positivism and Popper); - Historical and sociological research in science; - Realism and the nature of scientific explanation; - Philosophy of Social Science and the Humanities; - Science and values; - Feminist's perspectives on science.

Aanvullende informatie onderwijsvormen

Lectures, assignments, debates

Toetsvorm

Written exam (70%), written assignment (30%)

Literatuur

Kent W. Staley, An Introduction to the Philosophy of Science (Cambridge University Press, 2014). Other required readings will be announced through Canvas.

Aanvullende informatie doelgroep

BA2-students Philosophy, students in the Minor Philosophy.

Aanbevolen voorkennis

Recommended is a general familiarity with systematic or historical problems from philosophy.

Political Philosophy

Vakcode	W_BA_PP

Studiepunten	6
Periode	P1
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Geesteswetenschappen
Vakcoördinator	prof. dr. G.J. Buijs
Examinator	prof. dr. G.J. Buijs
Betrokken Docenten	prof. dr. G.J. Buijs
Onderwijsvormen	Hoorcollege

Doel vak

Objectives of this course: 1. To gain insight into the contemporary political and political-philosophical landscape: participants will acquire, from a historical perspective, knowledge of and insight into the most important streams of thought within contemporary political philosophy and the contemporary political landscape and how they relate to each other. 2. Philosophical analysis: the participants learn by asking about and critically analyzing the supporting assumptions under the various streams of thought. 3. Getting acquainted with "famous texts": with each movement the participants are introduced to some characteristic original text fragments from the tradition of political philosophy. 4. Analysis of current affairs: Students gain some insight into current social themes and learn to see how different ideologies might provide responses to these issues, while students also learn to take their own position. 5. Opinion-forming and debating skills: every week each participant writes a brief reflection on the material and a debate is held in which we try to determine together the "resolving potential" of a certain ideology regarding an urgent social problem.

Inhoud vak

Political philosophy or political theory (often used interchangeably) deals with the ideas and visions that people use when designing, redesigning or assessing the way their society is organised. In this course you get to know the most important past and contemporary ideologies within the modern political spectrum. We also look - particularly during the lectures - at the historical-cultural background of ideologies. Ideologies still are - some to a greater extent, others to a lesser extent – highly influential in the shaping of societies and in the arguments put forward in the public sphere, in public debates. Co-construction This module will be further defined by you as students. During the first lecture we will identify a top 5 of the biggest challenges / problems for the society of tomorrow, as you see it - by majority vote. These themes will form a common thread in the weeks that follow, as we take a closer look at the different political ideologies.

Aanvullende informatie onderwijsvormen

Lectures and seminars, presentations, debates and discussions by students

Toetsvorm

Written assignments, presentations, written exam

Literatuur

Andrew Heywood, Political Ideologies. An Introduction. London: Palgrave Macmillan (6th edition) - specified parts (see below) - Will Kymlicka, Contemporary Political Philosophy, Oxford: Oxford University Press, 2002 (second edition) - specified parts, see below. An html-version is to be found at https://epdf.pub/contemporary-political-philosophy-an-introduction.html - Fragments of "classical" texts or source texts of a certain ideology. (on Canvas)

Political Violence and the Human Condition

Vakcode	S_PVHC
Studiepunten	6
Periode	P1
Vakniveau	200
Onderwijstaal	Engels
Faculteit	Faculteit der Sociale Wetenschappen
Vakcoördinator	dr. M. Weerdesteijn MSc
Examinator	dr. M. Weerdesteijn MSc
Betrokken Docenten	dr. M. Weerdesteijn MSc, dr. A. van Baar, prof. dr. E.M. Sijbrandij
Onderwijsvormen	Werkcollege, Hoorcollege

Doel vak

This course aims to provide students with knowledge of the perpetrators and victims of political violence. It will cover the reasons why, and the processes and mechanisms through which, people get involved in political violence, as well as the impact this has on victims and their communities. When finalizing the course, students will have knowledge and understanding of: - The driving forces of violent behaviour on an individual and group level; - The psychological foundations of violent behaviour; - The adverse psychosocial and intergenerational consequences of violence for victims and communities; -Effective strategies to hold perpetrators accountable and reduce the adverse psychological and psychosocial consequences of violence for victims and communities - The prospects and challenges of an interdisciplinary approach to violent behaviour that combines, amongst other disciplines, psychology and criminology. In addition, students will be able to: - Gather and integrate knowledge of multiple disciplines with the purpose of handling complexity of issues related to peace and conflict and designing effective solutions; - Formulate judgements based on a critical evaluation of knowledge, methodologies and research results from multiple disciplines -Critically appraise and integrate the literature on psychological and psychosocial interventions and transitional justice mechanisms in the aftermath of political violence.

Inhoud vak

Mass atrocities are frequently perpetrated during wars and they have a devastating effect on the victims and their communities. The perpetrators and the victims of this violence have been studied from numerous disciplines including, but not limited to, criminology, clinical psychology, social psychology and history. Studies across these different disciplines have focused on characteristics and processes that contribute to mass violence on different levels of analysis. In addition, extensive scientific literature exists on the consequences of mass violence for the exposed society, community and the individual, and how individuals, communities and countries may deal with the past. In this course, these perspectives will be integrated to provide an overview of the reasons why, and the processes through which, individuals perpetrate mass atrocities. The hypothesis that these individuals are ordinary people in extraordinary circumstances will be discussed by analysing theories as well as case studies. Furthermore, the appropriateness of individual accountability for these collective manifestations of political violence will be discussed, as well as potential alternatives. A second central focus of the course will be the psychological and psychosocial consequences of political violence and war-related trauma for its victims; the affected individuals, communities and societies. In this part of the course we will also focus on how to interfere with the development of such adverse consequences, on an individual and societal level.

Aanvullende informatie onderwijsvormen

Lectures and seminars

Toetsvorm

Written assignments

Principles of Bioinformatics

Vakcode	X_401094
Studiepunten	6
Periode	P1
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	L. Hoekstra
Examinator	L. Hoekstra
Betrokken Docenten	P. Schmidt, prof. dr. J. Heringa, dr. S. Abeln, A.S. Rauh BSc, G.R. van der Ploeg BSc, L. Hoekstra, dr. ir. K.A. Feenstra
Onderwijsvormen	Computerpracticum, Practicum, Hoorcollege

Doel vak

Ben je geïnteresseerd in bio-informatica? Wil je weten hoe grote hoeveelheden data kunnen worden geanalyseerd om nieuwe biologische kennis te verkrijgen? Zou je graag werken aan de open vragen van wetenschappelijke onderzoek? Deze cursus staat open voor elke bachelorstudent in een wetenschappelijk bachelor (inclusief biologie of biochemie). Principles of Bioinformatics is de startcursus voor bio-informatica op academisch niveau. Het is bedoeld om een breed overzicht te geven van belangrijke onderwerpen die relevant zijn voor het vakgebied, met focus op actuele (open) problemen in bio-informatica onderzoek. Tijdens de hoorcolleges en practica raak je vertrouwd met praktische oplossingen, maar ontdek ook dat er nog veel is ruimte voor verbetering op dit snel voortschrijdende onderzoeksgebied. Doelen: • De studenten bewust maken van hiaten in hun eigen

achtergrondkennis. • De student kent de belangrijkste vraagstukken, methodologie en beschikbare algoritmen in bio-informatica. • Samenwerken in een team met diverse achtergronden. • Praktische ervaring opdoen met programmeren en basisafhandeling wiskundige vergelijkingen als middel om bio-informatica problemen op te lossen. • Een basisbegrip ontwikkelen van belangrijke concepten in genomica en moleculaire celbiologie of om een basis programmeren in python te ontwikkelen die relevant zijn voor actuele onderwerpen in bio-informatica

Inhoud vak

Theorie: • Evolutie, genomen, sequenties, biomoleculaire structuur, biologisch Databases BLAST & PSI-BLAST, eiwitdomeinen & evolutie, Next Generation Sequencing (NGS) of Massively Parallel Sequencing (MPS) en analyse Praktisch: Er zijn practica die tot doel hebben je de oplossingen en de open problemen op het gebied van Bio-informatica te laten zien. In de practica gebruik je bestaande databases en (webserver) oplossingen om biologische vragen te beantwoorden. Je zal ook python scripts gebruiken om zoekopdrachten naar databases en internet te automatiseren om de prestatie van de huidige bio-informatica algoritmen te onderzoeken. De volgende onderwerpen komen aan bod: • Een korte introductie tot Python • Gegevensbronnen voor de Life Sciences, waaronder: Gene Ontology Database (GO), Pfam en SCOP • Homologie zoeken (BLAST / PSI-BLAST) • Dynamisch programmeren • Benchmarking • Computationele analyse van genome sequencing (genome assemby) • Recent onderzoek in bio-informatica

Aanvullende informatie onderwijsvormen

• 10 hoorcollege's (twee uur college in de ochtend, twee dagen per week) • 12 praktica (sessies van twee uur na de ochtend hoorcolleges, twee dagen per week), gedeeltelijk begeleid.

Toetsvorm

• [50%] Opdrachten (4 beoordeelde opdrachten) • [50%] Mondeling of schriftelijk examen (afhankelijk van aantal studenten) met oefeningen, onderwerpen die binnen het project vallen en lesonderwerpen

Literatuur

• Cursus materiaal (slides, aetenschappelijke artikelen) op Canvas Essential Bioinformatics methods are covered by the following books: • Essential Bioinformatics, Jin Xiong, Cambridge University Press, ISBN978-0-521-60082-8 (this is a very basic book, for BSc level only) • Marketa Zvelebil and Jeremy O. Baum Understanding Bioinformatics Garland Science 2008 ISBN-10: 0-8153-4024-9 (if you are planning to take any further courses in bioinformatics, we would advise you to get this book)

Aanvullende informatie doelgroep

3CS, 3IMM, 3LI en: 3BIO, 3MNW, 3BMW, 3FAR

Overige informatie

Deze cursus is onderdeel van de minor Bioinformatica en Systeembiologie Afhankelijk van het aantal studenten kan een groot deel van deze cursus samen met de MSc-cursus "Fundamentals of Bioinformatics" gegeven worden. De beoordeling is op derdejaars BSc-niveau.

Aanbevolen voorkennis

An interest in programming and biological problems.

Project Autonomous Driving

Vakcode	XB_0045
Studiepunten	6
Periode	P3
Vakniveau	200
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. N. Silvis-Cividjian
Examinator	dr. N. Silvis-Cividjian
Betrokken Docenten	dr. N. Silvis-Cividjian
Onderwijsvormen	Hoorcollege, Werkcollege

Doel vak

After completing this project, a student (1) can engineer a performant autonomous car; (2) can justify the design choices and clarify the obtained results and communicate these in both written and oral form;
(3) can work in a team and participate in an international student compe

Inhoud vak

With the upcoming of Internet of Things (IoT) technology, autonomous dri
research field. However, instructing a computer to take over the driver
task, due to a number of technological and social challenges.
Project Autonomous Driving is an elective course, that builds on the fir year
courses Physical computing or Pervasive computing. The main goal is to b autonomous car.
At the end of the project, the students will participate in an international competition
organized yearly by NXP. The competition requires the participating car
and precision- tasks, such as driving fast between two black lines, or f
rounds as possible. In order to achieve these goals, students apply the
course Physical computing or Pervasive computing, but also must extend t programming, electronics and
mechanics. For example, students will investigating other,
more optimal control algorithms and technical design solutions for deali
limited computational power, uneven illumination, bad wheels grip, etc.
used is C++ or MATLAB. At the end of the course, each group writes a r
description and motivation of their design choices, and a discussion of competition.

Aanvullende informatie onderwijsvormen

All students will get 24/7 access to a lab where they can build and test their vehicles. Students work in groups of 2 or 3, starting from January until March (qualifiers) or even April if they reach the finals.This is very practical course where students get assistance from the coordinator, from the VU Beta electronics and mechanics technicians and veteran participants from previous years. Research has to be done by consulting existing scientific material on autonomous driving.

Toetsvorm

The final grade depends on the quality of the written report (50%), the quality of the individual performance of each student, based on a self-reflection (20%) and the personal observation of the coordinator (30%).

Vereiste voorkennis

Good results for the course Physical Computing XB_40008 or Pervasive computing X_400552 (minimal an 8 for the practical) or other relevant experience in autonomous driving competitions.

Aanvullende informatie doelgroep

BSc CS

Overige informatie

The participants will be selected based on their results for the Physical computing or Pervasive computing course and on their motivation.

Afwijkende intekenprocedure

All participants will be interviewed by the coordinator.

Aanbevolen voorkennis

Affinity with hardware and electronics

Religions and Gender

Vakcode	G_BATRSAL054
Studiepunten	6
Periode	P3
Vakniveau	300
Onderwijstaal	Engels

Faculteit	Faculteit Religie en Theologie
Vakcoördinator	dr. L. Minnema
Examinator	dr. L. Minnema
Betrokken Docenten	dr. L. Minnema
Onderwijsvormen	Werkcollege, Hoorcollege

Doel vak

• The student is able to describe analytically how certain aspects of gender have been or become an issue in religions • The student is able to articulate major parallels and differences between a number of religious traditions in their approaches to gender issues in the past and present • The student is able to switch from religious insider views to academic outsider views and back again

Inhoud vak

This course addresses the important question of the relationship of contemporary and past religions (Buddhism, Christianity, Hinduism, Islam, Shinto, Greek and Babylonian religions) to gender. Gender issues related to male and female models in religious narratives, historical shifts in the religious status of women, mother goddesses and female power, and religious views of homosexuality will be addressed across cultures and religions. To discover underlying patterns of similarity and difference will be the focus. Six sessions will focus on the following six themes: 1. Male and female role models and stereotypes in ancient narratives: mythological and legendary couples and gender differences in the Babylonian Gilgamesh epic, Homer’s Odyssey epic (Odysseus and Penelope), Hesiod (Prometheus and Pandora), the Hindu Mahabharata epic (Nala and Damayanti), and Ramayana epic (Rama and Sita) 2. The changing religious status of women during three crucial shifts in the world history of religions: the Neolithic, Axial Age, and Modernization breakthroughs 3. Cross-cultural comparison of mother goddesses and female power: the Hindu goddess Devi-Durga in India, the Greek goddess Demeter in Minor Asia, the Shinto goddess Amaterasu in Japan 4. Religious rules and attitudes regarding homosexuality in Buddhism and in Islam 5. The image of Mary in Christianity and Islam: virgin, Madonna, mother, heroine, virtue, saint, queen 6. Virginity

Aanvullende informatie onderwijsvormen

lectures (HC)

Toetsvorm

written exam

Vereiste voorkennis

no prerequisites

Literatuur

articles and book chapters will be available via Canvas or the VU library

Toelichting Canvas

The course manual describing the programme and readings in detail will be put on Canvas

Requirements Engineering

Vakcode	XB_0032
Studiepunten	6
Periode	P2
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. A.E. Guzman Ortega
Examinator	dr. A.E. Guzman Ortega
Betrokken Docenten	dr. A.E. Guzman Ortega
Onderwijsvormen	Hoorcollege, Werkcollege

Doel vak

In this lecture students will learn about requirements engineering practices for eliciting, documenting and managing requirements. Through theory and hands-on exercises, students will gain insights into how these practices can be applied during software development. Additionally, students will learn about different software lifecycle models and how requirements engineering activities fit into these models. After following the lecture, students will be able to reason and make decisions about adequate requirements engineering elicitation, documentation and management techniques taking into consideration specific software project characteristics. Additionally, they will be able to apply these techniques in concrete project examples.

Inhoud vak

A good requirements specification is critical for software project success. This lecture gives an introduction to processes, methods and representation forms for specifying and managing requirements. Topics include: Requirements Elicitation, Requirements Analysis, Specification, Modeling, Prioritization, Traceability, Requirements Validation, and Requirements Evolution. Recent topics such as User Participation, Software Analytics, and Requirements Mining will also be covered.

Aanvullende informatie onderwijsvormen

4 hours per week lecture blended with assignments.

Toetsvorm

Assignments: 40% Final written exam: 60% There is a resit for the final written exam. There are no resits for any of the graded assignments. Note: should the lecture be given partially online, the assignments will count for a 100% of the grade and the final written exam will be of pass-fail modality.

Literatuur

Selected chapters (to be announced in lecture of following books): Mandatory (We will only read specific chapters from this book, please wait for the first lecture to decide if you should buy the book): Requirements Engineering Axel van Lamswerde Wiley, 2009 Selected chapters of following books (available in Canvas): Karl Wiegers and Joy Beatty Software Requirements Microsoft Press, 2013 Martina Seidl, Marion Scholz, Christian Huemer, Gerti Kappel UML@Classroom: An Introduction to Object-Oriented Modeling Springer 2015 Bernd Brügge and Allen H. Dutoit Object-Oriented Software Engineering Pearson, 2010.

Aanvullende informatie doelgroep

1CS

Aanbevolen voorkennis

Basic programming experience. Some knowledge about the software lifecycle is of advantage.

Research Project Political Science

Vakcode	S_RPPS
Studiepunten	6
Periode	P2+3
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Sociale Wetenschappen
Vakcoördinator	N. Onopriychuk MSc
Examinator	N. Onopriychuk MSc
Betrokken Docenten	N. Onopriychuk MSc
Onderwijsvormen	Werkgroep

Doel vak

The student will acquire the competences to: (1) to analyze and interpret political data and evaluate the quality, validity and usefulness of political science research findings; (2) demonstrate a critical attitude towards political science literature and established points of view; (3) demonstrate intellectual integrity and the ability to be self-critical. (4) successfully carry out a group research project, applying and refining academic, writing and research skills acquired before; (5) write a group research paper according to the Political Science Writing Guide, and

demonstrate their ability to clearly communicate their research findings and the acquired political science knowledge; (6) to work in a team and contribute to a group product.

Inhoud vak

This seminar will require students to apply at a more advanced level academic and research skills they have already acquired within the first year of political science. Students will apply these skills to a group research project.The research project will have to address a relevant question pertaining to the content of either of two parallel courses followed in period 2 (EU Governance in an International Context and Global Political Economy in the track Mondiale Politiek or Economie van Markt & Overheid in Nationale Politiek en Bestuur). Class attendance is mandatory.

Aanvullende informatie onderwijsvormen

Tutorials.

Toetsvorm

Research proposal, attendance, class participation, presentation(s) and a final group project.

Literatuur

To be announced in the course manual (see CANVAS).

Aanvullende informatie doelgroep

2nd year bachelor students in Political Science; Students in the Minor Political Science.

Aanbevolen voorkennis

Good argumentation skills and basic understanding and experience in research skills / methods.

Research Questions in Bioinformatics

Vakcode	XB_401081
Studiepunten	6
Periode	P1+2+3
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	L. Hoekstra
Examinator	dr. S. Abeln
Betrokken Docenten	dr. ir. K.A. Feenstra, dr. S. Abeln, L. Hoekstra
Onderwijsvormen	Hoorcollege

Doel vak

• kennismaken met 'echt' wetenschappelijk onderzoek • formuleren van een onderzoeksvraag & hypothese • zelfstandig 'diep' gaan in een specialistisch onderzoeksonderwerp • het onderzoek in context plaatsen

Inhoud vak

Benieuwd naar wat onderzoek nu eigenlijk is? Hier ga je echt de diepte in. Maak kennis met hoe wij onderzoek doen, hoe je relevante wetenschappelijke literatuur vindt en leest, en hoe je aan anderen uitlegt wat het onderzoek nu eigenlijk opgeleverd heeft. Onderzoek binnen de Bioinformatica richt zich op het ontwikkelen van (computationele) methodes om biologische experimenten te begrijpen, en biologische functie te voorspellen. Je zult tijdens dit project ontdekken waarom Bioinformatica van groot belang is voor o.a. medisch onderzoek.

Aanvullende informatie onderwijsvormen

Op het onderwep van je keuze ga je de volgende vier onderdelen doen, die elk ongeveer een week tijd kosten: 1. je krijgt van een van onze promovendi een recent paper om in te duiken. Hierdoor kijkt je mee met het onderzoek waar de promovendus op dit moment mee bezig is (je gaat zelf niet mee werken). De focus is op het begrijpen van de onderzoeksvraag. 2. je duikt dieper het onderwerp in aan de hand van twee of drie extra papers. De focus is op het zien hoe de onderzoeksvraag op verschillende manieren aangepakt wordt (in de verschillende papers). 3. je

schrijft een kort populair-wetenschappelijk artikel waarin je de context van het onderzoek schetst en de onderzoeksvraag uitdiept. 4. je maakt een poster om te presenteren voor de groep.

Toetsvorm

• [25%] populair wetenschappelijk artikel in 1000 woorden, met daarin kort geformuleerd de onderzoeksvraag, een review van de geraadpleegde literatuur, en drie figuren: schematische samenvatting onderzoeksmethode en tenminste een met resultaten/grafiek. • [25%] beoordeling van artikelen van de andere studenten (peer-review). • [25%] een poster gebaseerd op het artikel, waarin de peer-review feedback meegenomen wordt. • [25%] presentatie (10 minuten) van je poster, met discussie.

Literatuur

* Cursusmateriaal op www.ibi.vu.nl/wiki/?w=Research_Questions_in_Bioinformatics * Geselecteerd artikelen ter bestudering en presentatie.

Aanvullende informatie doelgroep

dit vak is alleen open voor (pre-master / bachelor) studenten in de minor Bioinformatics and Systems Biology

Overige informatie

Dit vak loopt in peride 2 en 3, maar is daarbinnen in principe vrij te roosteren (individueel werk). De peer review zal in Periode 2 of 3 plaatsvinden, afhenkelijk van de aanmeldingen en wensen van studenten. De presentaties zullen gegeven worden aan het eind van Periode 3 (laatste week januari). Om te starten moet een afspraak gemaakt worden met de coördinator van het vak, en in overleg met de coordinator van de minor Bioinformatics and Systems Biology. In verband met de onderzoekscomponent, zullen delen van de cursus in het Engels gegeven worden. Dit vak maakt deel uit van de Minor Bioinformatics and Systems Biology. Docenten: prof.dr. J. Heringa, dr.ir. K.A. Feenstra, dr. S. Abeln (en anderen).

Revalidatie

Vakcode	B_REVAL
Studiepunten	6
Periode	P1
Vakniveau	300
Onderwijstaal	Nederlands
Faculteit	Fac. der Gedrags- en Bewegingswetensch.
Vakcoördinator	prof. dr. T.W.J. Janssen
Examinator	prof. dr. T.W.J. Janssen
Betrokken Docenten	prof. dr. T.W.J. Janssen
Onderwijsvormen	Practicum, Hoorcollege

Doel vak

Na het volgen van deze cursus • Is de student bekend met relevante begrippen, concepten en modellen uit de revalidatie • Toont de student inzicht in de problematiek van speciale groepen in de context van revalidatie. • Is de student in staat tot een kritische analyse van een probleem uit de revalidatie, arbeidsreïntegratie of hulpmiddelproblematiek.

Inhoud vak

Revalidatie is te omschrijven als 'het gecoördineerd en gecombineerd gebruik van maatregelen op medisch, sociaal, arbeidstechnisch en onderwijskundig terrein die de gehandicapte op de voor hem/haar optimale plaats in de samenleving moet helpen'. Bij uitstek een multidisciplinaire teamprestatie. In deze cursus zullen verschillende aspecten van deze multidisciplinaire aanpak besproken worden, waarbij de verschillende disciplines aan bod komen bij het revalidatieproces van o.a. mensen met een dwarslaesie, niet-aangeboren hersenletsel, amputatie, neurodegeneratieve aandoening, of hartaandoening. Daarnaast zal de vraag worden gesteld welke consequenties een functionele beperking heeft voor o.a. arbeidsparticipatie en hulpmiddelgebruik. De (mogelijke) rol van de bewegingswetenschapper binnen de revalidatie zal ook bediscussieerd worden.

Aanvullende informatie onderwijsvormen

Deze module bestaat uit twee onderdelen: enerzijds een reeks bijeenkomsten (hoorcolleges, een workshop en een bezoek aan een revalidatiecentrum) anderzijds is er een groepsopdracht. De cursusomvang is 6 ects (168u),

waarvan de uren per student als volgt zijn verdeeld over beide onderdelen: collegebijeenkomsten (14x2u), workshops en bezoek revalidatiecentrum (12u), tentamen (2u), de uitwerking van de groepsopdracht (78u), plus tot slot de college- en tentamenvoorbereiding (48u). De groepsopdracht wordt uitgevoerd in viertallen, waarin gewerkt wordt aan een casus in de context van de revalidatie en/of arbeidsreintegratie. De opdracht wordt afgerond met een werkstuk en een referaat tijdens een reeks afsluitende colleges.

Toetsvorm

Toetsing vindt plaats aan de hand van de praktijkopdracht (werkwijze en verslag) en een afsluitend schriftelijk meerkeuzetentamen. Beide onderdelen tellen voor 50% in het eindoordeel, waarbij de deelcijfers niet lager mogen zijn dan een 4.5 (afgerond). De collegestof en hand-outs en een aantal hoofdstukken uit het boek Revalidatie voor Volwassenen vormen het tentamenmateriaal.

Literatuur

J.H.B. Geertzen, G.G. Vanderstraeten & J.S. Rietman. Revalidatie voor volwassenen. Jaar 2014. ISB 9023250796. Handouts en reader.

Overige informatie

Er wordt uitgegaan van latente kennis rond revalidatie op het nivo van het 1ste & 2 de jaar van de opleiding bewegingswetenschappen (Inleiding Bewegen en Gezondheid, Pathologie van het Bewegen en de readers)

Afwijkende intekenprocedure

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

Robot Law and Artificial Intelligence

Vakcode	R_RLAI
Studiepunten	6
Periode	P1
Vakniveau	200
Onderwijstaal	Engels
Faculteit	Faculteit der Rechtsgeleerdheid
Vakcoördinator	dr. mr. M. van der Linden
Examinator	dr. mr. M. van der Linden
Betrokken Docenten	prof. mr. A.R. Lodder, dr. mr. M. van der Linden
Onderwijsvormen	Leergroep, Werkgroep, Hoorcollege

Doel vak

Robot Law and Artificial Intelligence focuses on the societal impact of technological constructs such as intelligent software and robots. The student will learn and understand the profound influence that the autonomous and intelligent technological constructs may have on society, as well as the ethical consequences and legal implications thereof. The student will be able to develop an academic, sound judgement on the future of a robotic society from an ethical and legal perspective.The student will be able to analyze and critically evaluate the legal-ethical dimensions of issues relating to the use of intelligent software and robots.

Inhoud vak

Robots and Artificial Intelligence used to belong to science fiction movies and stories. Also, they were discussed in theoretical academic and popular articles. In recent years both Robots and Artificial Intelligence gradually but strongly are moving away from theory and entering our daily lives. This course focuses on those practical developments, and what role law and ethics play. We do not limit ourselves to present technology, but include prophecies on how society may change in the future and what we can and should do about it.

Aanvullende informatie onderwijsvormen

Lectures and tutorials.

Toetsvorm

Assignments.

Literatuur

Literatuur

Made available via Canvas

Aanvullende informatie doelgroep

Apart from regular students, the course is also available for: Students from other universities/faculties Contractor (students who pay for one course).

Overige informatie

Course objectives: At the end of the course, students are: - aware of the contextual demands (not to stifle technological development by enacting restrictive legislation, while at the same time protecting fundamental rights and freedoms of a democratic society) law has to deal with; - able to assess the legal and societal aspects of a problem in an integrated way and critically reflect on possible approaches and solutions; - able to formulate their own well-founded opinion on the challenges posed by particular applications of robots and AI. Eindtermen: 3, 4 en 15.

Schrijvershuisbezoeken

Vakcode	L_NNBAALG002
Studiepunten	6
Periode	P2
Vakniveau	300
Onderwijstaal	Nederlands
Faculteit	Faculteit der Geesteswetenschappen
Vakcoördinator	prof. dr. J.H.C. Bel
Examinator	prof. dr. J.H.C. Bel
Betrokken Docenten	prof. dr. J.H.C. Bel
Onderwijsvormen	Werkcollege, Excursie

Doel vak

Op basis van interviews met een aantal hedendaagse schrijvers en de analyse van een van hun recente literaire werken: - Kennismaken met literatuuropvattingen van deze schrijvers; - Kennismaken met secundaire literatuur over het begrip poëtica en vaardigheid ontwikkelen in het kritisch hanteren van dit literatuurwetenschappelijke concept; - Leren reflecteren op het scheppingsproces van een literair werk.

Inhoud vak

Onder leiding van de ‘vrije schrijver’ Maxim Februari, en Jacqueline Bel wordt een bezoek gebracht aan vier schrijvers. Elk van de bezoeken wordt in de daaraan voorafgaande week grondig voorbereid op basis van de lectuur van een of meer werken van deze auteur. Telkens vormt één werk, in combinatie met het zoeklicht 'poëtica', het uitgangspunt voor deze bezoeken. Vragen die aan de orde komen zijn: wat is de literatuuropvatting van deze schrijver? Welke kwesties houden hem/haar bezig? Hoe gaat de schrijver te werk? In hoeverre is het schrijven voor hem of haar een beroep?

Aanvullende informatie onderwijsvormen

Werkcolleges van 2 uur per week en huisbezoeken (daarvoor is een middag gereserveerd) onder leiding van de 'vrije schrijver' Maxim Februari en Jacqueline Bel. Er worden vier schrijvers bezocht. De namen worden spoedig bekend gemaakt.

Toetsvorm

Actieve participatie en deelopdrachten (moet voldoende zijn). Colleges moeten altijd grondig zijn voorbereid conform de instructies uit de studiehandleiding. Afrondend eindwerkstuk (100%) of schriftelijk tentamen (100%). Beide toetsvormen moeten voldoende zijn.

Literatuur

Een werk van de 'vrije schrijver' ('Klont' van Maxim Februari) en van de schrijvers aan wie een huisbezoek gebracht wordt; secundaire literatuur over deze schrijvers en secundaire literatuur over poëtica-onderzoek (Van den Akker/Dorleijn, Sötemann).

Aanvullende informatie doelgroep

De minor staat open voor alle tweede- en derdejaars bachelorstudenten.

Overige informatie

Aanwezigheid verplicht (80%). Alleen met een gegronde reden kan iemand afwezig zijn. Is een student door omstandigheden vaker afwezig dan toegestaan dan kan dit eventueel worden gecompenseerd met een extra opdracht. Het college is onderdeel van de minor Aan de slag met literatuur. Het college Meesterwerken uit de wereldliteratuur dient tegelijkertijd gevolgd te worden.

Secure programming

Vakcode	XB_40005
Studiepunten	6
Periode	P2
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. E. van der Kouwe
Examinator	dr. E. van der Kouwe
Betrokken Docenten	dr. E. van der Kouwe
Onderwijsvormen	Werkcollege, Hoorcollege

Doel vak

This is an introductory course on computer security. The emphasis will be on how to develop applications with security in mind. At the end of the course, students should be familiar with the following: 1. Basic concepts in computer security. 2. How common vulnerabilties can be exploited to undermine software security. 3. How proper design, implementation, and testing can make software more secure. 4. How cryptography can be used to make software more secure. 5. How automated tools can be used to make software more secure.

Inhoud vak

The course is divided into the following modules: A. Introducting to security and basic terminology B. Secure programming 1. Designing secure programs 2. Conservative programming 3. Testing for security C. Cryptography 1. Desired properties 2. Symmetric and asymmetric cryptgraphy 3. Public key infrastructure 4. Simple attacks against cryptography D. Systems security 1. Memory error vulnerabilities 2. How to exploit vulnerable programs 3. Common defenses against memory errors

Aanvullende informatie onderwijsvormen

Lectures and practical assignments.

Toetsvorm

The final grade is computed based on a written exam (50%) and the weighted average of practical assignments (50%). To pass the course, the exam grade must be at least 5.0, each assignment grade must be at least 4.0, and the final grade must be at least 5.5. There is no resit opportunity for the practical assignments.

Vereiste voorkennis

Ability to program in C or C++ is required, preferably in a POSIX environment (such as Linux).

Literatuur

Lecture slides

Aanbevolen voorkennis

Knowledge of x86_64 assembly (reading, not writing) and SQL is strongly recommended.

Sensomotorische Coordinatie

Vakcode	B_SENSOCOR
Studiepunten	6
Periode	P2
Vakniveau	200
Onderwijstaal	Nederlands
Faculteit	Fac. der Gedrags- en Bewegingswetensch.
Vakcoördinator	dr. C.E. Peper
Examinator	dr. C.E. Peper
Betrokken Docenten	dr. C.E. Peper, dr. K. van der Kooij
Onderwijsvormen	Hoorcollege, Practicum, Werkcollege

Doel vak

Algemene doelstellingen: • Oriëntatie op het studieterrein van sensomotorische coördinatie: de student is bekend met het soort vragen dat in het onderzoek op dit terrein wordt bestudeerd; • Aan het eind van de cursus heeft de student basale kennis van twee benaderingen op dit terrein (de neurowetenschappen en de psychologie) en van feiten en begrippen die binnen deze benaderingen centraal staan; • De student kan de verkregen kennis en inzicht van sensomotorische coördinatie toepassen op concrete problemen, en kan hierbij samenwerken met medestudenten. Specifieke doelstellingen: De student heeft kennis van en inzicht in • fundamentele problemen in de studie van sensomotorische coördinatie; • neurofysiologische achtergronden van de sensomotorische coördinatie; • psychologische achtergronden van de sensomotorische coördinatie; • basisprincipes van de coördinatiedynamica.

Inhoud vak

Bij bewegen staan we zelden stil. We lopen, fietsen, spreken, schrijven, vangen, springen, slaan en schoppen alsof het niets is. Toch gaat het hier, als je er even over nadenkt, om vrij opzienbarende prestaties. Het menselijk lichaam telt meer dan 600 spieren en meer dan 100 gewrichten:daar kunnen heel wat bewegingen mee gemaakt worden, maar hoe maken we juist die ene, gewenste beweging? Dankzij het zenuwstelsel zijn onze bewegingen in de regel goed gestuurd en gecoördineerd, tenzij we te veel hebben gedronken of lijden aan een ziekte die de motoriek ondermijnt. De vraag die in deze cursus centraal staat is hoe de sturing en coördinatie van bewegingen tot stand komen, en welke rol onze sensorische systemen daarbij spelen. De cursus biedt een brede en gevarieerde inleiding in dit veelzijdige onderzoeksterrein. Naast een algemene introductie in de centrale thema's, wordt met name aandacht besteed aan de neurofysiologische en psychologische achtergronden van bewegingscoördinatie. Hierbij komt ook de relatie tussen waarnemen en bewegen ruimschoots aan bod. De stof wordt geïllustreerd aan de hand van concrete voorbeelden van zowel alledaagse situaties als bepaalde ziektebeelden.

Aanvullende informatie onderwijsvormen

28 uur/ 14 hoorcolleges 2 uur/ 1 vragenuurtje 10 uur/ 5 web-labs (incl. voorbereiding) 4 uur/ 2 werkcolleges 2 uur/ voorbereiding werkcolleges 95 uur/zelfstudie (incl. college- en tentamenvoorbereiding) 3 uur / tentamen 2 uur/ 1 practicum (alleen voor reguliere eerstejaars) 2 uur/ voorbereiding practicum (alleen voor reguliere eerstejaars) 20 uur/ werkstuk schrijven (alleen voor reguliere eerstejaars) 24 uur/ extra zelfstudie-opdracht, incl. tentamenvoorbereiding (alleen voor recidivisten, minor- en bijvakstudenten) De contacturen bestaan uit 14 hoorcolleges, 1 practicum, 2 werkcolleges en een vragenuurtje. Let op: Reguliere eerstejaarsstudenten voeren andere extra opdrachten uit (practicum & werkstuk) dan recidivisten, minor- en bijvakstudenten (zelfstudie-opdracht). - De hoorcolleges hebben tot doel de stof in de te bestuderen literatuur nader toe te lichten en met o.a. voorbeelden en opdrachtjes tot leven te brengen. Aanwezigheid bij de hoorcolleges is niet verplicht, maar de inhoud van de colleges maakt wel deel uit van de tentamenstof. - Tijdens de werkcolleges worden een aantal onderwerpen uit de collegestof nader besproken. De werkcolleges worden uitgevoerd in groepjes van 15-20 studenten. - Daarnaast wordt de student regelmatig uitgenodigd tot zelfwerkzaamheid aan de hand web-labs, die worden uitgevoerd via Canvas. Deze opdrachten worden niet behandeld tijdens de colleges. Sommige web-labs fungeren primair als een toets van de beheersing van de gedoceerde stof, terwijl in andere web-labs deze stof verder wordt uitgediept. Iedere web-lab is gedurende ongeveer 1 week beschikbaar. - Reguliere eerstejaarsstudenten voeren als extra opdracht een practicum uit, waarbij zij een aantal coördinatiefenomenen aan den lijve ondervinden en aan de hand van opdrachten bestuderen. Naar aanleiding van dit practicum schrijft de student een individueel werkstuk. - Recidivisten, minor- en bijvakstudenten bestuderen zelfstandig extra leerstof, die met een aantal extra vragen getoetst wordt tijdens het tentamen. Verplichte onderdelen voor reguliere eerstejaars: practicum, werkcolleges, web-labs, werkstuk, tentamen. Verplichte onderdelen voor recidivisten, minor- en bijvakstudenten: werkcolleges, weblabs, zelfstudie-opdracht (incl. toetsing), tentamen.

Toetsvorm

Schriftelijk tentamen met ja/nee-vragen. Het eindcijfer wordt voor 85% bepaald door het cijfer op dit tentamen.

Reguliere eerstejaarsstudenten: De overige 15% wordt bepaald door het cijfer voor het werkstuk. Het cijfer voor het werkstuk dient minimaal een 4 te zijn. Daarnaast zijn uitvoering van de web-labs en actieve deelname aan het practicum en de werkcolleges een voorwaarde om de cursus te kunnen afronden. Recidivisten, minor- en bijvakstudenten: De zelfstudie-opdracht wordt getoetst d.m.v. aantal een aantal extra, ‘open’ vragen, waarop een kort antwoord moet worden gegeven. Het cijfer voor dit onderdeel van het tentamen bepaalt voor 15% het eindcijfer. Daarnaast zijn uitvoering van de web-labs en actieve deelname aan de werkcolleges een voorwaarde om de cursus te kunnen afronden.

Literatuur

Verplichte literatuur: - J. Tresilian (2012). Sensorimotor control & learning. An introductionto the behavioral neuroscience of action. Palgrave Macmillan: H1 t/m 4, §5.3, §7.1-2, §8.1, H9, H11, H12. Nadere specificatie van verplichte paragrafen wordt aangegeven in de cursushandleiding. - Collegedictaat Extra verplichte literatuur voor recidivisten, minor- en bijvakstudenten (zelfstudie-opdracht): Hoofdstuk 8 (Locomotion on Legs) uit bovengenoemd boek. Geadviseerde literatuur: - Uit bovengenoemd boek: §5.4.2-3, §6.3, §7.3-5 (i.h.b. §7.5.4).

Afwijkende intekenprocedure

Intekenen voor dit vak is mogelijk vanaf 3 september. De indeling van de werkcollege- en practicumgroepen vindt plaats via Canvas.

Toelichting Canvas

Via Canvas worden de o.a. volgende zaken beschikbaar gesteld en/of geregeld: - cursushandleiding - collegedictaat - college-slides (na afloop van elk college) - oefententamen & antwoorden (kort voor tentamendatum) - (her)tentamenantwoorden (na afloop van (her)tentamen) - web-labs (op de aangegeven momenten) - inschrijving werkcolleges en practicum - handleiding werkcolleges en practicum - formateisen werkstuk - inleveren werkstuk - werkstukcijfer - diverse mededelingen tijdens de cursus

Sexual Health: Threats and Opportunities

Vakcode	AB_1034
Studiepunten	6
Periode	P1
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. M.E. Muntinga
Examinator	dr. M.E. Muntinga
Betrokken Docenten	dr. M.E. Muntinga
Onderwijsvormen	Hoorcollege, Werkgroep

Doel vak

The aim of the course is to address sexual health in its larger societal, medical and scientific context, and to discuss way in which public health research and policy can contribute to better sexual health of populations, communities and individuals. This involves learning objectives related to theory, research methodology, health outcomes and health services. Learning objectives are: 1. Students can describe different theoretical perspectives used to understand and investigate sexuality, including value systems across cultures and communities, and identify these perspectives in sexual health research approaches and practices; 2. Students can describe and explain patterns and trends in sexual outcomes of (vulnerable) social groups; 3. Students can describe and critically reflect on methodologies and outcome measures used to investigate sexual health and sexual health risk; 4. Students can discuss intervention strategies and priorities to promote sexual health of communities, and can explain challenges researchers, policy makers and practitioners face in planning and implementing sexual health programs; 5. Students can formulate a qualitative or quantitative research question into the field of sexual health, systematically search scientific literature, write a literature review in which they answer their research question, and present their findings to their peers; 6. Students can seek out and synthesize different sources of knowledge (scientific, cultural, experiential) to describe current challenges in sexual health, en formulate recommendations for research, policy and practice.

Inhoud vak

Is female sexual dysfunction a medical condition, or a myth created by pharmaceutical companies? How can we prevent unplanned pregnancies among young girls, and where do elderly couples affected by dementia experience sexual health problems? Should all sex workers take PrEP? And what are common biases in qualitative and

qualitative sexual health research? These are only a few of the questions we will be addressing in the course Sexual Health. This course approaches sexual health from a public health perspective. The course's focus is oriented towards sexual health issues of populations rather than that of individuals (Wellings et al, Sexual Health. A Public Health Perspective, 2012). We will discuss sexual health issues in their larger societal, scientific and individual context, and explore ways in which aspects of identity and social position play a role in vulnerability for ill sexual health. In addition, we will think critically about ways in which academic knowledge and methodology can be used to improve sexual health of populations. Lectures and literature address specific sexual health themes and topics, which will be further elaborated on in group seminars. The course aims to give an overview of current insights and challenges related to sexual health of populations, both at the research and policy level. We will discuss how information about sexual health issues of individuals and groups can be collected, and how research findings can be translated into public health policy or even clinical guidelines. The course is rooted in practice: during the course, students will be actively exploring sexual health issues as they appear in cultural outlets such as (social) media, but also be encouraged to reflect on sexual health in their own environments. The course is guided by the textbook Sexual Health. A Public Health Perspective (2012). This book covers five main domains of sexual health (Conceptual and theoretical aspects of sexual health, Sexual health outcomes, Risk and vulnerability, Interventions to improve sexual health, and Measuring and assessing sexual health status), each of which will be discussed during this course.

Aanvullende informatie onderwijsvormen

The course consists of seminars (1.45 minutes, on Monday and Wednesday) and lectures (on Wednesday morning). Each week, a new theme is introduced that corresponds to the textbook chapters (i.e. Sexual Health. A Public Health Perspective (2012)). Students are encouraged to actively participate in group discussions and exchange scientific, cultural and individual perspectives. We will work in a non-hierarchical setting, in which each individual's contribution is valued, and learning from each other is considered an essential classroom asset. Lectures center on sexual health topics in the context of a textbook chapter. For instance, a lecture on sexual violence in the week about sexual health outcomes, or a lecture on research bias in the week about sexual health methodology. The seminars center on elaboration and in-depth analysis of the theme within its scientific, societal and individual context. In the Monday sessions, a different group of students critically reviews the required literature, and students work on their course assignments. in the Wednesday sessions, students discuss current sexual health topics from a research and policy perspective, elaborate on the information presented in the textbook, and apply their knowledge to public health challenges. Towards the end of the course, students receive feedback on their assignments in the seminars. Attendance: Lecture attendance is recommended. Semianr attendance is obligatory. If a student is absolutely unable to attend, and alternative assignment should be made and handed in before the end of the course.

Toetsvorm

The assessment of the course consists of four parts: 1. Literature review – group grade (40%) 2. Individual assignment – individual pass/fail 4. Written exam on October 26, 2019 – individual grade (60%) To complete the course, a minimum score of >5.5 for both the literature review and the exam is required. The grades cannot be compensated. In addition, the field assignment should be passed. Assignment 'literature review' - Students collaborate in groups of two or three to write one shared paper. Writing tasks should be shared equally among group members. Assignment 'field work' - Based on their literature review research question, students identify a current sexual health issue currently receiving attention in society (e.g. in the media, in health care or among their peers). They explore this issue more in-depth by collecting contextual data (e.g. online, through interviews or document analysis). Combined with their findings and recommendations from the scientific literature review, they will propose a follow-up plan, for instance a policy measure or research project aimed at for instance NGO's, (local) governments, target communities, primary care organisations etc. Students present their proposal by means of a poster or powerpoint presentation.

Literatuur

The literature for this course consists of: 1. The book Sexual Health. A Public Health Perspective (edited by Kaye Wellings, Kirstin Mitchell & Martine Collumbien). ISBN: 9780335244812. 2. Scientific articles

Aanvullende informatie doelgroep

Target group for this minor course are students from FALW, Biomedical Sciences and other students eligible to participate in the Minor five big issues of Health, as well as students participating in the Gender & Diversity minor.

Overige informatie

We may or may not always notice, but we live in a culture saturated with sexuality. We see sex on roadside billboards and read about it in newspapers and magazines. Sex flashes at us from television screens. We discuss our sex lives and those of others in cafes, on sports courts and at work, and sex jokes are part of the repertoire of many a comedian. In our modern, wired societies, sexually explicit material can be easily accessed on the internet. It is safe to say we cannot imagine our world without sexuality. Sexuality as an academic subject covers more than

just the physical act of having sex. When we talk about sexuality, we refer to a range of issues pertaining to, for instance, the body, sexual identities, orientations and expressions, sociocultural value systems, and knowledge-producing organisations and institutions. Within the institute of science, the study of human sexual life and relationships is called sexology. American scientist Alfred Kinsey (1895 – 1956) is considered a pioneer in the sexology field, and his work has markedly contributed to our understanding of human sexuality – and how to research it. Now a familiar term to many, sexual health as a discipline of study emerged only after Kinsey completed his most famous work. Because sex and sexuality are and remain important throughout the life course and across cultures, sexual health is not confined to a particular life stage, for instance the reproductive years, or to certain sociocultural groups or identities. The World Health Organisation (WHO) defines sexual health as a state of physical, mental and social well-being in relation to sexuality. It requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences, free of coercion, discrimination and violence. (www.who.int/topics/sexual_health). This definition emphasizes a positive approach towards sexuality and sexual behaviour, positioning sexual health as a fundamental aspect of human rights and highlighting the potential benefits of sexual activity, such as emotional and physical pleasure, intimacy and individual expression. However, definitions of sexual health that emerged during and after periods marked by the rapid spread of sexually transmitted infections (STI's) such as HIV/AIDS have highlighted the threats of sexuality, conceptualizing sexual health as, for instance, the absence of disease and illness. In this course, sexual health and its themes will be mainly approached from a public health perspective. The focus is oriented towards sexual health issues of populations rather than that of individuals (Wellings et al, 2012). Different topics related to sexual health will be discussed in more detail in order to come to a better understanding of sexual health in its societal and scientific context. In addition, we will address theories and methodologies of research into sexual health, and examine implications of outcomes of such research for public health policy. Course instructors: - Maaike Muntinga, PhD (course coordinator) - Lia van Ham, PhD

Afwijkende intekenprocedure

You have to register for the Minor Five Big Issues of Health or the minor Gender and Diversity.

Software Design

Vakcode	XB_40007
Studiepunten	6
Periode	P4
Vakniveau	200
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. I. Malavolta
Examinator	dr. I. Malavolta
Betrokken Docenten	dr. I. Malavolta
Onderwijsvormen	Hoorcollege, Werkcollege

Doel vak

The main objective of the course is to let you obtain insights and knowledge about recurrent software design problems, object-oriented and model-driven software design methodologies and techniques. Develop critical reasoning skills to select the most appropriate object-oriented design patterns and apply them to the (software) problem at hand.

Inhoud vak

Developing real software systems is complex; they are large, and their development often starts when it is still unclear what they should precisely do. The goal of software design is to model modern, complex software systems in a systematic manner. The lectures will cover and apply a number of software modeling techniques. You will learn which technique is the most appropriate for which problem, how to describe a (software) problem in models, how to use such models to reason about software, and finally how to use models to discuss your ideas and plans with other stakeholders so that requirements are clarified and software systems are well understood and developed in a more reliable way. The course also introduces the most known design patterns for creating robust, better organized, and maintainable software systems. Design patterns can be considered as standardized methods of solving recurrent design problems regarding object-oriented software systems. The course is based on the Unified Modelling Language (UML).

Aanvullende informatie onderwijsvormen

Lectures (H). Modeling exercises (W). Weekly presentations (pre).

Toetsvorm

Toetsvorm

In this course the assessment is composed of two components: - Team project (70% of the final grade): it will be carried out throughout the whole course by groups of 4 students; each part of the project will be started during the laboratory sessions and finished as homework, so that you will likely be on track within the course schedule. The result of the team project is composed of two parts: (i) a modelling part, and (ii) an implementation part. Both the modeling and implementation parts will be evaluated by the instructors according to a shared assessment rubric. Within the team project, each of you will be responsible for a certain part of the project; as a team, you will report the responsibilities that each team member took in the project. In case of issues in some specific parts of the project, the team member responsible for them will be the contact point for them. - Written exam (30% of the final grade): it consists of 20 multiple-choice questions (20 points) and it will be a closed-book exam. The exam aims to assess your knowledge of the methodologies, constructs of the UML language, practical insights that are discussed in the lectures. The written exam is based on the mandatory books listed in the Readings section of this guide. - Code reviews (pass/fail): for assignments 2 and 3 each student will perform a code review on the source code of the project of another team. Instructions on how to do code reviews will be provided during the course. Code reviews will benefit both (i) the reviewer since he will have the chance to look at other teams' code and get inspiration from them and (ii) the team receiving the review since they will get additional feedback about how to improve their project.

Literatuur

- [Main text book] Martina Seidl, Marion Scholz, Christian Huemer, Gerti Kappel, "UML@Classroom: An Introduction to Object-Oriented Modeling", 2015. - John Ousterhout, “A philosophy of software design”, Yaknyam Press, 2018. - Martin P. Robillard, “Introduction to Software Design with Java”, Springer, 2019. - [only Section 3.4 and Chapter 8] Ian Sommerville, “Engineering Software Products”, Pearson, 2019

Aanvullende informatie doelgroep

2CS

Aanbevolen voorkennis

Object-oriented principles in any programming language (for instance Scala, Java, C/C++, Python)

Sportpsychologie

Vakcode	B_SPORTPSY
Studiepunten	6
Periode	P1
Vakniveau	200
Onderwijstaal	Nederlands
Faculteit	Fac. der Gedrags- en Bewegingswetensch.
Vakcoördinator	dr. R.R.D. Oudejans
Examinator	dr. R.R.D. Oudejans
Betrokken Docenten	dr. R.R.D. Oudejans
Onderwijsvormen	Hoorcollege

Doel vak

Studenten beschikken over kennis van en inzicht in de belangrijkste onderwerpen,stromingen en theorieën van de sportpsychologie.

Inhoud vak

De cursus beoogt de studenten te introduceren in het domein van de sportpsychologie en hen kennis te laten maken met het gebied van de exercise psychology. Aan de hand van het boek ‘Sportpsychologie’ vindt kennismaking plaats met de belangrijkste onderwerpen van de sportpsychologie. Aan de orde komen: - sportpsychologie en de relatie van sportpsychologie met 'de' psychologie; de ontwikkeling van de sportpsychologie; - motivatie, attributie en emotie en sport; - persoonlijkheid en sport; - mentale vaardigheden en mentale training; - coaching; - sportteams; - agressie, blessures, burn-out, verstoord eetgedrag en 10.000 uur oefenen; Daarnaast wordt kort stilgestaan bij mentale voorstellingen. Kennismaking met de exercise psychology vindt plaats aan de hand van het hoofdstuk over "Exercise behavior and adherence" uit het boek ‘Foundations of sport and exercise psychology’ van Weinberg & Gould, waarbij onder andere aandacht wordt gegeven aan verschillende modellen van gedragsverandering.

Aanvullende informatie onderwijsvormen

De cursus omvat 12 hoorcolleges van elk twee uur en wordt afgesloten met een tentamen. De resterende circa 144 uren zijn voor zelfstudie. Twee van de 12 colleges zijn gastcolleges verzorgd door sportpsychologen die in de praktijk van de sport werkzaam zijn.

Toetsvorm

Tentamen (waar-onwaarvragen). Het tentamen duurt 2,75 uur inclusief dyslexietijd.

Literatuur

- Bakker, F.C., & Oudejans, R.R.D. (2019). Sportpsychologie. Nieuwegein: Arko Sports Media, 5de herziene druk; - Weinberg, R.S. & Gould, D. (2015 of 2019). Foundations of sport and exercise psychology. Hieruit Hoofdstuk 18 (6de druk pp. 425-456) of Hoofdstuk 19 (7de druk pp.435-466), Exercise behavior and adherence. Champaign, IL: Human Kinetics. - Aanvullende literatuur wordt aan het begin van de cursus opgegeven en is opgenomen in de cursushandleiding.

State, Power and Conflict

Vakcode	S_SPC
Studiepunten	6
Periode	P1
Vakniveau	100
Onderwijstaal	Engels
Faculteit	Faculteit der Sociale Wetenschappen
Vakcoördinator	prof. dr. E.B. van Apeldoorn
Examinator	prof. dr. E.B. van Apeldoorn
Betrokken Docenten	dr. H.J.E.M. Jongen, prof. dr. E.B. van Apeldoorn
Onderwijsvormen	Hoorcollege

Doel vak

Learning outcomes: Knowledge and understanding – The student has acquired knowledge and understanding of: (1) the different approaches to the concept of power and is able to apply these to the analysis of (contemporary) political issues; (2) what ‘states’ are and how the modern state and the modern states system came into being; (3) key approaches in political science and an overview of the discipline and major sub-disciplines; (4) the main developments in the history of world politics from the Peace of Westphalia to the Iraq War and the current era of globalization and the power shift to Asia; (5) the main patterns of cooperation and conflict between states as well as between non-state actors and be able to understand some of these patterns by the application of key political science concepts and some key approaches within the sub-discipline of International Relations.

Inhoud vak

The course, which offers a broad introduction to the major concepts of and main approaches in political science, consists of two main parts. After a critical overview of different concepts of power, the concept of the state and contending perspectives on the conflict and cooperation within modern political systems, the course introduces students to contemporary world politics through an overview of international political history from the 17th century to the present. Here we seek to understand history by identifying recurrent patterns of cooperation and conflict not just between states but also involving non-state actors, and by applying some of the concepts and approaches dealt with in the first part of the course. The course will end with a discussion of contemporary issues within the context of a globalized world politics, such as the ongoing War on Terror, the communications revolutions and its impact upon power.

Aanvullende informatie onderwijsvormen

Lectures

Toetsvorm

Written examination.

Literatuur

To be announced in the course manual (see CANVAS).

Aanvullende informatie doelgroep

1st year bachelor students in Political Science. The course is also open as an elective course for VU-students and Exchange Students.

Statistical Methods

Vakcode	X_401020
Studiepunten	6
Periode	P2
Vakniveau	200
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. D. Dobler
Examinator	dr. D. Dobler
Betrokken Docenten	dr. D. Dobler
Onderwijsvormen	Hoorcollege, Practicum, Werkcollege, Deeltentamen schriftelijk

Doel vak

After this course, the student should be able to: - summarize data informatively (graphical and numerical summaries for various kinds of data types), - apply various probabilistic and statistical procedures in different contexts (basic probability rules, law of total probability, Bayes' theorem, estimation of means pro-portions, and standard deviations, hypothesis tests about those and about categorical and bivariate data, in particular linear regression models), - interpret the results of the statistical procedures (conditional probabilities, expected values, outcomes of hypothesis tests, prediction in a linear regression context), - compare different techniques in different situations and when to apply them (1- or 2-sample problems, dependent / independent data, variances known / unknown, test homogeneity between multiple populations or independence of variables within one population, test correlation or linear relationship, checking the assumptions underlying the different tests). - create informative and scientifically appropriate reports (i.e. a good mixture of figures and written text, completeness of the report, yet conciseness, question-related, and use of adequate language), - communicate with colleagues about statistical topics (solve the assignments in groups of two students, solve theoretical exercises in groups of four to six students, being able to talk about the statistical subjects with other students, the teaching assistants, and the teacher of the course), - lose fear of complex mathematical formulas and develop further interest in statistical aspects in computer science (i.e. apply the formulas and understand what happens; get to know how other fields of science are touched by the course content) - reflect on difficult content, learn how to use group work and discussions to overcome obstacles (express the problems in your own words, get immediate feedback in conversations with peers and the teacher/teaching assistant).

Inhoud vak

- Summarising data; - Basics of probability theory; - Estimating means and fractions; - Hypothesis testing for one- and two-sample problems about means and proportions; - Correlation and linear regression; - Contingency tables.

Aanvullende informatie onderwijsvormen

Lectures (10x2 hours; in general, two lectures per week), exercise classes (6x2 hours; in general, once per week), and computer classes (6x2 hours; in general, once per week). Attendance to all lectures and classes is not mandatory but strongly recommended.

Toetsvorm

Mandatory (group) assignments and exams (midterm and final, both mandatory). You will work on assignments during weekly computer classes. In the case that one of the exams (midterm or final) is not passed, a resit exam can be taken which covers the whole lecture material. The final grade consists of the following components (with the indicated weights): the exam grade (75%) and the average assignment grade (25%). The exam grade is either the weighted average of the midterm exam grade (40%) and the final exam grade (60%), or it is the resit exam grade (100%). Both, the exam grade and the overall grade have to be at least 5.5 in order to pass the course. If the resit exam is written, the homework assignment grades still count towards the final course grade as explained above. If both partial exams are passed, then doing the resit exam is not possible anymore. There is no resit possibility for the assignments.

Literatuur

Mario F. Triola "Elementary Statistics" Twelfth Edition (Pearson New International Edition) ISBN 978-1-292-03941-1

Aanvullende informatie doelgroep

2CS, 2LI, 2IMM

Aanbevolen voorkennis

Basic mathematical knowledge; this includes fractions, square-roots, sums, and simple manipulations of equations.

Strategic Management of Technology and Innovation

Vakcode	E_BK3_SMTI
Studiepunten	6
Periode	P1
Vakniveau	300
Onderwijstaal	Engels
Faculteit	School of Business and Economics
Vakcoördinator	dr. H. Özalp
Examinator	dr. H. Özalp
Betrokken Docenten	prof. dr. ir. J.J. Berends, I. Hellemans, dr. H. Özalp, mr. R.A.K. Audhoe MSc, K. Borner, prof. dr. ir. F. Deken
Onderwijsvormen	Werkcollege, Hoorcollege

Doel vak

Academic & research skills: In this course students learn to critically evaluate innovation management concepts from academic literature and popular management press. Bridging theory and practice: In this course, students gain theoretical understanding concerning: - innovation types and the external innovation environment including innovation trajectories, standards, platforms, and ecosystems - the development of innovation strategies and their operationalization in project selection, collaboration, and protection - the product development process and organizational conditions for innovation The course offers insight in the strategic importance of technological innovation for firms and society, recent developments in technology and innovation, and helps to develop skills to analyze real life cases.

Inhoud vak

This course focuses on the strategic management of technology and innovation. Innovation refers to the development and implementation of new products, services, processes and business models and many of those innovations are enabled by technological developments. Innovation is crucial for business organizations to stay competitive in ever changing markets. In this course, students learn to understand and apply basic theories behind the processes of technology-based innovation within organizations and their environments, the development of innovation strategies, and the organizational implementation of innovation strategies. Theoretical understanding is applied in a simulation game and real life cases focusing on managerial dilemmas in the management of innovation.

Aanvullende informatie onderwijsvormen

Lectures Tutorials

Toetsvorm

Individual assignment Group assignments Written exam

Literatuur

- Schilling, M. (2019). Strategic management of technological innovation (6th ed). Boston: McGraw-Hill. - Selection of academic articles (listed in course manual) - Lectures, tutorials, and lecture slides/knowledge clips

Street Law

Vakcode	R_StrLaw
Studiepunten	6
Periode	Ac. Jaar (september)
Vakniveau	300

Onderwijstaal	Nederlands
Faculteit	Faculteit der Rechtsgeleerdheid
Vakcoördinator	mr. dr. A.M. Reneman
Examinator	mr. dr. A.M. Reneman
Betrokken Docenten	mr. drs. M.C. Wijnen, mr. dr. A.M. Reneman
Onderwijsvormen	Training, Werkgroep

Doel vak

Studenten moeten aan het begin van het programma persoonlijke leerdoelen stellen, waar voor hen gedurende de onderwijsperiode de nadruk op komt te liggen. Gedurende het programma reflecteren zij op het recht en hun eigen leerproces. Voor het vak gelden de volgende algemene leerdoelen. Na dit vak is de student in staat om: -Een (nieuw) juridisch onderwerp te doorgronden door te analyseren welke belangen en rechten op het spel staan, hoe deze (kunnen) conflicteren en welke oplossingen en/of rechtsmiddelen er mogelijk zijn en vervolgens daarop te reflecteren, -Een lesplan te ontwerpen en uit te voeren dat scholieren (niet-juristen) op effectieve en creatieve wijze laat nadenken over het recht, -Scholieren (niet-juristen) op een duidelijke wijze mondeling uitleg te geven over het recht, -In een groep samen te werken om een lesplan binnen een voorgeschreven termijn te voltooien en uit te voeren -Zelf leerdoelen te stellen en te reflecteren op het eigen leerproces, -Effectief en respectvol feedback te geven op het werk van medestudenten en op dat van de scholieren. -Vooroordelen van zichzelf en anderen te herkennen en toetsen, te benoemen vanuit welke normen en waarden hij/zij tegen een bepaald onderwerp of probleem aankijkt en met respect voor ieders achtergrond en opvatting te discussiëren en samen te werken. Eindtermen: 1-2, 5, 7, 9, 17-21.

Inhoud vak

Street Law is een vak waarin studenten workshops geven over het recht aan middelbare scholieren. Deze workshops gaan over actuele onderwerpen, waar scholieren in hun dagelijks leven mee te maken krijgen en waarbij conflicterende rechten en belangen aan de orde zijn, zoals recent de Covid-19 maatregelen en discussie rond het verbod op lachgas en vuurwerk. Street Law is een Community Service Learning project en bij uitstek een Law in Action vak. Studenten kiezen, in samenspraak met de scholen en scholieren de onderwerpen van de workshops. In een Street Law workshop leren scholieren geen regels, maar denken ze kritisch en creatief na over het recht. Studenten gebruiken daarvoor interactieve lesmethoden, zoals discussies, (rollen)spellen, simulaties en oefenrechtbanken. Zij faciliteren dus eerder de workshop dan dat zij zelf doceren. Bij Street Law staat het leerproces van rechtenstudenten centraal. Zij maken zelf lesplannen over actuele juridische onderwerpen. Zij gaan actief aan de slag met het recht en het ontwikkelen van hun eigen vaardigheden: onderzoeken, creatief en probleemoplossend denken, samenwerken, communiceren, presenteren en omgaan met diversiteit. Voordat studenten een workshop kunnen geven over een onderwerp, moeten zij zich zelf eerst in het onderwerp verdiepen, vaststellen welke (conflicterende) rechten en belangen er op het spel staan en nadenken over welke oplossingen en/of rechtsmiddelen er mogelijk zijn. Zij moeten vervolgens creatief nadenken over de manier waarop scholieren het beste over dit onderwerp kunnen leren, op zoek naar geschikt lesmateriaal en een lesplan schrijven en uitvoeren. Studenten stellen aan het begin van het Street Law programma eigen leerdoelen vast en reflecteren gedurende het programma op het recht en hun eigen leerproces. Zij krijgen de mogelijkheid om uit de beschermde en abstracte wereld van de universiteit te stappen en hun kennis in te zetten voor de lokale samenleving. Street Law is dan ook een vorm van Community Service Learning. Aan het vak kunnen maximaal 25 studenten meedoen. De deelnemende studenten krijgen voordat zij voor de klas gaan een korte gezamenlijke training. Zij ondergaan zelf de Street Law methoden, reflecteren daarop en leren in koppels hun eigen lesplan te ontwerpen en uit te voeren. Zo beginnen zij goed voorbereid aan hun workshops. Gedurende de het programma komen de studenten en docenten wekelijks bij elkaar voor feedback op de lesplannen en intervisie van de gegeven lessen.

Aanvullende informatie onderwijsvormen

Het onderwijs bestaat uit: Een tweedaagse training waarin studenten de Street Law methode wordt aangeleerd Wekelijkse bijeenkomsten waarin studenten: - vaardigheden oefenen - lesplannen uitvoeren en daar feedback op ontvangen - in groepjes aan hun lesplannen werken

Toetsvorm

Docenten beoordelen studenten op basis van een portfolio (zelfreflectie-opdrachten, ontworpen en uitgevoerde lesplannen) en participatie in de bijeenkomsten.

Vereiste voorkennis

Het vak is alleen toegankelijk voor studenten Rechtsgeleerdheid, die voldoen aan de toelatingseisen voor de minor Algemene Rechtspraktijk of Law and Global Society.

Literatuur

Literatuur wordt op Canvas geplaatst.

Aanvullende informatie doelgroep

Het 6 ECTS vak Street Law staat open voor alle Nederlandstalige tweede en derdejaars studenten Rechtsgeleerdheid. Studenten die kiezen voor de minoren Algemene Rechtspraktijk of Law and Global Society kunnen Street Law in de plaats doen van één 6 ECTS vak of twee 3 ECTS vakken, bij voorkeur uit de tweede of derde periode. Studenten die andere minoren volgen, kunnen de examencommissie om toestemming vragen om een vak in te wisselen voor Street Law. Het is ook mogelijk Street Law te kiezen als extra-curriculaire activiteit/extra vak.

Afwijkende intekenprocedure

Studenten die aan dit vak willen deelnemen dienen, liefst zo snel mogelijk, maar uiterlijk 14 september 2020 een email te sturen aan a.m.reneman@vu.nl. Vervolgens krijgen zij een aanmeldformulier waarin zij hun motivatie voor het vak kenbaar kunnen maken.

Toelichting Canvas

Street Law is toegankelijk voor maximaal 25 studenten. Wanneer er teveel aanmeldingen zijn, zal er worden geselecteerd op grond van motivatie.

Study and Career for CS

Vakcode	X_400633
Studiepunten	0
Periode	P5
Vakniveau	200
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	S.N. Suman MA
Examinator	S.N. Suman MA
Betrokken Docenten	S.N. Suman MA
Onderwijsvormen	Hoorcollege

Doel vak

Course Objectives: - To guide self-assessment of strengths and ambitions - To improve insight into the professional field and practices. - To support your exploration of opportunities for further education and labor market trends in your chosen field - To develop your skills in presenting yourself effectively Student Learning Outcomes Upon successful completion of this course students will be able to: - Assess their own values, interests, skills, and personality and be able to make relevant connections to the world of work and career fields. - Develop and apply sound decision-making skills in choosing career options. - Broaden their knowledge of the world of work - Write a tailored and focused CV and motivation letter to effectively market oneself. - Interview in a professional and authentic style. - Document and showcase the unique contribution they can make to an organization.

Inhoud vak

The world of work today is complex and dynamic. Preparing yourself for a career and entering the labor market as a future Computer Science graduate is a daunting yet exciting journey of self-awareness and fulfillment. This course and the accompanying Canvas modules will help you develop a flexible and adaptive career plan that you can use throughout your professional life. It will provide you with the tools you need to understand and assess your field of study in relation to professional practice. The course covers three main areas of Career Development: 1. Knowing yourself & Exploration 2. Personal Branding 3. Career Management tools Note that Study and Career is a 0-ECTS course that will be graded with a pass/fail grade and is a mandatory graduation requirement.

Aanvullende informatie onderwijsvormen

Course content is delivered in a variety of ways and includes online Canvas modules for preparation, interactive lectures, class discussions, assignments, career assessment interpretations, guest speakers (when possible), and experiential & (small) group learning. The course consists of 6 sessions of 1.45 hrs and are scheduled in groups of maximum 25 students per session. Attendance is mandatory.

Toetsvorm

Requirements to successfully complete the course: - Career Portfolio, to be submitted on Canvas at the end of the period - Preparation for class sessions - Class Attendance at least 80%, professional communication in case of absences Career Portfolio: The purpose of creating a Career Portfolio is to enhance your career development. A Career Portfolio can help you improve your career by raising your awareness of your assets and areas for growth. By seeing your materials organized together, you can learn how employers will view you and identify skill areas you want to develop. Your Career Portfolio will help you make decisions and take appropriate steps to build your career. Your Career Portfolio is your branded packet of information that documents and showcases the unique contribution that you can add to an organization. This starter portfolio can be expanded as you gain more experience through student organizations, work, internship, and service experiences. Career Portfolio Requirements are posted in the Career Portfolio Assignment on Canvas. The Career Portfolio must be submitted in PDF format. Note: All documents included in the portfolio should be free of (spelling)errors! Preparation for class sessions: Preparation is necessary to be able to participate in the class sessions and consists of working through the Weekly modules on Canvas. These include readings, and assignments you will be asked to complete. Some assignments will need to be submitted on Canvas, some are peer reviewed. Attendance: mandatory attendance. When unable to attend class sessions, communication with the instructor is required.

Literatuur

All required readings are posted on Canvas. Recommended reading: Covey, S. R. (1989) The 7 Habits of Highly Effective People. New York, USA: Free Press. Fabricant, Miller, Stark. (2014) Creating Career Success: A Flexible Plan for the World of Work, 1st Edition, Cengage. Hyatt, M. (2018) Your Best Year Ever: A 5-step Plan for Achieving Your Most Important Goals. Grand Rapids, USA: Baker Books. Krumboltz, J., Levin A. (2004) Luck Is No Accident: Making the Most of Happenstance In Your Life and Career. Atascadero, USA: Impact Publishers.

Aanvullende informatie doelgroep

BSc Computer Science (year 2)

Toelichting Canvas

On Canvas, weekly modules are published in which readings and wiki pages explain the topics and concepts of the week. The modules and weekly assignments are to be done in preparation for the class session of that week.

Sustainability and Environmental Change

Vakcode	AB_1230
Studiepunten	6
Periode	P1
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. Z. Malek
Examinator	dr. Z. Malek
Betrokken Docenten	dr. ir. A.F. van Loon, M.C. de Ruiter MSc, prof. dr. G.R. van der Werf, dr. Z. Malek
Onderwijsvormen	Hoorcollege, Werkcollege

Doel vak

In this course students learn about the environment’s pivotal role in achieving sustainable solutions for human development, mainly focused on global environmental problems. After this course, students: 1. can explain key concepts from the natural sciences relevant for sustainability studies; 2. can characterize key components of the environment, namely water, land and atmosphere, and can explain key processes affecting their characteristics; 3. can explain the role of the environment in socio-environmental systems; 4. can identify methods to quantify the state of the environment, and analyze environmental change; 5. can perform SWOT derived from the environmental conditions for specific sustainability challenges.

Inhoud vak

The environment plays a crucial role in supporting societies, for example by providing materials, energy, food, clean air, and clean water. Environmental conditions change over space and time, influenced by both natural and human factors. In this course students learn about the environment’s pivotal role in achieving sustainable solutions for human development. Starting from the key environmental components water, land and atmosphere, we characterize environmental change and how that leads to other environmental and societal changes. Methods to assess environmental change are addressed and students identify for their specific case studies what strengths, opportunities, weaknesses, and threats are associated to the ‘planet dimension’. The course comprises interactive

lectures and exercises and is evaluated through an assignment and a written exam.

Aanvullende informatie onderwijsvormen

The course is organized in thematic weeks, which provide students with an understanding of the specifics of the dimensions water, land and atmosphere, how these can be studied and how they interact. Each week has 1 to 2 lectures, in parallel to which students develop their assignment. Lectures and assignment are supported by in-class discussions, reading material, and exercises.

Toetsvorm

The course will be evaluated through 1) A poster assignment within which you describe and quantify the relevant environmental conditions and the rate of change for your specific sustainability challenge (30% of final grade) 2) A closed-book written exam (70% of final grade). Note: - An overall minimum grade of 5.5 is required to pass the course. - A minimum grade of 5.0 for the exam is required to pass the course. - There is one resit opportunity for the exam (typically in April). - Assignments with a grade lower than 5.5 can be improved once, after which the maximum grade that can be obtained for the assignment is 6.0.

Literatuur

The course builds on a series of selected articles, relative to the lecture content. Required and recommended readings are listed at the learning environment. Moreover we make use of: - Open data sources, educational software packages, websites, videos etc

Aanvullende informatie doelgroep

The course is primarly aimed at students following the minor Sustainability: Global Challenges, Interdisciplinary Solutions, but is open to all 3rd year BSc students.

Overige informatie

The course is coordinated by Dr. Ziga Malek Core lecturers: - Dr. Ziga Malek - Dr. Anne van Loon - Prof. Guido van der Werf

Sustainable Supply Chain Management

Vakcode	E_IBA3_SSCM
Studiepunten	6
Periode	P2
Vakniveau	300
Onderwijstaal	Engels
Faculteit	School of Business and Economics
Vakcoördinator	dr. ir. D.A.M. Inghels
Examinator	dr. ir. D.A.M. Inghels
Betrokken Docenten	dr. ir. D.A.M. Inghels, prof. dr. P.J.H. van Beukering, dr. M. Leitner
Onderwijsvormen	Werkcollege, Hoorcollege

Doel vak

ACADEMIC AND RESEARCH SKILLS – STUDENTS CAN CONDUCT A BASIC INTERNATIONAL RESEARCH PROJECT FROM START TO FINISH ACADEMIC SKILLS After successfully completing this course, the student • can analyze and demonstrate an understanding of supply chain problems taking into account interests of different stakeholders (economic, ecological, societal and others) and evaluate (future) performance effects of supply chain policy options. BRIDGING THEORY AND PRACTICE KNOWLEDGE: Demonstrates theoretical and empirical knowledge concerning the relevant areas in international business administration After successfully completing this course, the student: • can explain the transition from a linear to a closed loop (circular) economy and its implications for Supply Chain Management APPLICATION: Can propose a solution to an international real-life business problem by applying relevant theories and methodologies. After successfully completing this course, the student: • can apply a sustainable supply chain analysis framework to assess contemporary topics in sustainable supply chain management and to analyze supply chain management and similar cases. • can formulate recommendations for improvement of supply chains and business processes from a sustainable perspective QUANTITATIVE SKILLS • Can quantify the economic, ecological and societal objectives for supply chain management cases by applying and master commonly used techniques to tackle real life sustainable supply chain management problems.

Inhoud vak

This course aims to introduce students in operationalizing sustainability in supply chains and business processes. We define sustainability as the combined economic, environmental, and social optimum of supply chain and business processes alternatives that take into account constraints, such as technological limits or legislation, also known as the triple bottom line (TBL) approach of People-Planet-Profit optimization. Life Cycle Assessment (LCA) is presented as a methodology to quantify the environmental impact of products and processes and Analytic Hierarchy Process (AHP) to quantity social impact. Multi Criteria Decision Analysis is introduced as a concept to operationalize the TBL approach for practical sustainable supply chain problems. Next we discuss systems thinking using Systems Dynamics for understanding and evaluating the complex and interactive behavior of systems, such as sustainable supply chains, business processes and systems in general. Finally the sustainability evaluation of supply chains and the management of reverse supply chains will be addressed.

Aanvullende informatie onderwijsvormen

Lectures and computer tutorials

Toetsvorm

Written exam – Individual assessment (Interim) Assignment(s) – Group assessment

Literatuur

Readings will be announced via Canvas.

Aanvullende informatie doelgroep

This course is open for all students that are interested in how to quantify sustainability performance and long term sustainability behavior of processes such as supply chains.

Overige informatie

During the course students will build models using software tools (MS Excel and Vensim). How to use this software tools will be explained during the lectures and tutorials, but students should know that they will have to use these tools to complete the written assignments. The software will be available on public PC's of the VU but can also be installed on the individual laptops.

Aanbevolen voorkennis

It is recommended that students are familiar with key concepts and techniques from business or operations management and (business) mathematics.

Talent and Talent Identification

Vakcode	B_TALIDENT
Studiepunten	6
Periode	P3
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Fac. der Gedrags- en Bewegingswetensch.
Vakcoördinator	dr. D.L. Mann
Examinator	dr. D.L. Mann
Betrokken Docenten	dr. D.L. Mann
Onderwijsvormen	Werkcollege, Hoorcollege

Doel vak

By the end of this course, the aim is that you will be able to design a basic evidence-based system of talent identification and development for an applied organisation (e.g., in sport, music, or another area of expertise). We will achieve this aim by learning to: 1. Evaluate the relative contributions of ‘nature’ and ‘nurture’ in the development of talent; 2. Understand how talent develops and apply that knowledge to identify the stage of development at which talented athletes should be identified; 3. Identify the impact that environmental factors such as an individual’s date or place of birth can have in influencing the development of talent; 4. Critically evaluate the limitations of existing measures of talent and suggest newer measures that overcome those limitations; 5. Evaluate whether talent identification systems used by applied sporting organisations (both in the Netherlands and overseas) adhere to best scientific practice.

Inhoud vak

Inhoud vak

The ability to identify and develop talent in potentially skilled athletes is a central role for many coaches, scientists, and sporting administrators. National and professional sporting organisations invest substantial amounts of time and money in establishing systems designed to identify and nurture future talent, yet there is still considerable doubt about which approach is most likely to be successful, and how effective these systems may be. This course on Talent and Talent Identification will assess what it takes to become talented in sport and other areas of expertise (e.g., music, dance), and will uncover what we know about the ideal conditions for developing skill. The course will address the new and developing area of research that seeks to evaluate existing talent identification systems and to develop newer, more evidence-based procedures for identifying and developing talent. Further, guest lecturers from professional sporting organisations will reveal the systems that they have in place to identify and nurture talent.

Aanvullende informatie onderwijsvormen

The course consists of 12 lectures (mandatory attendance, 18 hours in total), in addition to the expectations of self-study (approximately 114 hours), an assignment (approximately 10 hours total) and a final exam (3 hour duration)

Toetsvorm

Assessment comprises an assignment and a final exam.

Literatuur

Textbook: Baker J., Cobley S., Schorer, J. (2012) Talent identification and development in sport. International perspectives. Routledge: Abingdon, Oxon

Aanvullende informatie doelgroep

The course is taught in the Department of Human Movement Sciences but is open to students of all backgrounds with an interest in talent identification in sport and other areas of expertise.

The Developing Brain

Vakcode	AB_1059
Studiepunten	6
Periode	P2
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. M.C. van den Oever
Examinator	dr. M.C. van den Oever
Betrokken Docenten	prof. dr. S. Spijker, prof. dr. R.E. van Kesteren, dr. R.M. Meredith, dr. H.K.E. Vervaeke, B.M.W. Borgman, dr. M.C. van den Oever
Onderwijsvormen	Practicum, Werkgroep, Hoorcollege, Computerpracticum

Doel vak

Students will learn about neurobiological mechanisms that underlie normal and aberrant brain development, and that shape the life of individuals over time.

Inhoud vak

The focus of this course is on phases of brain development that shape the life of individuals over time. The brain performs differently at various ages; the young brain being very plastic, whereas the aging brain is gradually losing its adaptive capacity. Importantly, early and late brain development are affected by specific genetic factors and vulnerable to changes induced by environmental stimuli. These alterations can result in neurodevelopmental and neurodegenerative disorders. The course consists of three modules (one week per module), each covering a chronological phase of brain development. In module 1, we will focus on early (prenatal and postnatal) brain development and its relation to brain disorders such as autism. We will also discuss the crucial role of stem cells in brain development and stem cell research. In the second module, we will focus on postnatal brain development during childhood and adolescence and discuss issues related to this phase of development, such as gender identity, schizophrenia and the effects of drugs of abuse (alcohol, nicotine). In the last module, we will discuss cognitive decline associated with normal brain aging as well as specific diseases of aging, such as Alzheimer’s and Parkinson's disease. Notably, each module contains a keynote lecture related to the topic of the module. Keynote

lectures are given by renowned experts in their fields and are mandatory for all students. In addition, students will perform a Science in the Media assignment. Scientific findings are not always accurately covered in main stream media due to various reasons. The goal of this assignment is that students learn to critically read and evaluate a media coverage of a scientific study, and to present their evaluation of the flaws of a media article in small groups.

Aanvullende informatie onderwijsvormen

Lectures: 30 h Workgroups: 4 h Q&A sessions: 1.5 h Self study: ~60 - 120 h (in between lectures, students are expected to spend time on reading of literature to prepare for next lectures/workgroups and to make assignments on canvas)

Toetsvorm

Exam (E; multiple choice questions and open questions): 80% Academic skills assignment (A): 20% The grade of both tests has to be >5.5 to pass the course. Students have the option to resit the exam (E).

Literatuur

Slides of all lectures. Recommended reading material: will become available on Canvas. A basic understanding of neurons, neurophysiology and molecular biology (DNA, RNA, proteins) is required. For this, we highly recommend to follow the courses 'Cognitive Neuroscience' and 'Nature versus Nurture' of this minor.

Aanvullende informatie doelgroep

Students of the minor Brain & Mind. Third year bachelor students who are interested in the neurobiological mechanisms of the developing brain.

Overige informatie

This minor course requires a minimum of 25 participants.

Toelichting Canvas

Slides of the lectures and recommended reading material will become available on Canvas in three modules. Each module ends with quiz questions about the lectures of that module. Quizes have to completed by the student to be able to access the next module. Keynote lectures will end with an open question that has to be answered on Canvas. Therefore, the student has to make sure that he/she has access to Canvas during the keynote lectures. Students have to upload their Science in the Media assignment to Canvas.

Aanbevolen voorkennis

This course is part of the minor Brain and Mind. A basic understanding of neurons, neurophysiology and molecular biology (DNA and proteins) is required. For this, we recommend to follow the courses 'Cognitive Neuroscience' and 'Nature versus Nurture' of this minor.

The Economics of Crises

Vakcode	E_ME_TEC
Studiepunten	6
Periode	P2
Vakniveau	300
Onderwijstaal	Engels
Faculteit	School of Business and Economics
Vakcoördinator	dr. M. Mastrogiacomo
Examinator	dr. M. Mastrogiacomo
Betrokken Docenten	dr. M. Mastrogiacomo, dr. F.G. Caloia
Onderwijsvormen	Werkgroep, Hoorcollege

Doel vak

The objective of the course is to introduce students to the difference between different types of crises, such as the present one (caused by an exogenous event, a pandemic) and the 2008-2012 (that was caused by a financial bubble). To do so, we review theory and practice of macroeconomic, fiscal and monetary policy, including regulation of the financial system. Specific learning outcomes upon completion of this course are: • Ability to set the present pandemic in a broader contest (damage to health and the economy), evaluating policies to restore public

health and economic activities; • Ability to apply macroeconomic concepts and theories to analyse problems of employment and inflation and measurement of Business Cycles; • Capability to analyse the role of macroeconomic policymakers in managing money, banking and the business cycles; • An understanding of the policy problems facing central banks, with a focus on monetary policy; • An understanding of the policy problems facing governments, with a focus on fiscal policy; • Understand the origin economic crises, mostly if exogenous (corona crisis) or debt driven (financial crisis), and the effects of fiscal and monetary policy.

Inhoud vak

The course discusses Macroeconomic policies intended to affect and dampen the business cycles linked to a crisis. We discuss the roles of different authorities in conducting macroeconomic policies aimed at preventing a crisis or at restoring the economic activity after a crisis hits. Relevant topics are for instance: money creation, control of the interest rates, central banking and the stabilizing role of fiscal policy with a specific focus on health care expenditures. We investigate the origin and approach to the corona crisis and the previous (financial) crisis looking at these issues from different perspectives. So, for the present crisis, we debate mostly the policy response of national governments, the ECB and the EU. For the previous crisis we discuss the common narrative (the banks were guilty) but also the micro view on the role of indebtedness (we did it!). Which explanations will convince you the most?

Aanvullende informatie onderwijsvormen

This course consists of a series of lectures and tutorials in small groups. Assuming that by the time this course starts didactics will be allowed on campus, the lectures (each week 2 lectures of 2 hours each) aim at informing students about the content of the course. The traditional set up is interrupted by short discussions using different multimedia devices. The tutorials (small size, each week 1 lecture of 2 hours each) aim at stimulating active participation of the students, in group but also individually. These are typically arranged in the form of debates, round table discussions or the simulation of an academic conference. Participation in the tutorial is compulsory. Students prepare individual assignments these are (partly) handed in before the tutorial (deadlines change depending on the tutorial, check on Canvas). Group discussions on reading material, presentations in which insights are applied, reflect on and explain own decisions based on theoretical frameworks are partly evaluated during tutorials. Solution of problem sets, and discussion of economic data are part of the tutorials too.

Toetsvorm

Exams will take place around mid-December and a re-sit opportunity is offered in the second half of March. For details, please check information disseminated on VUNet or posted on the website rooster.vu.nl. Exams last approximately 2 hours. Course grade is determined as follows: exam grade needs to be 5.0 or higher – in that case: 30% from hand-in assignments, 70% from written exam; else: exam grade. To those who participate into less than 4 (compulsory) tutorials and/or do not deliver their tutorial work, one point will be subtracted from the tutorial grade.

Literatuur

Textbook: • Acemoglu, Daron, David Laibson and John A. List, 2016, Economics. Harlow, Essex: Pearson Education Ltd. ISBN13: 978-1-292-07920-2 This book should be familiar from earlier Minor Economics courses on Fundamentals of Microeconomics and Development of Macroeconomic Thought. Cited reading (examples / not compulsory) • Christina D. Romer (undated): Business Cycles. Concise Encyclopedia of Economics. Available at http://www.econlib.org/library/Enc/BusinessCycles.html • Hilary Hoynes, Douglas L. Miller, and Jessamyn Schaller (2012): "Who Suffers During Recessions?," Journal of Economic Perspectives, 26(3), 27-48. (to read: pages 27-35, available through VU library). • James Stock & Mark Watson (1999): Business Cycle Fluctuations in US Macroeconomic Time Series, Ch. 1 in Handbook of Macroeconomics. Amsterdam: Elsevier/North Holland. To read: sections 1-3. (attached) • Timothy Taylor (2012): http://conversableeconomist.blogspot.nl/2012/09/the-potential-gdp-perspe • Allen, Franklin and Douglas Gale, 2000, Journal of Political Economy, Vol. 108, No.1, pp.1-11 • Amel, D., Barnes, C., Panet ta, F. and Salleo, C. (2004), "Consolidation and efficiency in the financial sector: A review of the International evidence" , Journal of Banking and Finance, 28, pp. 2493-2519. • Anderson, R.W. and Joeveer, K. (2011), "What are the economies of scale in wholesale banking?" , working paper. • Baxter, T.C. and Somner, J.H. (2005), "Breaking up is hard to do: An essay on cross-border challenges in resolving financial groups" , in Evanoff, D. and Kaufman, G.G. (eds), Systemic Financial Crises: Resolving Large Bank Insolvencies , Singapore: World Scientific • Boot A.W.A. (2000), Relationship Banking: What Do We Know?, Journal of Financial Intermediation 9, 7–25 • Brewer, E. and Jagtiani, J. (2009), "How much did banks pay to become Too-Big-To-Fail and to become systemically Important?" , Federal Reserve Bank of Philadelphia, working paper • Cole, R., Goldberg, L., and White, L. (2004), "Cookie cutter vs. character: The micro structure of small business lending by large and small banks" , Journal of Financial and Quantitative Analysis, 39, 2, pp. 227- 251 • Flannery, M.J., Kwan, S.H. and Nimalendran, M. (2010), "The 2007-09 financial crisis and bank opaqueness" , Federal Reserve Bank San Francisco Working paper. • Greenspan, Michael A. "Sect ion 20 of the Glass-Steagall Act ," The Review of Banking & Financial Services, Vol. 9, No. 18 (October 27, 1993), pp. 179-84 • Haldane, A., Brennan, S. and Madouros, V. (2010), "The contribution of the financial sector: Miracle or mirage?" , taken from The Future of Finance: The LSE Report , July • Kiff, J., Jennifer Elliot t , Elias Kazarian, Jodi Scarlata, and Carolyne Spackman Credit Derivatives:

Systemic Risks and Policy Opt ions? IMF Working Paper November 2009 • McAllister, P.H. and McManus, D. (1993), "Resolving the scale efficiency puzzle in banking" , Journal of Banking and Finance, 17, pp. 389-406. • Randall S. Kroszner and Raghuram G. Rajan, 1994, " Is the Glass-Steagall Act Justified? A Study of the U.S. Experience with Universal Banking Before 1933" The American Economic Review, Vol. 84, No. 4 (Sep., 1994), pp. 810-832 • Van Rijckeghem, C, and Beat rice Weder, 2003, Spillovers through banking centers: A panel data analysis, Journal of International Money and Finance, 483–509 • Von Thadden, E. L. (1995). Long-term contracts, short -term investment and monitoring, Rev. Econ. Stud. 62, 557–575. • Saunders, Anthony. "Banking and Commerce: An Overview of the Public Policy Issues," Journal of Banking and Finance, Vol. 18, No. 2 (January 1994), pp. 231-54 • Tabarrok, A. 1998. The Separation of Commercial and Investment Banking: Morgans Vs Rockefellers. The Quarterly Journal of Austrian Economics 1 (1):1-18 • Wagner, W. (2010), "Diversification at financial institutions and systemic crises" , Journal of Financial Intermediation, 19, 3, pp. 373-386. • White E. (1986) "Before the Glass-Steagall Act : An Analysis of the Investment Banking Activities of National Banks." Explorations in Economic History, January 1986, 23(1), pp. 33-55.

The Law and Politics of Fencing the Use of Force

Vakcode	S_LPFUF
Studiepunten	6
Periode	P2
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Sociale Wetenschappen
Vakcoördinator	prof. dr. W.M. Wagner
Examinator	prof. dr. W.M. Wagner
Betrokken Docenten	prof. dr. W.M. Wagner, dr. A. Bitumi, G.M. Gordon
Onderwijsvormen	Hoorcollege, Werkcollege

Doel vak

When finalizing the course, students will have knowledge and understanding of - The prospects and problems of international law as an instrument of mitigating and overcoming inter-state war; - The historical context in which certain approaches concerning fencing the use of force developed - The prospects and problems of systems of collective security; - The prospects and problems of combining international law and political science in studying international security.

Inhoud vak

The aim of this course is to introduce students to the changing international rules and regulations on the use of armed force from the perspectives of international law, history and political science/international relations. Over the course of human history, the nature of war and armed conflict has been changing frequently and dramatically. In addition to technology, these developments have been driven by changing ideas about just causes and legitimate ways of using armed force. Limiting the human costs of war has become an ever more powerful motive in designing and modifying the rules governing the use of force. The prime instrument of fencing the use of armed force has been international law. The course discusses the most important developments in the laws of armed conflict since the late Middle Ages, including just war theory, collective security and humanitarian interventions from an interdisciplinary perspective that builds on Public International Law and Political Science/International Relations. This interdisciplinary perspective allows a comprehensive understanding of the achievements and shortcomings in the laws and politics of fencing the use of force. Milestones under discussing include early modern concepts of just war, the balance of power system of the 19th century, the League of Nations, the United Nations system and recent efforts to promote a Responsibility to Protect.

Aanvullende informatie onderwijsvormen

interactive lectures

Toetsvorm

written assignment

Literatuur

Hathaway, Oona/Shapiro, Scott 2017: The Internationalists. How a Radical Plan to Outlaw War Remade the World. New York: Simon and Schuster. Additional articles

Aanvullende informatie doelgroep

3rd year bachelor students in the minor Peace and Conflict Studies and exchange students. The course is also open as an elective course.

The Personal is Political: Biography, Gender and Diversity

Vakcode	L_AABAALG068
Studiepunten	6
Periode	P2
Vakniveau	200
Onderwijstaal	Engels
Faculteit	Faculteit der Geesteswetenschappen
Vakcoördinator	dr. D.G. Hondius
Examinator	dr. D.G. Hondius
Betrokken Docenten	dr. B. Boter, dr. J.C.A.P. Ribberink, dr. D.G. Hondius
Onderwijsvormen	Werkcollege

Doel vak

1. Acquiring knowledge of and insight in the field of historical gender and diversity studies; 2. Acquiring knowledge of and insight in historical research perspectives; 3. Develop academic research skills; 4. Develop writing skills; 5. Develop presentation skills.

Inhoud vak

"The personal is political", was a well-known rallying slogan in the late 1970s women's movement. Modern historical research acknowledges the impact and influence of the many dimensions that shape individual lives, including gender, sexuality and sexual preference, ethnicity, race, age, religion and class. This seminar explores how these intersecting dimensions are present and influence the lives and biographies of politically engaged personalities, famous or unknown, by studying the genre of the political biography, autobiography and life writing. The seminar sets out with a short series of lectures by experts in the field, followed by writing and research assignments. Students will work at an individual paper, based in a biographical research project of their own choice; suggestions will be available. The course ends with student's presentations of their findings.

Aanvullende informatie onderwijsvormen

Seminar (twice weekly), with assignments and several guest lectures . Meetings are scheduled on Wednesday morning and Friday morning, 10.00-12.45.

Toetsvorm

- Active participation in class including following up the assignments (10%) - Individual presentation of the outline of the individual research paper and how it links to the common reading in class (15%) - Final discussion in semi-public seminar (15%) - Final paper (4000 words) (60%) Each element has to be satisfactory in order to pass the course.

Vereiste voorkennis

Academic skills course (ACVA) passed.

Literatuur

Literature will be made available for students in the first week of the course.

Aanvullende informatie doelgroep

BA2 students History, History and International Studies, Humanities, Social Sciences, Philosophy, and Medical Studies.

Overige informatie

This course is part of the Minor Gender and Diversity.

Theorizing Gender and Intersectionality

Vakcode	W_TGI
Studiepunten	6
Periode	P1+2+3
Vakniveau	200
Onderwijstaal	Engels
Faculteit	Faculteit der Geesteswetenschappen
Vakcoördinator	dr. J.M. Halsema
Examinator	dr. J.M. Halsema
Betrokken Docenten	dr. J.M. Halsema
Onderwijsvormen	Hoorcollege

Doel vak

1. Knowledge of the main theories of in gender studies and intersectionality theory; 2. Insight in the way in which these theories are used in the student's own discipline; 3. Practising the skills to critically question texts from the perspective of gender, race, and sexuality; 4. Practising the skills to define and defend an argument and communicate the research conclusions verbally and in writing to an educated audience of different disciplines in a clear and unambiguous manner 5. Practising the skills to perceive a problem from different disciplinary fields; 6. Practising your presentation and writing skills.

Inhoud vak

This course introduces into the critical perspectives developed in the context of gender studies and intersectionality theory. The aim is to develop an intersectional and multidisciplinary perspective: in the course we will focus upon the interrelations and divergences between gender, race and sexuality and discuss these from the perspective of the disciplines of the students. The key themes and debates that form the backbone of this minor will be introduced in the lectures: the sex/gender debate, social constructivism, sexual difference, performativity, the intersection of race and gender, and of gender and sexuality, the notion 'intersectionality'. The course does not only aim at introducing these debates theoretically, but at stimulating reflection upon their disciplines by the students. In weekly assignments the students will relate the problems introduced to their own discipline.

Aanvullende informatie onderwijsvormen

The course will take place in September and October 2019 (period 1), by means of lectures and discussion about texts, three hours, twice a week. The final course assessment will take place in period 3: students organize a final Gender and Diversity student symposium, and present a poster or paper in which they demonstrate to be able to analyze a subject/text/film/book in their own discipline from the angle of gender and intersectionality.

Toetsvorm

- A short paper of 1000 words (20%). - Presentation in class (10%). - Poster or paper presentation at the final symposium (10 %). - Final paper of 3000 words (60%).

Literatuur

- In the course we will make use of a book that introduces the main theories and developments in gender and intersectionality theory. Most probably: R. Alsop, A. Fitzsimons, K. Lennon, "Theorizing Gender." Cambridge & Malden: Polity Press, 2002 or later edition (2003, 2005, 2006, 2012). - Texts will be read of: Kimberle Crenshaw, Judith Butler, Luce Irigaray, and others. These texts will be made available through Canvas.

Aanvullende informatie doelgroep

The course is part of the university minor Gender and Diversity.

Aanbevolen voorkennis

Required is a bachelor 2 level.

Toegepaste Inspanningsfysiologie

Vakcode	B_TIF
Studiepunten	6
Periode	P2
Vakniveau	300

Onderwijstaal	Nederlands
Faculteit	Fac. der Gedrags- en Bewegingswetensch.
Vakcoördinator	dr. J.J. de Koning
Examinator	dr. J.J. de Koning
Betrokken Docenten	prof. dr. H.A.M. Daanen, dr. J.J. de Koning, dr. R.C.I. Wust
Onderwijsvormen	Practicum, Hoorcollege

Doel vak

Het uitbreiden van inspanningsfysiologische kennis en het toepassen daarvan op vraagstukken binnen de sport en gezondheid.

Inhoud vak

De verhoogde energiebehoefte van het musculaire systeem als gevolg van fysieke activiteit vraagt van verschillende fysiologische mechanismen een zodanige actie dat homeostase van het interne milieu behouden blijft. Het cardiovasculaire en respiratoire systeem spelen hierin een cruciale rol. De mogelijkheid van deze systemen om in te spelen op de belasting bepaalt in hoge mate de inspanningstolerantie en/of gezondheid van het individu. Er zijn vele factoren die het functioneren van het cardiovasculaire en respiratoire systeem beïnvloeden. Te denken valt aan trainingstoestand, voeding, klimaat, hypo- en hyperbare omstandigheden en sportspecifieke omstandigheden. Daarnaast hebben chronische aandoeningen aan de verschillende systemen grote invloed op de inspanningstolerantie. Ten grondslag aan het functioneren van het musculaire-, cardiovasculaire- en respiratoire systeem liggen de moleculair biologische processen die aanmaak en afbraak van eiwitten reguleren. Inzicht in deze processen maakt duidelijk hoe training en adaptatie aan veranderende omstandigheden werkt. Ook klimatologische omstandigheden hebben invloed op het functioneren van de mens. In deze cursus wordt aandacht besteed aan factoren die de inspanningstolerantie bepalen, de moleculair biologische processen die trainingseffecten reguleren en de thermofysiologie. De aandacht zal liggen op hoe deze kennis toegepast kan worden binnen sport en gezondheid. De cursus bevat practica waarin de student vertrouwd wordt gemaakt met de interpretatie van integratieve cardio-pulmonaire inspanningstesten, de thermofysiologie en moleculaire technieken.

Aanvullende informatie onderwijsvormen

De stof wordt aangeboden in de vorm van hoorcolleges in combinatie met practica. Totaal 168 uur, waarvan 42 uur hoorcollege, 12 uur practicum, 111 uur zelfstudie en 3 uur tentamen.

Toetsvorm

tentamen Schriftelijke tentamen met open vragen. De practica zijn verplicht.

Vereiste voorkennis

- 900115: Inleiding inspanningsfysiologie (deze kennis wordt bekend verondersteld.) - 900225: Training en prestatie (voorheen Trainingsfysiologie, code 900210 deze kennis wordt bekend verondersteld)

Literatuur

McArdle, Katch and Katch. Exercise Physiology: Nutrition, energy and human performance. Williams & Wilkins, ISBN 1-6083-1859-1, 7th or 8th edition, 2010/2014. Molecular Exercise Physiology: an introduction. Edited by Henning Wakerhage. Routledge, 2014, ISBN 978-0-415-60788-9. Materiaal aangeboden via Canvas.

Afwijkende intekenprocedure

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

Aanbevolen voorkennis

De student moet beschikken over basiskennis van de inspanningsfysiologie (energiesystemen, cardio-pulmonair systeem, training).

Transatlantic Connections

Vakcode	L_GABAALG016
Studiepunten	6
Periode	P2
Vakniveau	300

Onderwijstaal	Engels

Faculteit	Faculteit der Geesteswetenschappen
Vakcoördinator	prof. dr. P. Brandon
Examinator	prof. dr. P. Brandon
Betrokken Docenten	prof. dr. P. Brandon
Onderwijsvormen	Hoorcollege, Werkcollege

Doel vak

• Students will develop their knowledge about the circulations of goods, people and ideas that were essential to the formation of an Atlantic space that encompasses the Americas, Africa and Europe. • Students will learn about current ‘big debates’ within the field of Atlantic history and learn to take an independent position of their own, adopting a critical stance towards historiography. • Students will establish links between our present-day world and certain specific transatlantic connections that were developed since the sixteenth century. • Students will further develop academic writing skills and self-assessment.

Inhoud vak

In this course, we will investigate some of the connections made across the Atlantic Ocean throughout history. The branch of history that has dedicated itself to analyzing the development of the Atlantic space has come into being only in the second half of the twentieth century, but the Atlantic space in itself can be said to have developed since the first encounters between Europeans and Amerindians after Columbus’ first voyage to the New World. The further development of the Atlantic is fundamentally based on the interaction between a variety of goods, ideas and people, an interaction that at times was peaceful, but that perhaps more often took place on the basis of violence, forced migration and slave labor. Seven themes about these human interactions will be analyzed and discussed over the course of a semester. These themes cover cultural (music & language/literature), economic (plantation slavery, trade, finance), socio-political (spread of political ideas & role of human migration) and environmental (Columbian exchange) issues. Together, these themes provide a representative body to comprehend the nature and importance of the web of transatlantic connections spun over the centuries. Some of these developed themselves as a result of the establishment of an Atlantic sphere, while others contributed fundamentally to an Atlantic space.

Aanvullende informatie onderwijsvormen

This course will consist of two two-hour seminars per week. Students can miss no more than two of those seminars, with a valid reason.

Toetsvorm

Assignments & presentation (40%), final exam (60%).

Literatuur

Selected literature will be posted on Canvas.

Aanvullende informatie doelgroep

Students Geschiedenis and History and International Studies; students enrolled in the minor American Studies or History; the course is also open to exchange students.

Overige informatie

This course is also part of the minor programmes 'American Studies' and 'History'.

Twin Research in Psychology (UM)

Vakcode	P_UTWRES
Studiepunten	6
Periode	P2
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Fac. der Gedrags- en Bewegingswetensch.
Vakcoördinator	dr. E. van Bergen

Examinator	dr. E. van Bergen
Betrokken Docenten	prof. dr. M. Bartels, prof. dr. A.H.M. Willemsen, dr. E. van Bergen
Onderwijsvormen	Hoorcollege

Doel vak

To gain knowledge on the latest research and state of affairs within the field of behavioural genetics applied to psychology.

Inhoud vak

Behaviour genetics is the field that uses genetic methods to investigate why certain traits run within families. Family members may be alike in personality, behaviour, cognition, psychological health and lifestyle because they share their home environment but also because they are genetically related to each other. This course will focus on the influence of genes and the environment, and their interplay, on individual differences between people. Various research methods applied in behaviour genetics will be discussed, including animal studies, twin and family studies and genome-wide association studies.

Aanvullende informatie onderwijsvormen

The course consists of 13 lectures (2 hours each), 1 hour question time, weekly online assignments and self-study.

Toetsvorm

The multiple choice exam will consist of questions covering the literature and lectures. To complete the course you must pass the exam, hand in the blog, review 2 blogs written by other students and have completed and submitted via CANVAS at least 80% of the other assignments.

Literatuur

Behavioral Genetics (7th Edition). Editors Knopik, Neiderhiser, DeFries, and Plomin. New York, NY: Worth publishers (ISBN: 978-1464176050).

Urban Studies

Vakcode	S_UBS
Studiepunten	6
Periode	P2+3
Vakniveau	300
Onderwijstaal	Engels
Faculteit	Faculteit der Sociale Wetenschappen
Vakcoördinator	dr. Y. Saramifar
Examinator	dr. Y. Saramifar
Betrokken Docenten	dr. Y. Saramifar, I. Schuitemaker, S.I. Tahitu, dr. A. Smienk, W.B. de Jong MSc
Onderwijsvormen	Hoorcollege, Werkgroep

Doel vak

Knowledge and understanding. The student has aquired knowledge and understanding of: (1) key concepts in urban anthropology; (2) the ways in which urban development and sustainable development are intertwined. Application. The student has acquired the competences to: (3) apply key concepts from urban anthropology to an ethnographic research in public spaces in Amsterdam and Utrecht; (4) combine and compare key concepts in urban anthropology in a written argument. Communication. The student is able to: (5) report about the research projects in verbal and written form. Learning skills. The student has acquired the skills to: (6) work in small research teams to carry out a small ethnographic research project;

Inhoud vak

Cities around the world are centres of economic development, attracting domestic and foreign investors, visitors, and high-skilled and low-skilled migrants. Locked in a global competition for investments, cities need to be developed in a way that they are attractive to investors and become socially and ecologically sustainable. Social sustainability requires that different actors get their fair place in the city, in terms of income opportunities, and a space to dwell, meet, express oneself, and work. Ecological sustainability requires that cities reduce their ecological footprint, compensate environmental damage to the planet, and reuse as many resources as possible. Taking

urban space as the focus of our attention in this course, we will go into politics, inequality, lifestyles, and liveability in cities.

Aanvullende informatie onderwijsvormen

Lectures and tutorials

Toetsvorm

A mixture of assignments (depending on the situation at the time of the course)

Literatuur

To be announced in the course manual (see CANVAS).

Aanvullende informatie doelgroep

2nd year students in Cultural Anthropology and Development Sociology; Students in the Minor Anthropology or the Minor Development and Global Challenges; Also open as an elective course for Exchange Students.

Overige informatie

This course fits into several programmes. It is part of the Bachelor Cultural Anthropology and Development Sociology; it is the closing of the theme block “Development”, but in time follows directly on two courses from the theme block “World Making” (in particular Identity, Diversity and Inclusion, and Nation and Migration). The themes of these courses –politics, inequality, development, globalization, diversity, identity, migration– all return in Urban Studies. In the same vein, Urban Studies is the closing of the minor Development and Global Challenges. For students of the minor Anthropology, the most memorable element will be their first experience with ethnographic fieldwork. While Urban Studies is integrated in all these programmes, the course can also be taken as an elective course of its own. It is the only course on Urban Studies offered in the Faculty of Social Sciences of Vrije Universiteit Amsterdam and it is especially interesting to exchange students who wish to get to know Amsterdam and some other Dutch cities better. Note that students are expected to attend three preparatory meetings in November-December (the so-called studielint).

Afwijkende intekenprocedure

For this course, it is not possible to register for the seminars yourself, the course coordinator sorts you into a seminar. Note: you have to register for the other course elements yourself!

Aanbevolen voorkennis

There are no requirements, but ideally students have completed the courses Political and Economic Anthropology, and Development and Globalization (for BSc CAO and minor Anthropology), or Development and Globalization and Identity, Diversity and Inclusion (Minor DGC).

Verhalen uit het Rijksmuseum

Vakcode	L_AABAALG085
Studiepunten	6
Periode	P2
Vakniveau	200
Onderwijstaal	Nederlands
Faculteit	Faculteit der Geesteswetenschappen
Vakcoördinator	prof. dr. J.H.C. Bel
Examinator	prof. dr. J.H.C. Bel
Betrokken Docenten	prof. dr. J.H.C. Bel
Onderwijsvormen	Excursie, Hoorcollege, Werkcollege

Doel vak

• Studenten leren het verhaal achter een tentoonstelling of een museum te onderzoeken • Studenten verbreden hun kennis van de museumwereld en de kunst- en cultuurgeschiedenis • Studenten leren zelf een storyline te ontwerpen en te schrijven aan de hand van een object of een tentoonstelling.

Inhoud vak

In dit college staat het Rijksmuseum in Amsterdam centraal. Je bezoekt het museum, spreekt met een aantal conservatoren en medewerkers en verdiept je in de geschiedenis en architectuur (Cuypers), de signatuur en de collectie van het museum. Het museum bevat afdelingen beeldende kunst, maar ook een historische en een Aziatische afdeling. Daarnaast is er in het college aandacht voor fenomenen als canonvorming en culturele identiteit en de vraag in hoeverre er momenteel in het museum aandacht wordt besteed aan de multiculturele samenleving. Ook komen vragen aan de orde als: in hoeverre speelt dit museum een rol in de vorming van de Nederlandse identiteit, wat verstaat men onder culturele identiteit, welke rol spelen de vaderlandse geschiedenis en de zeventiende-eeuwse schilderkunst in de collectievorming en hoe hangen de schilderijen uit de zeventiende eeuw samen met de literatuur uit die tijd. Hoewel je daar misschien niet meteen aan denkt, spelen ook hier narrativiteit en storytelling een rol: elke tentoonstelling vertelt een verhaal – de keuze van schilderijen en voorwerpen, de wijze waarop ze zijn geordend en de volgorde waarin de bezoekers erlangs worden geleid, aan de hand van de begeleidende teksten, zijn van invloed op het oordeel van de bezoeker en op de boodschap die hij of zij uit de tentoonstelling destilleert. Docenten uit verschillende (sub)disciplines kunnen bij deze cursus betrokken worden (kunstgeschiedenis en architectuur (Ingrid Vermeulen), geschiedenis (Dienke Hondius), rechten (roofkunst, Wouter Veraart).

Aanvullende informatie onderwijsvormen

werkcollege (2 uur per week)

Toetsvorm

• mondelinge presentatie (30%) • excursieverslag (10%) • afrondend werkstuk waarin de theorie wordt verwerkt en je een verhaal vertelt aan de hand van een object of de hele tentoonstelling (storyline) (60%) • Via peer review beoordelen de studenten elkaars werk. Voor alle onderdelen moet minimaal een 5,5 worden behaald.

Literatuur

De te lezen primaire en secundaire teksten worden voor aanvang van de cursus in Canvas bekendgemaakt.

Aanvullende informatie doelgroep

De minor staat open voor alle studenten, van binnen en van buiten de VU.

Overige informatie

Deze cursus is een verplicht onderdeel van de minor ‘De Schrijfacademie’. Daarnaast volgen de studenten ‘Klassiekers in context 1 en 2 (9 EC), ‘Multatuli multicultureel’ (6 EC), De schrijversparade’ (3 EC) en ‘Creatief schrijven’ (6 EC).

Web Technology

Vakcode	X_400488
Studiepunten	6
Periode	P3
Vakniveau	100
Onderwijstaal	Engels
Faculteit	Faculteit der Bètawetenschappen
Vakcoördinator	dr. J.R. van Ossenbruggen
Examinator	dr. J.R. van Ossenbruggen
Betrokken Docenten	dr. J.R. van Ossenbruggen, dr. D. Spagnuelo
Onderwijsvormen	Practicum, Hoorcollege

Doel vak

Everyone uses the Web, but how was it originally built, how has it evolved to what it is now, and how might it further develop in the future? The objectives of this course are to enable the student to formulate answers to these questions. While the course is primarily focused on technological aspects, as a professional in academia or industry, you need to be able to relate technological developments on the Web to relevant trends in science and society in general. At the end of the course, students will be able to: - Knowledge and understanding: Understand, on an introductory level, the key ideas, languages and protocols underlying the Web. - Applying knowledge and understanding: Be able to apply this knowledge by designing and implementing a basic Web application. - Making judgements: Be able to validate and reflect on the impact of technical design decisions on the functionality and usability in a Web context.

Inhoud vak

Inhoud vak

The lectures and online materials teach you the key ideas languages and protocols underlying the Web. These ideas include separation of concerns in terms of content versus style and client versus server, the notion of device independence. Important Web languages and protocols include URI, HTTP, HTML, CSS and JavaScript. By participating in the practical sessions and by making the assignments, you will develop the skills you need to apply these techniques to create basic Web content yourself, and to systematically validate and assess more advanced Web content made by yourself and others. The course will teach you the basic building blocks of the Web as it is today, and understanding how they are related will also help you understand future developments. During the course, you will: - create your own HTML content and formally validate it on syntactical correctness - create you own CSS style sheets to render the same HTML content differently on different devices - apply JavaScript code made by others and use it to enrich the interactive behavior of your own Web content, and learn how to debug such applications - build a Web server with a RESTfull HTTP API - write a technical report in which you evaluate your own website on international accessibility criteria

Aanvullende informatie onderwijsvormen

Lectures (4x2 hours p/week), practical sessions (2x4 hours p/week, attendance mandatory), home work (preparation lectures, preparation practical sessions, making assignments, preparing exam (26 hours p/week)

Toetsvorm

The final grade is determined from the following components: - Individual exam counts for 30%. - Four (group) assignments count for 60% (4x15%). - Attendance of lab sessions and active participation counts for 10%. To pass the course both the final grade and the individual exam need to be equal or above 5.5 There will be a resit for the individual exam only.

Literatuur

Provided online via ZyBook & Canvas

Aanvullende informatie doelgroep

1 CS

Afwijkende intekenprocedure

Registration is compulsory at least 4 weeks before the course starts. Group enrolment takes place in Canvas.

Toelichting Canvas

Further information for this course will be made available online (Canvas). All students must be enrolled in the course Canvas community.

Aanbevolen voorkennis

An introductory programming course, being able to use a command line interface such as bash or Powershell.

History of Science

Course Code	X_400318
Credits	3
Period	P5
Course Level	200
Language Of Tuition	English
Faculty	Faculty of Science
Course Coordinator	dr. D.J. Beckers
Examiner	dr. D.J. Beckers
Teaching Staff	dr. D.J. Beckers
Teaching method(s)	Study Group, Lecture

Course Objective

Students acquire knowledge about the history of computing from various perspectives: computing as a scientific goal, computing as a government (administrative or military) objective / ideal, computing as an economic enterprise. Students acquire knowledge about the meanings digital culture has for various people in contemporary society. Thereby students will be better equipped to reflect on their subject of study.

Course Content

Various subjects from the history of computing will be treated. Several highlights will be discussed and placed within the social context of its time. By discussing these highlights from several points of view the history of computer or information science will serve as a way to illustrate the various roles of computing in society. The book by Campbell-Kelly will serve as an outline, and during the lectures this story will be complemented by presenting a European version of the same history.

Additional Information Teaching Methods

Lectures and short assignments. Optional quizzes helping to study; extra curricular activities for more in depth info.

Method of Assessment

Written exam; assignments yield a bonus of 1 point if all six assignments are graded and the average score is 6 or better.

Literature

Required reading: Martin Campbell-Kelly, Computer: a history of the information machine, Westview Press (2014). Optional extra literature is available on the Canvas site.

Additional Information Target Audience

Bachelor students in Computer Science, AI and IMM.

Additional Information

More information with the course coordinator: room U-252, d.j.beckers@vu.nl

Explanation Canvas

All info about the course is available through Canvas. The "Modules" page offers a chronological overview of the lectures, indicating when to prepare what, and optional extras.

Advanced Programming

Course Code	X_400561
Credits	6
Period	P1
Course Level	200
Language Of Tuition	English
Faculty	Faculty of Science
Course Coordinator	ir. M.P.H. Huntjens
Examiner	ir. M.P.H. Huntjens
Teaching Staff	ir. M.P.H. Huntjens, dr. A.J. van der Ploeg MSc
Teaching method(s)	Lecture

Course Objective

To learn advanced programming skills, to get to know and understand advanced programming concepts like inheritance and to get experience with programming some of the data structures that were taught in the course Data Structures & Algorithms.

Course Content

abstract data types (ADT's), exceptions, inheritance, interfaces, modifiers, polymorfisme, marker interfaces, wrapper classes, super, this, instanceof, copy constructor, from class Object: clone(), equals() and toString(), auto (un)boxing, generic classes, command line arguments, iterators, interface Iterable, for-each statement, methods with a variable number of parameters, implementation of: list and binary search tree, EBNF, parsing when EBNF of input is given, from API: ArrayList

Additional Information Teaching Methods

lectures and practicals

Method of Assessment

practical

Entry Requirements

practical of Computer Programming (XB_40011) or practical of Inleiding Programmeren (X_401096) or Project Appication Development (X_400556)

Literature

Absolute Java, Walter Savitch, Pearson International Edition, Fifth International Edition, ISBN: 978-0-273-76479-3.

Additional Information Target Audience

2BA, 3ECTR

Additional Information

Via VUnet and Canvas When the grades for problem 1 and 2 of the practical are G1 and G2, than the final grade F will be calculated with the formula F = (G1 + 2*G2) / 3. If the bonus problem has been made and te grade for the bonusproblem is B is >= 5.5 than the final grade will be calculated with the formula F = (G1 + 2*G2) / 3 + B/10. There is no resit opportunity for the practical assignments and bonus problem.

Intelligent Systems

Course Code	X_401086
Credits	6
Period	P3
Course Level	200
Language Of Tuition	English
Faculty	Faculty of Science
Course Coordinator	dr. K.S. Schlobach
Examiner	dr. K.S. Schlobach
Teaching Staff	dr. K.S. Schlobach
Teaching method(s)	Lecture, Seminar, Practical

Course Objective

Knowledge and understanding: at the end of the course, students will be familiar with basic knowledge of some of the core aspects of AI: state-space representations, search, adversarial search, logic, automated reasoning, reasoning with uncertainty and vagueness and machine learning. Applying knowledge and understanding: students will be able to implement basic (adversarial) search algorithms, as well as knowledge based and adaptive methods to build Intelligent Agents. Making judgements: students will have a basic understanding of the ethical and societal implications of the developements in AI. Communication skills: students will be able to write a scientific reports about an original research question in a group of students. Learning skills: students will be trained in acquiring a set of complex AI related topics in a restricted period of time, come up with an original research question and perform the necessary (empirical) research.

Course Content

This course will provide an in-depth understanding of classical Artificial Intelligence problems and approaches, such as search, knowledge representation and machine learning, by deepening the theoretical understanding and ability to apply those techniques in practice. This course will also give an overview of the theory and practice of Intelligent Systems, namely systems that perceive, reason, learn, and act intelligently. Students will acquire practical skills in developing intelligent systems building up on a thorough understanding of well-understood Artificial Intelligence approaches, including Knowledge Representation and Machine Learning.

Additional Information Teaching Methods

The course will be centered on the practical task of designing intelligent agents that perform in a challenging, and hitherto unsolved complex card game, against humans or other agents. There will be 12 lectures in the first 3 weeks, as well as a number of practical sessions in lab and working groups to help with the course material. There is also a significant amount of self-study, both to familiarise oneself with the AI theory and methods, and to program an Intelligent System using those methods.

Method of Assessment

There will be a digital exam and a groups assignment both contributing to the final grade. There will be a resit exam, but NO resit for the group assignment.

Literature

Russell, Norvig: Artificial Intelligence: A Modern Approach. Most recent Edition. Recommended, but not compulsory. There will be a reader.

Additional Information Target Audience

BSc Information Sciences (year 2) BSc Business Analytics (constrained choice) BSc Biology (elective)