Amsterdam University College

Excellence and Diversity in a Global City

Course Catalogue
2010 - 2011

UNIVERSITY OF AMSTERDAM

VU University Amsterdam

AUC Course Catalogue

Description of Courses in the Academic Core

ACC111 Academic English I

Credit points
6 ecp

Prerequisites
All students (apart from native speakers) should have exit level grade 8 in English VWO (or comparable). Remedial grammar work will be offered via self-study.

Learning Outcomes
Students

- develop an awareness of the communicative competences, the language skills and the attitudes to communicative performance that are required for becoming a successful junior member of a discourse community in their chosen field (e.g. genre conventions, attention to linguistic and presentational detail);
- develop lexical and grammatical competences that are appropriate for academic genres and that are sensitive to the mode of production (in plain English: they learn the differences between academic speaking and academic writing);
- gain insight into the structure of text types associated with specific genres in various disciplines within the three relevant domains of science, social science and humanities;
- gain insight into the various aspects of information literacy.

Skills-specific outcomes are as follows:

Reading: Students can understand the rhetorical structure of texts at the macro level (in order to be able to scan them quickly) and at the micro level.
Presenting: Students can with confidence present a short talk using PowerPoint on a subject relating to a big question.
Writing: Students can write a short academic paper in which they report on what others have said about an aspect of a Big Question, and in which they offer a critique thereon.

Course description
Attention will be paid to reading (30%), presenting (20%) and writing (50%).
a. Reading: Students will study a selection of texts from textbooks and academic journals relating to disciplines within each of the three relevant domains (science, social science, humanities). The texts will include surveys, research reports and reviews. Activities will be geared to developing techniques for identifying rhetorical patterns.
b. Presenting: Students will do *PowerPoint* evaluation exercises, audience interaction work (including gesturing), and presentation structure practice. Where necessary they will do remedial work on pronunciation via a mix of self-study and tutorials.
c. *Writing (macro)*: Students will produce two texts focusing on providing an overview of a limited amount of literature on a specific issue, plus a critique of the literature; skills will be built up by doing small assignments (e.g. introducing issues, announcing plans, summarising, critiquing) with intensive feedback.
d. *Writing and presenting (micro)*: students will do a substantial amount of basic exercise work in order to extend their linguistic competences to support the first steps that they take towards achieving C1 communicative competence in both writing and presenting. Attention will be paid to intonation, grammar, academic

vocabulary, punctuation as a means for organising information flow, and textual cohesion.

Assessment
Students will complete a number of small assignments for each skill, including two written texts of ca. 1200 words plus a 5–10 minute presentation on the second of the written pieces. This second written text will look at how a particular aspect of a Big Question is viewed from different disciplines, and will include a critique.

ACC121 Basic Research Methods and Statistics

Credit points
6 ecp

Prerequisites
Mathematics at exit level VWO Wiskunde A1 (or comparable). Remedial work will be offered via self-study.

Learning Outcomes
Students are able to understand and evaluate elementary statistical and numerical reasoning. They acquire a basic knowledge of research methods and statistics and are able to apply descriptive statistical methods.

Course description
This course provides a general introduction into the methods of behavioural and social research. It covers four general fields: the foundations of behavioural and social sciences, research design, data collection and data analysis.

Topics include:
- The role of theory
- Causality
- Descriptive, explorative and testing research
- Empirical cycle
- Conceptualisation and scale construction
- Populations and samples
- Research designs
- Experimental and quasi-experimental designs
- Survey research
- Independent, dependent, control and confounding variables
- Validity and reliability
- Collecting and representing data
- Descriptive statistics (mean, variance, standard deviation)
- Introduction to basic stochastics (probability, discrete and continuous stochastic variables)

Assessment
Students will complete a number of assignments and take a final exam.

ACC122 Calculus

Credit points
6 ecp

Prerequisites
Mathematics at exit level Wiskunde B1,2 (or comparable). Remedial work will be offered via self-study.

Learning Outcomes
This course provides students with the basic techniques in calculus and linear algebra.

Course description
The emphasis in the course is on differential and integral calculus in one and several variables.

Topics include:
- Limits and continuity
- Differentiation: definition, meaning and rules; extreme values
- Inverse functions, exponential and logarithmic functions
- Linear approximations and taylor polynomials
- Integration, sums and areas, the fundamental theorem, methods for computing antiderivatives
- Applications of integration to area, volume, lengths of curves
- First order differential equations
- Sequences, series and power series
- Vectors and coordinate geometry in 3-space
- Functions of two variables, partial derivatives
- Multiple integration and iterated integration

Assessment
Students will complete a number of assignments and take a final exam.

ACC123 Calculus and Linear Algebra II
Credit points
6 ecp

Prerequisites
Calculus

Learning Outcomes
The first part of this course aims to develop a good understanding of concepts and ideas in linear algebra, as well as the ability to perform matrix computations. Based on this, the second part extends the calculus of one variable into vector calculus.

Course description
Tools for the description and analysis of multi-dimensional vector spaces are introduced, studied, and trained in exercises and assignments. This will be done in sessions that combine lecturing and problem solving. The material will be applied to the calculus of functions between multi-dimensional spaces, and results in the classical theorems by Green, Gauss and Stokes.

Topics include:
Linear algebra
- Linear equations, matrices and vectors
- Subspaces, dimension and rank
- Matrix with respect to a pair of bases
- Determinants
- Eigenvalues, eigenvectors, diagonalisation
- Inner products and orthogonality
- Schur decomposition
- Singular Value decomposition
- (Vector) calculus

- Vector functions and curves
- Gradient and directional derivatives
- Vector and scalar fields
- Line integrals and vector fields
- Surfaces and surface integrals
- Divergence and rotation
- Theorems of Green, Gauss and Stokes

ACC131 Dutch I

Credit points
6 ecp

Prerequisites
None

Learning Outcomes
Students learn to handle a variety of uncomplicated, basic communicative tasks, including understanding spoken Dutch, answering questions and reading texts.

Course description
Students learn essential verbs, nouns and cases while working to build vocabulary and learn the basics of Dutch grammar and syntax. Students practice listening, speaking and reading skills. Students will also be introduced to Dutch culture through short texts from the internet, magazines and newspapers.

Assessment
Students will complete assignments for each skill (listening, speaking and reading). Students take both a mid-term exam and a final exam.

ACC132 French I

Credit points
6 ecp

Prerequisites
Elementary French. All students will take a grammar and vocabulary intake test, to determine whether remedial work is necessary. Remedial grammar work will be offered via self-study.

Learning Outcomes
Students learn to handle a variety of basic communicative tasks, including understanding spoken French, speaking French, reading texts and writing short texts.

Course description
Students learn essential verbs, nouns and cases while working to build vocabulary and learn the basics of French grammar and syntax. Students practice listening, speaking, reading and writing skills. Students will also be introduced to French culture through short texts from the internet, magazines and newspapers.

Assessment
Students will complete assignments for each skill (listening, speaking and reading). Students take both a mid-term exam and a final exam.

ACC133 German I

Credit points
6 ecp

Prerequisites
Elementary German. All students will take a grammar and vocabulary intake test, to determine whether remedial work is necessary. Remedial grammar work will be offered via self-study.

Learning Outcomes
Students learn to handle a variety of basic communicative tasks, including understanding spoken German, speaking German, reading texts and writing short texts.

Course description
Students learn essential verbs, nouns and cases while working to build vocabulary and learn the basics of German grammar and syntax. Students practice listening, speaking, reading and writing skills. Students will also be introduced to German culture through short texts from the internet, magazines and newspapers.

Assessment
Students will complete assignments for each skill (listening, speaking and reading). Students take both a mid-term exam and a final exam.

ACC134 Spanish I

Credit points
6 ecp

Prerequisites
None

Learning Outcomes
Students learn to handle a variety of uncomplicated, basic communicative tasks, including understanding spoken Spanish, answering questions and reading texts.

Course description
Students learn essential verbs, nouns and cases while working to build vocabulary and learn the basics of Spanish grammar and syntax. Students practice listening, speaking and reading skills. Students will also be introduced to Spanish culture through short texts from the internet, magazines and newspapers.

Assessment
Students will complete assignments for each skill (listening, speaking and reading). Students take both a mid-term exam and a final exam.

ACC135 Arabic I

Credit points
6ecp

Prerequisites
None

Learning Outcomes
Upon completion of the course, students will be able to read and write the Arabic alphabet. Students learn to handle a variety of uncomplicated, basic

communicative tasks, including understanding spoken Modern Standard Arabic, answering questions and reading texts.

Course description
The Arabic language consists of two varieties: Modern Standard Arabic, which is used in writing, in the media and in formal speech, and colloquial Arabic, which refers to the different regional dialects that are used in informal speech. Modern Standard Arabic is understood by educated Arabic speakers across the Middle East and North Africa. In this course, students will learn the Arabic alphabet, as well as basic grammatical structures, syntax and vocabulary of Modern Standard Arabic. Students will also be introduced to the culture of the Arab world through short texts from the internet, magazines and newspapers.

Assessment
Students will complete assignments for each skill (listening, speaking, writing and reading). Students take both a mid-term exam and a final exam.

ACC141 Identity and Diversity in a Global City
Credit points
6 ecp

Prerequisites
None

Learning Outcomes
- Students are theoretically sensitized to and prepared practically for issues arising from a multicultural context at the societal level in general as well as referring to their particular situation as students at an international college in a specific multicultural society. This will help them, on the one hand, to understand the main issues of world politics nowadays (e.g., terrorism and polarization) and, on the other hand, to cope with, feel, and function academically, personally, and socially.
- Students are provided with a brief (cultural, social, and political) orientation regarding the Netherlands.
- The students' academic skill of critical self-reflection is developed.
- The students' knowledge about and skills with respect to successful intercultural communication are developed. This will assist their academic performance.
- Students are introduced to dialectical, multi-level, and multi-method thinking
- Students are provided with a platform where they can share and discuss their own experiences with culture and identity.

Course Description
The world is composed of a large variety of peoples and cultures, some constituting large majorities (in number, or merely in terms of power), others forming small minorities. In a sense, multicultural diversity is of all times. Relatively new is the emergence of modern nation states and ensuing, often times official, cultural communities with clearly articulated boundaries. There is, however, nothing static about this situation. Group-formation processes are ongoing historical processes, outcomes of continuing political struggle, economic development, modernization, globalisation processes (influence of mass media, migration, etc).
The Netherlands is not unique in this respect. Moreover, developments within the borders of the Dutch nation-state are intimately connected with local and transnational processes in the world at large. In order to acquire a better

analytical and theoretical understanding of issues related to identity formation in the Dutch, culturally diverse, context, local, transnational and global processes need to be included.

The aim of this introductory course is to familiarize students with academic views and debates about the aforementioned matters. The course addresses various topics in relation to identity in a multicultural context, such as the politics of identity, transnationalism and migration, state-formation and nationalism, self-organization, politics of religion, globalisation and 'creolisation'.

The following themes are included:

- The relation between culture and ethnicity
- Nationalism and long-distance nationalism
- Colonisation and decolonisation
- Migration and transnationalism
- Identity politics and the politics of religion
- Identity and gender
- Processes of inclusion and exclusion
- Processes of labelling, classification and categorization
- Minority politics
- Politics of commodification and cultural representation

Assessment
- In-class participation (5%)
- Individual and group presentations, debates (10%)
- 2 papers (15% & 25%)
- 2 exams (midterm and final) (20% each)
- Contribution to the final event prepared by the students (5%).

ACC142 Performing Arts
Credit points
6 ecp

Prerequisites
None

Learning Outcomes and Course description
Is being developed in cooperation with the Rietvelt Academy.

ACC143/SSC Chinese Studies
Credit points
6 ecp

Prerequisites
None

Learning Outcomes
After this course, students will have acquainted themselves with what is by many perceived as an upcoming global power, be aware of its histories (multiple, indeed), its politics, its economy and, particularly, its varied cultures both old and new. Most of all, they will become sensitive to the contradictions, contestations, inequalities and ambiguities that are always part and parcel of any understanding of Chinese cultures.

Course Description
Over the past three plus decades, Chinese culture has undergone tremendous changes. Starting with a historical approach to contemporary China and a short introduction to its main language Mandarin, this course will subsequently zoom in on the cultural developments in China. While focusing on contemporary culture, the course readings will remain sensitive to the political and economic context. Examples of important cultural developments that will be further analysed in this course include the rise of the avant-garde visual arts movement from the 1980s onwards, the emergence of a vivid rock and pop culture and the development of a transnational Chinese cinema. Not only global but also regional cultural flows, most notably from Japan and South-Korea to China, will be analysed. The material implications of the changes will be scrutinized. For example, as part of the mediated spectacle of the Beijing 2008 Olympiad, new architectures have radically altered the cityscapes of Beijing, just as Shanghai is preparing itself for a make-over for the 2010 World Expo.

Assessment
Assignments and essays.

ACC151 Big Questions in Science
Credit points
6 ecp

Prerequisites
None

Learning outcomes

1. Students appreciate the basic human drive for scientific enquiry
2. Students understand the connection between sciences and their meaning
3. Students will be aware of the spatial sizes and time scales of natural phenomena
4. Students understand the most important turning points in science and technology
5. Students become conversant with the interplay of science, technology and society

Course Description
Developments in science and technology have an important impact on the dynamics of our society. This course introduces students to exciting ideas at the forefront of scientific research, and develops the attitude characteristic of a scientific approach to the world. It gives an introduction to the crucial turning points in our scientific view on nature. These turning points will act as nodes in a comprehensive overview of the natural sciences and their interrelationship, along with the crucial experiments and the theoretical paradigm shifts they caused. As the course emphasizes the cultural dimensions of the natural sciences, it may also serve as a starting point for a critical dialogue between the natural sciences, the social sciences and the humanities, which is of great importance in the modern highly technological society.
This courses aims to provide a connection between various natural sciences, like physics, astrophysics, chemistry and Darwinian and molecular biology. It is an integrated approach in which different perspectives are exploited: the distance scales, the phenomena, the disciplines, the turning points and their impact, and the history of the universe where the whole structural hierarchy of the physical

universe – from quarks to humans – was built up. Subjects like quantum mechanics, astrophysics, evolution and molecular biology are central to the course. In addition, scientific approaches and methodology, the history of science and the philosophy of science will be discussed.

Topics

1. Introduction; what is science?
2. Solar system and life
3. Stars and the milky way
4. Black holes and cosmology
5. From Keppler's laws to string theory
6. The micro cosmos
7. The quantum world
8. Atoms, forces and detectors
9. The big bang
10. The molecular basis of life
11. The living cell
12. Molecular genetics
13. Planet earth
14. (Neo)Darwinism
15. Sexual selection
16. Scenarios for the future
    Discussion panel; exam

Additionally, several site-visits will be planned in order to introduce students to state-of-the-art science labs and institutions in and outside the two universities.

Assessment
Assignments, essays and an examination.

ACC152 Big Questions in Society
Credit points
6 ecp

Prerequisites
None

Learning Outcomes
Students acquire a historical overview of human problems (the ecology, poverty, war, terrorism and migration and pathologies of individualism) and are able to make a theoretical analysis of these problems.

Course Description
In the course of human history, people have struggled with their natural environment, including other animals (ecological problems), with their fellow humans (social problems of conflict and cooperation), and with their inner nature (psychological problems of civilization). The long-term history of mankind suggests that humans have gained increasing levels of control over each of these three domains, mainly by coordinating their actions ever more widely and intricately. However, the price humans pay for these advances seems to be an increase in collective vulnerability. Problems confronting 'global cities' like Mexico City, Mumbai, New York and Amsterdam are emblematic. Global society is developing into a global risk society. Contemporary societal 'Big Questions' centre around (a) the ecology; (b) poverty, war and terrorism, and migration; and (c) pathologies of individualism.

In social theory, the risks people run and the problems they confront have traditionally been analyzed from two separate perspectives. A realist perspective sees risks and problems as objective threats, collective evils affecting large numbers of people and (or) requiring collective action. A constructivist perspective on the other hand sees risks and problems as subjective perceptions leading to claims by groups of people referring to putative conditions.
The history of human problems may fruitfully be analyzed from an angle integrating both perspectives above, assuming that objective developments provide general conditions under which political and moral entrepreneurs do succeed, or do not succeed, in framing specific complaints and problems, and in bringing about collective action. Outcomes of these actions, often at least partly unintended, create new conditions for the framing of new problems.

Assessment
A combination of lectures and group research seminars around selected topics.

ACC153 Big Questions in History
Credit points
6 ecp

Prerequisites
None

Learning Outcomes
Students will become aware of the most important developments in global history, and conversant with important themes that have characterized this history.

Course Description
This course offers an overview of human history placed within the context of the history of life, the Earth, the Solar System and the Universe as a whole. This approach to human history is known as big history. Special attention will be paid to the last 10,000 years of human history, when culture took over as the main adaptive mechanism. This period witnessed the worldwide emergence of agriculture as well as the rise of state societies, while during the past five hundred years, globalization, science, industrialization, urbanization and democratization have all contributed to deeply transform human societies. During all lectures, we will focus systematically on how humans have been transforming their natural environment. The last lecture will deal with the question of what we may expect from the future.
The course starts by a series of introductory lectures. First we will consider why we actually study history. We will pay attention to what historians consider to be the big questions as well as what you think the big questions should be. Then we will consider how history can be studied. Finally we will examine what might be gained by looking at human history from a big history point of view. Our claim is that by looking at human history in this way, it becomes possible to understand both yourself and the world around you in a way no other approach to history offers. Furthermore, by contemplating the grand sweep of history, simple general theoretical principles emerge which would otherwise have remained hidden. These guiding principles will hopefully help you to understand better how everything has become the way it is now, as well as what the future may look like.
The course will consist of a series of 30 lectures, each followed by an interactive session during which students will discuss important points of view as well as execute challenging tasks. The required reading will probably consist of two text books as well as a few seminal articles.

Assessment
Assignments and essays.

ACC154 Big Books
Credit points
6 ecp

Prerequisites
None

Learning Outcomes
This course introduces students to a number of important books in the Western tradition and will acquaint students with the historical, cultural, political and economic context of these works. In discussing these works, students will develop a keener appreciation of the various influences that we are subject to when we think about what it means to be human.

Course description
The book is one of the strongest and most lasting bearers of intellectual heritage. For centuries human life, social debate, great ideas and revolutions have been codified in books to be activated by readers near and far in time and space.
Big Books examines works of paramount importance in Western history and explores their possible meanings. We will ask questions such as who reads and has read big books? What are the effects of these books on art, society or history in general? What do these works tell us about our past and present culture? And why are big books relevant to our future? These texts of major significance from literature, philosophy, the human sciences, and politics will all be approached from a cultural and historical perspective.
As the course unfolds, students will read and study books that have been of crucial importance in Western history. Lectures by specialists in the field(s) surrounding these works will be flanked by seminars and active in-class discussion

Course structure: A midterm exam, two interim assignments, and a final paper.

Big Books discussed will include:

- Homer: *The Odyssey* (Penguin; prose translation by Rieu).
- Plato: *Symposium* (Cambridge UP).
- Augustine: *Confessions* (edition TBA).
- Erasmus: *Praise of Folly* (any edition).
- Shakespeare: *Hamlet* (recommended editions: Arden, Norton Critical Editions).
- Montesquieu: *Persian Letters* (Oxford UP).
- Mary Wollstonecraft: *A Vindication of the Rights of Woman* (Norton Critical Editions).
- Mary Shelley: *Frankenstein* (any edition).
- Michel Foucault: *Discipline and Punish* (Penguin).
- Paul Auster: *The New York Trilogy* (any edition).
- J. M. Coetzee: *Disgrace* (any edition).

Assessment
Over the course of the semester, each student will give two group presentations of 30 minutes on the book(s) studied in the week of their presentation. As well, students will write a mid-term, take-home exam based on their reading and class discussion. Students will also be required to submit a final paper of 8-10 pages,

discussing at least two of the books studied during the semester, the reception of those works at the time of publication, and the cultural and historical influence these books have had since their initial reception.

ACC161 Logic, Information Flow and Argumentation

Credit points
6 ecp

Prerequisites
None

Learning Outcomes
Students acquire basic knowledge of logic, argumentation, computation, and information, and become acquainted with applications in other disciplines.

Course description
The course offers a new style of introducing logic, bringing in basic ideas from
(a) Argumentation theory,
(b) "Information dynamics",
(c) Complexity and computation,
(d) Cognitive psychology, and
(e) Game theory.

Topics covered:

- Basic structures in argumentation: valid and invalid patterns
- *Propositional logic*: classification, information update, understanding the mathematical system behind reasoning patterns
- Difficulties with propositional reasoning in practice: key psychological experiments, and new logic models for these
- Information flow in questions and answers; agents and mutual knowledge
- Connections with natural language and linguistics
- *Epistemic logic* as a practical system for interactive reasoning, solving puzzles, and connections to information exchange, security, etc.
- *Dynamic logic* and computation: control structures in conversation, argumentation, and action in general
- Complexity: sense for different levels of difficulty in (logical) tasks
- Interaction and games

Assessment
Students will complete a number of assignments, including an analysis of an argumentative text, give an individual presentation, and take a final exam.

Interest item
The course will probably be internet-based, with various supporting tools, and it is part of a worldwide experiment in creating a new open course approach to logic, sponsored by the Dutch Ministry of Education. For the team behind this, see http://science.uva.nl/~jasparas/LIA/LO

ACC211 Academic English II

Credit points
6 ecp

Prerequisites
ACC 111 (Academic English 1)

Learning Outcomes
The aim of the course is that students develop the necessary skills for completing a research project independently.

Course description
Students will develop the necessary skills for independently completing a research project and will be well-prepared for their capstone project in the third year. Students will work on formulating an individual research project, determining a topic and making a work plan. The development of these skills will serve not only as preparation for their capstone project but also for potential postgraduate studies. Students will enhance their writing skills, building on those learned in Academic English I, and will further develop their critical reading and thinking skills along with their ability to find and critically evaluate sources. Reading and analysing different sorts of academic texts to support their studies will be an important part of the second year course. Students will also further develop their presentation and debating skills and the professional skills necessary for their future careers.

ACC221 Basic Research Methods and Statistics II
Credit points
6 ecp

Prerequisites
ACC 121 (Basic Research Methods and Statistics)

Learning outcomes
This course builds on the skills developed through BRMS I (1st year course). The students will learn various quantitative approaches which are commonly used in social science research.
The student can

- Explain the basic ideas of item-response theory.
- Understand the conceptual meaning of reliability and validity
- Understand the meanings of and relationships between p-value, effect size and sample size.
- Choose an appropriate technique to analyze data, based on a short description of a research design and question
- Understand and can apply the following statistical analyses using SPSS: correlation, linear regression (simple and multiple), mediation analysis, 1-way & 2-way ANOVA, post hoc procedures, and interaction analyses
- Critically read and understand the basics of methods and results sections in empirical papers from different fields.
- Design and conduct independent research to solve basic research questions

Course content
The main aim of the course will be to teach students the ability to understand, conduct and interpret quantitative analyses of various empirical studies. Students will also conduct their own research project and regularly read and discuss method and results sections of empirical research articles from various disciplines.

As in BRMS I, we will continue to cover all discipline-independent aspects of creating new knowledge:

- How to formulate a scientific question
- How to plan an investigation bearing on that question
- How to conduct the inquiry

- How to present the data that result from your research
- How to interpret your results, and extrapolate beyond your data
- How to report the results in an appropriate way

The central question we will address in this course is: How do I design and analyse research so that it will yield conclusions that are acceptable to critical peers?

The course will be an alternating series of interactive lectures and practicals in which students learn the theoretical background as well as the application of several statistical techniques, including correlations, regressions, Chi-Square tests, t-tests, and ANOVAs. The practicals will mostly be used to learn coding, analysing, reporting and interpreting data using SPSS.

ACC222 Qualitative Research Methods

Credit points
6 ecp

Prerequisites
Students are required to have completed at least one 100-level course in the social sciences.

Course description
This course will help students develop the skills necessary to not only evaluate social science research and literature, but also conduct qualitative research on their own. Students will learn how to formulate a coherent research question, identify the proper qualitative methods to apply to that question, and develop conclusions on the basis of that research. A range of qualitative methods will be discussed and used in class. These include but are not limited to:

- Interviewing techniques
- Content analysis
- Participant observation
- Case studies
- Ethnography

Ethical issues related to conducting qualitative research will also be discussed.

ACC231 Dutch II

Credit points
6 ecp

Prerequisites
ACC 131 (Dutch I)

Learning Outcomes
This course aims at improving and developing skills and strategies to enable students to handle successfully more complicated oral and written tasks in Dutch.

Course description
This course aims at improving and developing skills and strategies to enable students to successfully handle more complicated oral and written tasks in Dutch. Students will increase their general vocabulary of verbs, nouns, articles and prepositions while gaining a greater knowledge of complex problems in Dutch grammar and syntax. Students will continue to learn about Dutch culture through short stories, novellas, films and TV programmes. Students will also be required to submit book reports and short essays.

ACC232 French II
Credit points
6 ecp

Prerequisites
ACC 132 (French I)

Learning Outcomes
This course aims at improving and developing skills and strategies to enable students to handle successfully more complicated oral and written tasks in French.

Course description
This course aims at improving and developing skills and strategies to enable students to successfully handle more complicated oral and written tasks in French. Students will increase their general vocabulary of verbs, nouns, articles and prepositions while gaining a greater knowledge of complex problems in French grammar and syntax. Students will continue to learn about French culture through short stories, novellas, films and TV programmes. Students will also be required to submit book reports and short essays.

ACC233 German II
Credit points
6 ecp

Prerequisites
ACC 133 (German I)

Learning Outcomes
This course aims at improving and developing skills and strategies to enable students to handle successfully more complicated oral and written tasks in German.

Course description
This course aims at improving and developing skills and strategies to enable students to successfully handle more complicated oral and written tasks in German. Students will increase their general vocabulary of verbs, nouns, articles and prepositions while gaining a greater knowledge of complex problems in German grammar and syntax. Students will continue to learn about German culture through short stories, novellas, films and TV programmes. Students will also be required to submit book reports and short essays.

ACC234 Spanish II
Credit points
6 ecp

Prerequisites
ACC 134 (Spanish I)

Learning Outcomes
This course aims at improving and developing skills and strategies to enable students to handle successfully more complicated oral and written tasks in Spanish.

Course description
This course aims at improving and developing skills and strategies to enable students to successfully handle more complicated oral and written tasks in Spanish. Students will increase their general vocabulary of verbs, nouns, articles and prepositions while gaining a greater knowledge of complex problems in Spanish grammar and syntax. Students will continue to learn about Spanish culture through short stories, novellas, films and TV programmes. Students will also be required to submit book reports and short essays.

ACC235 Arabic II
Credit points
6ecp

Prerequisites
ACC 135 (Arabic I)

Course description
t.b.a.

ACC241/HUM Amsterdam in the Golden Age
Credit points
6 ecp

Prerequisites
None

Learning Outcomes
Students will learn about historical developments in the Dutch Republic that made the 17th century such an important period for The Netherlands, the 'Golden Age', and will trace the significance of these developments to the present day.

Course description
The Golden Age, which corresponds roughly with the 17th century, was an extremely important period in Dutch history. The enormous increase in trading activity at that time not only increased social mobility but produced a wealthy merchant class. This merchant class was important for patronage of the arts, literature and science and the merchants were also in a position to influence urban planning and architecture of that time. Topics to be covered in the course include colonialism and trade; scientific discoveries; navigation; the Dutch East India Company and the Amsterdam Bank; tulip fever; the perceived tradition of religious tolerance in the Netherlands; still-life painting; the Dutch political scene and the Dutch Republic in 17th century Europe.

ACC261/SSC/HUM Philosophy
Credit points
6 ecp

Prerequisites
None

Course Description
In this introductory course, which will consist of lectures and thematic workshops, students will be introduced to great philosophical questions and will be made aware of how some of history's greatest philosophers have approached these questions. Students will also learn how to frame philosophical questions of their own and use philosophical methods to address them. Topics will include human function and moral virtue, the nature of good and evil, the nature of freedom and free will and personal identity. Some questions to be considered are:

- Why does human kind have a conscience?
- If God exists, why do bad things happen in the world?
- Do we have free will?
- Are we essentially our minds or are we human organisms?

ACC262/SSC/HUM Philosophy of Science
Credit points
6 ecp

Prerequisites
Students are required to have completed at least two 200-level courses in their major.

Learning Outcomes
Students will be provided with key concepts and approaches in contemporary philosophy of science and with the analytical tools needed for a considered reflection on the nature of scientific knowledge and its roles in today's culture and society.

Course description
In this course students will become acquainted with the most important ideas and analytical tools of philosophy of science, and they will develop the skills to use these tools and ideas for reflecting on the nature of contemporary scientific knowledge and its role in today's culture and society.

After a brief introduction in which the aims and the significance of philosophy of science will be discussed, and its historical origins sketched, the course will focus on the issue of the unity of science. While traditional philosophy of science, in particular the logical-positivist movement, regarded science as essentially unified, this idea has been challenged in recent times. We will study the question of whether contemporary science is unified or dis-unified from three different perspectives. First, the methodological point of view: Are disciplinary methods fundamentally different or are they species of a single scientific method? Second, the issue of reductionism: Are the different sciences autonomous or is there a (hierarchical) relation between them? What does this imply for our view of the world and for the ways in which societal problems can be approached scientifically? Third, the debate about the nature of scientific explanation: Is there an essential difference between types of explanation and understanding in the natural sciences, social sciences, and humanities?

Subsequently, we will apply our findings to the theme of interdisciplinarity. What does an interdisciplinary approach consist of, and what are the conditions for fruitful interdisciplinary research? We will apply our analysis of interdisciplinarity to concrete cases from the six themes in the AUC curriculum. Finally, we will investigate the impact of science on contemporary society and culture. Throughout the course we will draw on examples from the physical and biological sciences, as well as the social sciences and humanities. Students will be encouraged to relate the philosophical ideas and tools to their own specific fields of interest.

Assessment
Students will complete a number of assignments and take a final exam.

ACC263/SSC/HUM Ethics
Credit points
6 ecp

Prerequisites
Students are required to have completed at least two 200-level courses in their major.

Course description
What is the right thing to do? Do I really have a moral responsibility to others? Are there good reasons to act morally? Does morality have any foundation? This course in ethics will not only explore these questions in a systematic manner, but also engage with some of the most pressing problems in society today. Students will have the opportunity to develop familiarity with important ethical theories such as deontology, utilitarianism, virtue ethics and ethical relativism. They will be introduced to central philosophers such as Aristotle, Kant and Nietzsche and more modern writers such as Singer, Nussbaum and Neiman. Topics may include but are not limited to:

- Euthanasia, human experimentation and other issues in medical ethics.
- Terrorism, violence, equality and the limits of justice.
- Animal rights, sustainability, and eco-radicalism.
- Diversity and discrimination.

This course will provide students with an excellent introduction to the ethical dimension of many of the themes that they are studying at AUC: social systems, health and well-being, and energy, climate and sustainability.

ACC311/HUM Creative Writing
Credit points
6 ecp

Prerequisites
Academic English I
Learning Outcomes
This course aims to further students' writing proficiency in English and familiarise them with techniques used in English prose writing and other genres.

Course description
Students explore grammar, vocabulary, character and point of view before embarking on fully-fledged exercises in prose.

ACC321 Data Analysis
Preparation for Cap-stone.

ACC322 Advanced Statistics
Credit points
6 ecp

Prerequisites
Calculus and Linear Algebra

Course description
Topics covered will be discrete and continuous probability distributions with methods of mathematical analysis, e.g. random variables and joint distribution.

ACC331 Dutch III
Credit points
6 ecp

Prerequisites
Dutch II

Learning Outcomes
Students develop skills that enable them to handle a wide variety of communication tasks. This course also provides understanding of cultural aspects of the Netherlands.

Course description
Students build on elements of vocabulary and syntax. Students learn the basics of academic writing and debate in Dutch and continue to learn about Dutch culture by reading short stories and one novel, as well as viewing and reporting on films and TV programmes. Students will be required to submit short essays as well as one longer final essay.

ACC332 French III
Credit points
6 ecp

Prerequisites
French II

Learning Outcomes
Students develop skills that enable them to handle a wide variety of communication tasks. This course also provides understanding of cultural aspects of France and other French speaking countries.

Course description
Students build on elements of vocabulary and syntax. Students learn the basics of academic writing and debate in French and continue to learn about French culture by reading short stories and one novel, as well as viewing and reporting on films and TV programmes. Students will be required to submit short essays as well as one longer final essay.

ACC333 German III

Credit points
6 ecp

Prerequisites
German II

Learning Outcomes
Students develop skills that enable them to handle a wide variety of communication tasks. This course also provides understanding of cultural aspects of Germany and other German speaking countries.

Course description
Students build on elements of vocabulary and syntax. Students learn the basics of academic writing and debate in German and continue to learn about German culture by reading short stories and one novel, as well as viewing and reporting on films and TV programmes. Students will be required to submit short essays as well as one longer final essay.

ACC334 Spanish III

Credit points
6 ecp

Prerequisites
Spanish II

Learning Outcomes
Students develop skills that enable them to handle a wide variety of communication tasks. This course also provides understanding of cultural aspects of Spain and other Spanish speaking countries.

Course description
Students build on elements of vocabulary and syntax. Students learn the basics of academic writing and debate in Spain and continue to learn about Spanish culture by reading short stories and one novel, as well as viewing and reporting on films and TV programmes. Students will be required to submit short essays as well as one longer final essay.

ACC335 Arabic III
Credit points
6ecp

Prerequisites
ACC 235 (Arabic II)

Course description
t.b.a.

Description of courses in the Humanities

HUM111 Theme Course I Introduction to Cities and Cultures - The City and its Others: Renaissance Florence to Revolutionary Paris

Credit points
6 ecp

Prerequisites
None

Learning Outcomes
In the Cities and Cultures theme courses students will gain insights into the importance of urban centres at various key historical junctures, beginning with early modern European cities such as Florence and Golden Age Amsterdam and their role in colonialization and trade. Important centres in Enlightenment Europe will be analyzed in terms of their role in the intellectual and industrial revolutions, concluding with Paris and the French Revolution. Students will also consider the problems that have grown up with cities over the course of their various histories as well as possible directions for urban life in the future.

Course description
In this theme course we will investigate how humans have given form to and been formed by their life together in society and through culture. In so doing, we will take into consideration insights from the humanities as well as from the social sciences, in order to better understand how cities have been important sites of technological change and innovation; economic magnets; religious and political centers of power and influence; and clearing houses of ideas – religious, cultural, political, or scientific.

However the city has also had many 'others' whom it has variously nourished, subjected and rejected, and by whom it has been threatened and sometimes destroyed. Internally, the city has relied on individuals and groups who were at the same time often subversive forces – artists, the bourgeoisie, political and religious radicals, immigrants and the economically marginalized, to name a few. At the same time, urban centers have had a complex and dynamic relationship with external forces – the surrounding land and water and their related agrarian and maritime communities, external political competitors, and regional/global economic, social and cultural forces. These relationships have helped to define urban life, and the cultures and societies through which cities have emerged and which they havesustained.

The central focus, then, is the history of the city and its relationship with its various others, the enduring social, political and ethical issues these relationships have raised, and the cultural heritage that these relationships have engendered and disrupted.

The first year thematic course will examine the contours of urban life by studying "The City and Its Others" from early modern Europe through to the Enlightenment. The selection of cities through which discussion will be focused will include:

Topics

- Renaissance Florence
- Renaissance Barcelona

- Early London
- Golden Age Amsterdam
- Revolutionary Paris

Course structure
This class will meet twice a week and include guest lectures by experts in the various areas we will address.

Assessment
Midterm exam, two interim assignments, and a final paper.

HUM121 Literary Cities and Urban Fictions
Credit points
6 ecp

Prerequisites
None

Learning Outcomes
Students will gain insight into the ways in which literary texts reflect on, and are implicated in, the social production of space, while becoming acquainted with a range of literary texts that represent modern life in the city. Students will also become familiar with a range of critical theories about space and spatialisation.

Course description
In this course, we will study literary representations of European cities from the perspective of the "spatial turn" in critical and social theory. We will ask how the cities under discussion have been represented in literary texts over time. We will ask what stories, myths, and ideologies have become associated with these cities, and we will explore the relations between literary imaginings of the city and larger social processes such as migration, globalisation, the financial revolution, and the rise of multiculturalism. In doing so, we will take as our starting point the notion that cities and their spaces never have a stable set of meanings which can simply be assumed, but that urban spaces and spatial orders are continuously constructed and (re-)negotiated through language, narratives, and cultural signs. In order to get a critical grip on the "literary cities" under discussion, we will read a wide range of critical and theoretical texts about urban spaces and spatialities, and about how lives, cultures, and subjectivities are shaped by urban environments and imaginings. Among the theorists and concepts used are: Henri Lefebvre ("the production of space"), Georg Simmel ("the metropolis and mental life"), Michel Foucault ("heterotopia"), Mikhail Bakhtin (the "chronotope" and "chronotopicity"), Fredric Jameson ("postmodern hyperspace"), John Friedmann (the "world city"), and many other theorists and critics from the fields of literary and cultural studies, urban sociology, and social theory and philosophy. Most of those theorists are included in The Blackwell City Reader, which will serve as the course textbook.

Assessment
Students will give two group presentations and a write a midterm, take-home essay exam. Students will also write a final research essay based on material discussed in class as well as their own findings and reading.

HUM131 Film History

Credit points
6 ecp

Prerequisites
None

Learning Outcomes
Students are familiar with the technical development of film as a medium as well as with the aesthetic development of the cinema as both an artistic endeavour and as an entertainment industry.

Course description
The course will begin with the prehistory of film in 18th-century entertainment technologies that anticipated the modern cinema, such as magic-lantern shows and visual toys. The course will then move on to early film and the shift from film as a documentary medium to a narrative or story-telling medium, along with developments in cameras, film and projection techniques that made this shift possible. Students will also learn about technical developments that affected movie theatres and the ways in which they attracted viewers, as well as the political and ideological uses that narrative cinema has served at various historical junctures. Special attention will be paid to how film has developed and signified to viewers in different national settings, ranging from European countries and the United States to the former U.S.S.R. and Japan. In the process, students will learn the meaning of key concepts in film studies such as the "cinema of attractions" and the "language of the cinema", while learning about the history of various modes such as silent, animated and CGI enhanced film, and genres such as the western, the melodrama, science-fiction, the musical and the adventure film.

Topics include
- Pre-cinematic entertainments
- Early film technology and industry
- Silent film and the narrative turn
- The language of cinema (editing, shots, sound)
- The rise of national cinema
- Classical Hollywood: Vertical integration and the industry
- The star machine in the dream factory
- The documentary: fiction vs. non-fiction
- Film and propaganda
- Special effects and the cinema of attractions
- Animation
- Popular European cinema
- The role of film festivals
- Home cinema: VHS, DVD and beyond
- CGI and the future of film

Assessment
Students will attend screenings along with regular classes. Assignments will include two 30 minute group presentations and a take-home, midterm essay exam. Students will also write a final essay of 8-10 pages.

HUM141 Periods and Genres

Credit points
6 ECTS

Prerequisites
None
Learning Outcomes
To acquaint students with major periods in Western art history since the 17th century, as well as with major genres in art and their development.

Course description
In this course students will learn about the major periods around which art historical knowledge is structured, and will learn to recognise features of a given period (e.g. Baroque, Romanticism, Impressionism) as it is expressed in works of art from various European and American cultural contexts. At the same time students will learn about the importance of particular countries and urban centres (Amsterdam, Paris, Berlin, New York) and their relation to various genres and styles. Examples will include the Northern Renaissance in the Dutch Republic, the baroque period in Germany and France, the advent of modernity in the 19th century, Impressionism, the 20th-century avant-gardes, and postmodernism.

Topics (selected)
- The Golden Age: Art and Everyday Life
- The Art of Absolutism
- Revolution to Romanticism: David to Delacroix
- Realism in Europe – The Age of Revolutions
- The Advent of Modernity: Impressionism and Postimpressionism
- Expressionism
- High Modernism (and its Enemies)
- Postwar European Art
- New York: Abstract Expressionism and After

Assessment (provisional)
Students will write a midterm exam, and keep a journal of their museum visits while following the course. From their journal, students will be called upon to present one or more works of art and explain how this art relates to the period in which it was produced, the concept of genre and the dominate styles of the period. Students will also be required to submit a final essay in which they examine one or more works by a selected artist, based on the theories and history studied during the semester.

HUM151 Communication
Credit points
6 ecp

Prerequisites
None

Learning Outcomes
Students will become familiar with the objects of communication studies as a discipline, as well as with the history of communications media and their impact on society.

Course description
This introductory course will provide students with a knowledge of the history of media, and a knowledge of the ways in which media work, as well as the changing nature of communications and the impact of media on individuals and societies at the local, regional and global levels. Students will gain a social scientific understanding of the role of media and communications in Europe and other parts of the world, such as North America. While examining contemporary media structures and developments, students will also learn about the historical context of these developments. Students will also acquire a broad knowledge of theoretical and methodological approaches within the field of media and communication, as well as an awareness of the place of media in their broader historical, political, economic, social and cultural contexts, at local, regional and global levels.

Course structure
Students will be required to keep a journal of their interaction with and growing awareness of communication technologies in their day to day lives. The journal will be submitted at the end of the semester and serve as a further means of student assessment.

Topics
- Media history
- Media, the individual and society
- Media development in Europe
- Media development in North America
- Media development in the East
- Media and the economy
- Media and the financial market
- The internet
- Video games
- Theoretical and critical approaches to communication media
- Methods for studying communication media

Assessment
Over the course of the semester, each student will give two group presentations of 30 minutes on the texts and media studied in the week of their presentation. As well, students will write a mid-term, take-home exam based on their reading and class discussion. Students will also be required to submit a final paper of 8-10 pages, discussing one or more of the topics studied during the semester, in terms if their social development and impact.

HUM152 Multimedia
Credit points
6 ecp

Prerequisites
None

Learning Outcomes
Students will become acquainted with the meanings and possibilities of multimedia production, including how multimedia production has developed and how it is currently used.

Course description
This course will begin with a brief history of the development of multimedia production since the 1960s when the concept became a standard feature of culture and particularly popular culture. Students will explore the various meanings of multimedia production over time from live performance combining music, cinema, experimental lighting and performance art to its current meaning as an electronically delivered combination of media including video, still images, audio and text that may be accessed interactively.

Students will gain an understanding of how people interact with multimedia production, the knowledge that is required of the multimedia "spectator", the reception of multimedia, and the impact of multimedia on the interacting subject. One of the aims of the course is also to acquaint computing students with computer-based multimedia systems and as well as potential designers who may work with virtual worlds, immersive virtual reality, interactive multimedia, responsive installations, computer and web animation, web 3D broadcast media, live streaming audio, or interactive graphics.
Topics

- Beginnings and the rise of multimedia production
- Live media
- Electronic media
- Digital media
- The "spectator"
- Design
- Computer-based multimedia systems
- Interactivity
- Virtual reality
- Interactive graphics

Assessment
Over the course of the semester, each student will give two group presentations of 30 minutes on the topic(s) studied in the week of their presentation. As well, students will write a mid-term, take-home exam based on their reading and class discussion. Students will also be required to submit a final paper of 8-10 pages, or project and project guide or description, that addresses at least two of the topics studied during the semester.

HUM161 Text and Artefact in Cultural Theory and Practice
Credit points
6 ecp

Prerequisites
None

Learning Outcomes
This course will introduce students to the historical development of methods and techniques employed in analysing cultural artefacts (for example (art) historical, filmic and literary objects). Moreover, students will learn how to apply these methods to various artefacts of their choice. Students will also learn to think critically about how certain objects come to be seen as cultural artefacts and why.

Course description
Students will study the history of the interpretation and understanding of cultural objects including methods such as hermeneutics, close reading, cultural analysis,

content analysis, narratology, psychoanalysis, gender studies, structuralism and deconstruction. As the course progresses, students will be required to analyse literary and historical texts as well as art objects (e.g. painting, sculpture, video) and film (e.g. narrative, documentary). In so doing, students will also investigate the role that culture, as it has been defined at various junctures in history, has played in how we approach texts, art objects and films as artefacts. In this section of the course, students will also critically examine the process of canon formation, considering questions such as how notions of high and low culture and the canon have developed over time. Students will also examine the role that history has played in the construction of culture, as well as that of cultural institutions such as the museum.

Assessment
Over the course of the semester, each student will be asked to keep a journal of the artefacts that s/he has encountered, including films, literary texts and art objects, and to discuss them briefly in relation to some of the texts we have studied in class. Students will give two group presentations of 30 minutes on the texts studied in the week of the presentation along with examples of the students' own choosing. Students are encouraged to draw examples from their journals. As well, students will write a mid-term, take-home exam based on their reading and class discussion. Students will also be required to submit a final paper of 8-10 pages, or a project and project description of 5-10 pages, discussing at least two of the theoretical clusters addressed during the semester as well as an artefact(s) or object(s) of their choice.

HUM162 Standard Methods in Historical Analysis
Credit points
6 ecp

Prerequisites
None

Learning Outcomes
Students learn the standard methods of historical analysis and research, such as data collection, and discourse and content analysis, as well as the history of the discipline itself.

Course description
In order to interpret texts and objects in terms of their functions and objectives, students will become acquainted with the basic problems of historical analysis, such as situating a text or object in its correct chronological and geographical contexts, as well as identifying it with particular authors or producers. Students will also learn how the discipline of history evolved over time and will look specifically at the work of historians such as Leopold Ranke, in the 19th century, and the French Annales School during the 20th century. Special attention will also be paid to the work of Fernand Braudel and other historians who argued for more scientific rigor in the discipline, along with the inclusion of mathematical evidence and a social-economic and geographic framework to supplant subjective opinion. The course will also consider the work of more recent historians, such as Philippe Ariès and Michel Foucault, who, in an effort to enrich historical knowledge with those areas of human existence that were previously ignored or overlooked, have described the history of everyday life. Finally, the course will address the work of the so-called New Historicism and the challenge it has presented to traditional notions of history and history writing. In a final section, students will learn the history of the discipline itself, along with standard methods of historical analysis and research, including data collection, discourse and content analysis.

Assessment
A midterm exam, two interim assignments involving archival research, and a final paper.

HUM221 Adaptation Studies and Historical Heritage Film
Credit points
6 ecp

Prerequisites
None

Learning Outcomes
Students will gain an appreciation of the role that adaptation has played in cultural history, and its specific relationship to literature, film and new media. Students will also learn about various kinds of adaptations and the methods currently used to approach and analyze adaptations.

Course description
Adaptation has always played a leading role in cultural production, albeit a role that has been given a minor status or has been seen as vulgar or commercial, at least since the 18th century. After a brief look at the issue of imitation and adaptation in classical Greek writing on aesthetics, the course will progress historically through the early modern period to 18th-century Romanticism. Following from this period of celebrating originality as the expression of the uniquely gifted individual, the course will go on to analyze evolving notions of originality since Romanticism, and the "deconstruction" of concepts such as originality and the individual in Postmodernism and the present moment. In so doing, the course will challenge students to think about what it means to view and interact with art at a time when adaptation is acknowledged, praised, denied and derided as the dominant mode of cultural production.

Students will also become familiar with particular genres of adaptation, and particularly heritage films based on the "great novels" of the 18th, 19th and 20th centuries. In this case, special attention will be placed on the politics and economics of producing historic costume dramas. Other topics addressed will include adaptations from other media into film (comic books, video games, TV series), as well as prequels, sequels and remakes.

Topics may include
- Aristotle and Plato: Mimesis
- Boccaccio, Chaucer and the art of retelling
- Shakespeare and adaptation
- Enlightenment adaptations
- Romanticism and originality
- Victorian retellings
- Word and image in the 19th century
- Modernist art for art…again
- Postmodernism and auto reflexivity
- Heritage film and "chick-flicks"
- Prequels, sequels, and remakes

Assessment
Over the course of the semester, each student will give two group presentations of 30 minutes on the texts studied in the week of the presentation along with examples of the student's own choosing. As well, students will write a mid-term, take-home exam based on their reading and class discussion. Students will also

be required to submit a final paper of 8-10 pages, or a project and project description of 5-10 pages, discussing one or more of the theoretical clusters discussed during the semester, as well an adaptation(s) of the student's choice.

HUM222 Fiction and Finance through History

Credit points
6 ecp

Prerequisites
HUM 161 Text and Artefact in Cultural Theory and Practice for Humanities majors. Any 100-level Humanities course for students from SSC or SCI majors.

Course description
This course focuses on of the role of the economy and its representation in literature, from the early modern period through the 20th century, in a comprehensive and sequential manner. Special attention will be paid to how various economic models, such as the financial market at specific junctures in its history, and financial instruments, such as paper money, mortgages, stocks and bonds, and insurance, intersect with fiction in terms of both form (i.e. the novel) and content (e.g. how mortgages and the marriage market are represented in *Pride and Prejudice*). The course will also address the role of literature as a popular product in the market and topics such as the development of the concept of authorship; the history of copyright law; writing and the literary career; the production and serialisation of literature; branding and literature; marketing sensational literature; and product placement in literature. Authors may include but are not limited to: Shakespeare, Aphra Behn, Susanna Centlivre, Pieter Langendyk, Henry Fielding, Daniel Defoe, Jane Austen, Emile Zola, Anthony Trollope, Edith Wharton, William Dean Howells, Heinrich Böll, Paul Auster, Don DeLillo, Martin Amos, Adam Smith, Sandra Sherman, Walter Benn Michaels, Mark C. Taylor, Georges Soros, Gerda Reith, Charles P. Kindleberger and Geoffrey Clark.

HUM223/SSC Literature and the History of the Body

Credit points
6 ecp

Prerequisites
HUM 161 Text and Artefact in Cultural Theory and Practice for Humanities majors. Any 100-level Humanities course for students from SSC or SCI majors.

Course description
In this course we will study literature that specifically addresses the body and particularly the body and pathology. This will entail close readings of literary texts that describe illnesses such as the plague, consumption, tuberculosis, HIV/AIDS and cancer, as well as texts that represent various forms of mental disease. These readings will enable a discussion of constructions of illness and pathology in various discursive and cultural contexts from the early modern period to the present day. We will also study texts on the construction of facilities for restoring and maintaining physical and mental health (hospitals, asylums, sanatoria), as well as on the economic and ideological factors that influenced the ways in which such institutions have been set up and organized. Attention will also be given to the poetics of knowledge and literary dimension of medical texts themselves. Among the literary works to be discussed will be texts by Giovanni Boccaccio, Thomas de Quincey, Thomas Mann, Gustave Flaubert, Virginia Woolf, Michael Cunningham, Ken Kesey, André Breton, Richard Powers, Jeannette Winterson and

Amitav Ghosh. Theoretical readings will include texts by Michel Foucault, Susan Sontag, Elaine Scarry, George Rousseau, Stephen Greenblatt, Elaine Showalter and Sander Gilman.

HUM231 The Cinematic City

Credit points
6 ecp

Prerequisites
HUM 161 Text and Artefact in Cultural Theory and Practice or HUM 111 Introduction to Cities and Cultures theme course. Any 100-level Humanities course for students from SSC or SCI majors.

Course description
Much narrative film pays close attention to the city as a location, and film has often been mobilised to promote nationalism, economic policy, various war efforts, and tourism. In glamorous contemporary productions such as *Ocean's 12*, *Casino Royale* and *The Bourne Identity*, urban locations are dispersed around the world and communicate the ideology of globalisation and world citizenship, while films such as *Dirty Pretty Things* ask viewers to think about these same issues politically and critically. At the same time, the film industry has come to define and shape cities such as Hollywood, Berlin and Paris and this course will also examine the impact of the industry on urban centres. Likewise, film festivals have become an important defining element of the urban economy of cities like Cannes, Toronto, Berlin and Rotterdam, and this course will address how cities position themselves as film festival centres. The course will also include a section on so-called "run-away" productions and the politics and economics behind using cities like Melbourne, Toronto and Montréal to represent other cities as different and distinctive as New York or Chicago.
Students will apply what they have learned in the Cities and Cultures theme course and the methods they have learned in "Text, Artefact and the Role of Culture and History" to discuss the role of the city in film and cinema in the city.

HUM232 Film and the Body

Credit points
6 ecp

Prerequisites
HUM 161 Text and Artefact in Cultural Theory and Practice for Humanities majors. Any 100-level Humanities course for students from SSC or SCI majors.

Course description
The body is the focal point of cinema, whether as the implied but absent observer behind the camera, or as the fetischized object of the gaze. This course examines how film deals with various kinds of bodies—the female body, the pathological body, the macho body, the child's body—and the relationship of these kinds of bodies to film genres such as horror, melodrama, comedy, film noir and heritage film. The course also examines how film represents various conceptualisations of bodies at key historical junctures, such as the plague-ridden early modern body in comedy; the pathological, mechanised body (i.e. Frankenstein) late in Enlightenment melodrama; the female body as fetish in film noir; the corseted female body in heritage film; or the surgically and prosthetically enhanced contemporary body in blockbuster adventure films.

HUM241 Representing the City through History

Credit points
6 ecp

Prerequisites
HUM 161 Text and Artefact in Cultural Theory and Practice for Humanities majors. Any 100-level Humanities course for students from SSC or SCI majors.

Course description
From Dutch genre painting of the 17th century to the contemporary video installation, and from the Parthenon to Italian depictions of confraternity processions, the city has served as a locus, a central theme and as an image in art. During antiquity, the town was essentially an indication of the community of citizens living in it, and its depiction stressed the activities that defined these mutual relations; in the early modern period, paintings of city squares, town halls and bustling market places communicated messages of (inter)nationalism and commerce; and finally, more recent art tends to communicate the city as locus of, on the one hand, modernity and progress and on the other hand as a form of alienation and a critique of both the homogeneity and the violence of urban living. During this course, the focus will lie on methods of researching and interpreting works of art, and the use that is made within art history of approaches derived from several other disciplines such as sociology and history. In this course, a combination of perspectives will be applied in order to understand, on the one hand, changes in the function of art and what it represents, and on the other hand, the historical shifts that constitute the 'city'.

Assessment
During this course, several assignments, both written and oral, will lead up to a final paper.

HUM242 Art and the Subject

Credit points
6 ecp

Prerequisites
HUM 161 Text and Artefact in Cultural Theory and Practice for Humanities majors. Any 100-level Humanities course for students from SSC or SCI majors.

Course description
The human form is the focal point of much artistic production, typified by genres such as portraiture and the work of sculptors from the ancient Greeks to Rodin. This course will study aesthetic expression and the body over several centuries in Europe, paying close attention to parallel developments in the science of anatomy and works of art such as Rembrandt's *Anatomy Lesson* and Gunther von Hagens' *Body Worlds* installations.

HUM251 Perspectives on Games

Credit points
6 ecp

Prerequisites
None

Course description
This course will examine video games from a number of critical perspectives, beginning with the issue of game playing subjectivity and how the subject at play has been, and continues to be, discursively constructed. The course will include an historical look at how digital games have developed from and alongside other games, such as card and board games, as well as how games came of age by remediating and being remediated by film and TV. The course will probe into the future, looking at developments such as group and clan formation in the field of online gaming, mobile gaming and pervasive gaming. Students will also be asked to analyse how war, gender, violence and ethnicity are represented in games, and further how these representations impact on subjective engagement. Finally, the question of subjective engagement in video games will be approached through theories of narrative and interactivity that address structural elements such as first and third person shooters, time manipulation and representation, open-endedness and linearity. While discussing a wide range of texts from different fields of study, students will also return to the question of how the interaction of technology, culture and the marketplace impact on our experience of games.

HUM261 Information Visualisation
Credit points
6 ecp

Prerequisites
None

Course Description

This course will focus on methods for visualizing large collections of multivariate data (numbers, symbols), textual data, and multimedia data (images, video) to reveal patterns and gain new insights into massive, dynamic, ambiguous, and sometimes conflicting data. Students will also learn to detect the expected and to discover the unexpected.

Students will learn how analytical reasoning is facilitated by interactive visual interfaces with diverse applications in science and business and how the results are effectively communicated, by studying literature, by critically evaluating existing visualizations and by designing and developing their own models. Special emphasis will also be placed on techniques that are optimally geared towards the qualities and limitations of the human perceptual system.

HUM262 Narrative across Media
Credit points
6 ecp

Prerequisites (For Humanities Students: Text and Artefact in cultural Theory and Practice)
None

Learning outcomes
Students will acquire a basic knowledge of the central concepts pertaining to narratology along with the ability to apply these concepts to discourses in various media. Students will also gain an understanding of both the opportunities and the constraints of different media for telling stories.

Course description
Narrating stories is the activity *par excellence* by which we make sense of our lives. The study of story-telling, narratology, is therefore a central discipline in the academic curriculum. The systematic analysis of stories has a long tradition in literary studies, but over the past 25 years it has considerably branched out. Film and comics are primarily story-telling media, but there are also narrative dimensions in poetry, paintings, and games. However, as Marshall McLuhan famously pointed out, "the medium is the message," that is, a shift in medium and thus in the modalities it draws on (written language, spoken language, visuals, music, sound, gestures, and so on) inevitably affects the contents of a story. Understanding the pertinent dimensions of story-telling (including narrative agency, focalization, characterisation, and the representation of time and space) will be an indispensable skill for assessing how a story in a particular medium, and in a particular socio-cultural context, can have or acquire meaning.

HUM263 Texts and (Moving) Image
Credit points
6 ecp

Prerequisites
HUM 161 Text and Artefact in Cultural Theory and Practice

Course description
This course forms the second half of the methods course "Text, Artefact and the Role of Culture and History," and places greater emphasis on film and digital media. Students will learn methods that have been developed in order to discuss and analyse texts, images, film and digital media. These methods will include hermeneutics, psychoanalysis, close reading, structuralism, content analysis, deconstruction, narratology, gender theory and feminism. Students will also develop their own projects for this course and be required to participate actively by showcasing their own work. Students will learn to apply specific theories and analytical tools in the appropriate context, rather than simply using the same theory and tools in all contexts. Furthermore, students will learn to motivate their choice for a particular "theoretical lens" and to argue for its importancein relation to their chosen audiovisual object. The objects for analysis may include but are not limited to advertising, music video, installations, film, painting, and games.

HUM264 History II
Credit points
6 ecp

Prerequisites
HUM 162 Standard Methods in Historical Analysis or HUM 111 Introduction to Cities and Cultures theme course

Course description
This course introduces students to the major political, religious, economic, social and scientific developments in Europe from the end of the Middle Ages, through the Renaissance, the Reformation, and the Scientific Revolution, to the Enlightenment. Applying the knowledge of history they have acquired from courses across "Cities and Cultures," and the research skills learned in "Standard Methods in Historical Analysis," students will explore the history of ideas throughout this period of enormous change. The course will focus especially on how ideas concerning power; knowledge, truth, and beauty; material wealth and 'progress;' social morality and justice; cultural, national, and European identities;

God and humankind; and everyday life shifted at different times. Students will develop their own critiques—and judgments—about these historical periods, and will also be actively encouraged to assess how the ideas that developed in the middle of the last millennium are still used (and perhaps abused) today.

HUM265/SSC Addiction and the Modern Subject

Credit points
6 ecp

Prerequisites
None

Course description
How and why did mass-consumption of drugs enter the modern world? Or, can the world be called modern without psychoactive substances and their use? In this course we will discuss psychoactive substances (from alcohol and opiates, to valium and party drugs) as well as psychoactive behaviour (gambling, gaming, shopping). Beginning with intoxication in pre-modern ritual and religion, the course will cover the European drug trade since the 17th century and the explosion of substance use in the West during the 19th and 20th centuries. Of special interest will be reactions to this 'psychoactive revolution', such as the spread of temperance movements, culminating in the present "war on drugs". Also in question will be the term "addiction" itself, how it has been defined over time, and what kind of "addicted" subjects it describes. Included will be social aspects of intoxication and addiction (gender, class, migration, work); as well as the history of addiction treatment, and cultural representations of drug use. The course feeds into the theme of subjectivity developed in "Cities and Cultures," and will use a mixture of primary sources (novels, movies, autobiographies) and scientific literature. Authors may include but are not limited to: Thomas de Quincey, David T. Courtwright, Caroline J. Acker, William S. Burroughs, Virginia Berridge, Timothy Leary, Joyce Goggin.

HUM311 Theme course: The City and its Problems (Cities and Cultures)

Credit points
6 ecp

Prerequisites
HUM 111 Introduction to Cities and Cultures theme course.

Course description
In this course students will reflect on what they have learned in the courses in "Cities and Cultures", in order to discuss contemporary urban issues such as immigration, pollution, over-crowding and violence.

The course addresses the formation of cities in the west from the early modern period to focus on the current global moment. Special topics will include urban specialisation and the cultural, economic, religious and political dynamics that subtend the process of city foundation and formation. Students will develop a final project such as a film, a workshop or a service learning project that concerns Amsterdam and some of the urgent issues that this and other European cities now face.

HUM321 Modernism and Postmodernism in Literature and Theory

Credit points
6 ecp

Prerequisites
Text and Artefact in Cultural Theory and Practice for Humanities students.

Learning Outcomes
Students learn to identify the characteristics of literary modernism and postmodernism and their narrative representation, while discovering the deeper philosophical, cultural, and economic implications of this major paradigm shift. Students will also become acquainted with the basic tenets of theories that define modernism and postmodernism including structuralism, poststructuralism, and deconstruction. This will include a consideration of attendant issues such as modern and postmodern constructions of subjectivity.

Course description
In this course we will read some of the major texts that define literary modernism by authors such as James, Faulkner, Woolf, Joyce, Eliot, Kafka, Mann, Proust and Gide, while being mindful of the historical, political and economic contexts in which they were written. Students will learn to identify features of typically modernist texts such as fragmentation and alienation. We will also discuss how these features relate to modernism in media such as painting and early film, through authors such as Veblen, Benjamin, Lukacs, Simmel, Levi-Strauss, and Todorov. The course will then move on to address the paradigm shift to postmodernism that occurred roughly in the 1960s and 1970s though the work of literary authors such as Borges, Pynchon, Butor, Sollers, Auster, Delillo and Böll. This part of the course will be supported by a look at the work of theoreticians whose work has addressed or defined this shift including Harvey, Lyotard, Barthes, Derrida, Taylor and Culler.

Topics

1. Modernity and modernism
2. Fragmentation and the subject
3. Velocity and the modern subject
4. Modernism and urban living in the literary text
5. The paradigm shift: Barthes and Foucault
6. What is postmodernism
7. What is a text?
8. Deconstruction and open-endedness
9. The end of history and narratives of the apocalypse

Assessment
A midterm exam, class presentations and debates, and a final paper.

HUM331 Film Auteurs

Credit points
6 ecp

Prerequisites
Text and Artefact in Cultural Theory and Practice and/or HUM 263 Text and (Moving) Images for Humanities students.
Any 100-level Humanities course for students from SSC or SCI majors

Course description
The concept of the *auteur* has travelled from literature to film and has greatly evolved along the way. In this course we will discuss how the concept of the film auteur has been defined over history, and how the *auteur* is distinguished in film studies, especially around the notion of modernism. We will also analyse films as a function of this concept, by such *auteurs* as Hitchcock, Antonioni, Tatie, Fassbinder, Almodóvar and Scorcese.

HUM341 The Culture Market and Industry
Credit points
6 ecp

Prerequisites
Text and Artefact in Cultural Theory and Practice for Humanities students.
Any 100-level Humanities course for students from SSC or SCI majors

Course description
Although art has long been seen as occupying a separate sphere from that of industry and the market, the latter are of the utmost importance for both the creation and dissemination of culture. Beginning with the Venetian and Dutch art markets in the 17th century, and progressing comprehensively and sequentially to the present, students will learn about the relationship that has developed between economics and culture and its legacy in Hollywood and Bollywood, film festivals, itinerate exhibitions, museum gift stores and television.

HUM351 Mediated Communication and Games
Credit points
6 ecp

Prerequisites
HUM 152 Multimedia, HUM 151 Communication, SSC 191 Introduction to Information, Communication, Cognition theme course, SSC 192 Psychology, HUM 262 Narrative Across Media or HUM 251 Perspectives on Games

Course description
Computer games will be studied from a number of perspectives including a grounding in the history of games and the games industry. Other topics will include subjectivity and interaction; on-screen and off-screen currencies; the relationship between work and leisure; serious gaming; labour in video games; design and player engagement; MMORPGs; identity, uses and effects; avatars and gender.

HUM352/SSC Media Psychology
Credit points
6 ecp

Prerequisites
SSC 192 Psychology

Learning Outcomes
The course aims to provide students with a thorough grounding in theory and research and an appreciation of the emerging field of media psychology.

Course description
The course familiarises students with the psychology of media uses, processes, effects, and applications. Topics discussed are the psychological antecedents and consequences of mass media, especially television, computer networks and the internet. Nearly all aspects of psychology and social science have relevance to media studies, especially cognitive science, social psychology and child development.

HUM361 Innovation and Tradition
Credit points
6 ecp

Prerequisites
Standard Methods in Historical Analysis

Course description
This course will familiarise students with major political, religious, economic, social and scientific developments in Europe from the Enlightenment to the 21st century.

HUM362 Urban Politics and Religion
Credit points
6 ecp

Prerequisites
Standard Methods in Historical Analysis

Course description
t.b.a.

Description of Courses in the Social Sciences

SSC111 Theme course: Introduction to Social Policy

Credit points
6 ecp

Prerequisites
None.

Course Description
In the introductory theme course we will focus on the question; how should we organize ourselves?. A legal, economic and moral perspective will be taken on this fundamental question. We will be looking at the role of individuals in relationship to groups: can and should groups require individuals to conform to their norms? When should individuals be free to follow their own preferences and when should the group impose collective ones?

From an economic point of view, what are the tradeoffs involved between individual freedom to decide versus group control and collective choices? When do individual decisions lead to outcomes with unintended or undesired outcomes? What are the circumstances under which individuals may be better off constraining their choices through delegation to central authority?

The legal part will look at anti-discrimination law in various contexts, such as discrimination on the grounds of sex, nationality, race and religion. The desire of individuals to express themselves, and to make choices about those they work and live with, and form their own closed sub-groups, has to be balanced against the desire of society as a whole to prevent divisions and conflicts and to protect the vulnerable. What are the moral beliefs underlying this, and how does law reflect them?

The third part of the theme course will examine the normative dimension to these issues. We will look at whether groups have rights and how these may come into conflict with those of the individual. In particular, we will explore the issue of our moral obligations to individuals in our society and also to those outside our borders.

Assessment
There will be a mixture of group and individual assignments, class participation, and a final exam.

SSC121 Sustainable Urban Development

Credit points
6 ecp

Prerequisites
None

Learning Outcomes

Course description
To be determined.

SSC131 Economic Thought in a Historical Perspective

Credit points
6 ecp

Prerequisites
None

Learning Outcomes
- Students gain an understanding of fundamental questions concerning the development of economics in relation to other (social) sciences.
- Students gain understanding of the development of methods in the social sciences, economics in particular.
- Students are able to situate economics as a discipline in social and historical context.

Course Description
Over the past centuries economics has changed from a largely verbal discipline that studied human agency in commercial settings to a highly mathematical discipline that has come to incorporate increasingly more instruments from the scientific toolbox (such as statistics and laboratory practices). Indeed, some contemporary practitioners identify economics with a tool-based discipline that can design market systems in a manner similar to how engineers construct technical systems, thereby discarding the rich intellectual histories that still inform many of the concepts and theories used by economists.

The purpose of this course is to retrace these histories and to see how modern economics emerged from them into its present form. To do this, we will put the development of economic ideas, theories, and methods in their appropriate historical context. The course will emphasize the incisive change of the economic discipline from the interwar to the post-war period. The primary aim of the course is to enable students to historically assess the merits and limitations of contemporary economics in addressing major economic and social questions.

Assessment
Written assignments on the text materials, oral on book.

Course Reading
- Roger E. Backhouse, 2003, "The ordinary business of life: A history of economics from the ancient world to the twenty-first century," Penguin. pp. 328.
- Selected primary and secondary texts

SSC141 Law and Society

Credit points
6 ecp

Prerequisites
None

Learning Outcomes
After following this course students should:
Understand that modern legal ordering can be seen as the result of a historical process of rationalisation;
Understand that modern legal ordering is strongly influenced by legal positivism;
Have knowledge about the basic features of modern legal systems;

Be able to critically reflect on the function of law in political communities, both on the national and the international level;
Have had training in the following legal skills: consulting sources of law, reading judicial decisions, interpreting legal rules and arguining about a legal claim;
Have developed the following academic skills: analytical reading of primary and secondary texts, writing a paper, giving a presentation, independent thinking and participation in discussion.

Course description
This course introduces law as a human artifact that is used to establish order in society. This use of law - also called 'legal ordering' - will be addressed in three perspectives. In the first part of the course the essence of legal ordering will be studied by tracing its historical development. How did communities first start to use legal rules and concepts? Why is this often associated with the term 'formalisation'? What is the purpose of the ongoing attempt to codify and systemise legal rules in the form of written constitutions, statutes, treaties and regulations? Following Max Weber's sociology, it will be argued that the concept 'rationalisation' is crucial to understand all this. Law itself will be introduced in the second part of the course. A body of basic legal knowledge will be presented, answering questions such as: What is the basic structure of a modern legal system? What types of law do exist? How are lawyers supposed to find law? What is the basic structure of international law, and what are the specific features of the legal system of the European Union? Furthermore, students will be trained in a number of basic legal skills: consulting the sources of law, reading a judicial decision, interpreting legal rules and arguing to defend a legal claim.
The third part of the course is devoted to critical reflection on present day legal ordering.

SSC151 Classical and Modern Political Thought
Credit points
6 ecp

Prerequisites
None

Learning Outcomes
Students become acquainted with the ideas and arguments of key political philosophers, and learn to argue their own interpretation of canonical texts. They will become aware of the ongoing dialogue throughout the history of political thought on key questions such as: What is justice? What is just law? What constitutes political power? What is good statesmanship? What is liberty? What are the foundations of democracy? The texts we read in this course will challenge the students and help them to ask questions about politics that they may not ask otherwise.
Key learning outcomes:

- Knowledge of ideas and arguments of prominent political philosophers.
- Insight into the ongoing dialogue between prominent political philosophers throughout history.
- Ability to analyze and reproduce philosophical arguments.
- Ability to critically reflect on and apply philosophical arguments.

Course description
This course will introduce students to the main problems of political thought by means of studying primary texts, often in translation, written by key political philosophers. The first part of the course introduces students to ancient and

medieval conceptions of politics and human flourishing, particularly in Plato and Thomas Aquinas. In the second part of the course we will study the realist conception of politics in Machiavelli and the social contract theories of Thomas Hobbes and John Locke. The third part of the course deals with the liberalism of John Stuart Mill. For the final paper, students choose a twentieth century political philosopher, compare his or her ideas to those discussed in this course and/or apply his or her work to a contemporary political problem. This course is particularly relevant for students interested in politics, ethics, philosophy, or law.

Assessment
Students will complete a series of short papers.

SSC171 Classical and Modern Sociological Thought
Credit points
6 ecp

Prerequisites
None

Learning Outcomes
Students gain an understanding of fundamental questions about society and societal development, such as social cohesion, social (in)equality, and social change.

Course description
●globalisation
●individualisation
●welfare state and the nation state
●family, school, church
●political parties and trade unions
● authors: Bourdieu, Putnam, Giddens, and Ritzer

In this course we investigate the implications of the processes of globalisation and individualisation for existing social institutions and relations (the welfare state, the nation state, the family, the school, the church, political party, the trade union) and what changes will occur or what new institutions or relationships will replace the old ones.

In the first two weeks we present an overview of the field of sociology in terms of the processes of globalisation and individualisation, with special reference to the concepts of inequality, solidarity, identity and rationality. Then we present contemporary theorists, whose theories and research shed new light on these processes. We first discuss Bourdieu, the author of the book *Distinction*, on the changing aspects of inequality, the importance of cultural capital and social capital, and then Robert Putnam, the author of the book *Bowling Alone*, on solidarity, concerning the fear that we are witnessing the decline of community. We also discuss Anthony Giddens, the author of the book *Modernity and Self-identity*, on the problems of constructing a sense of self in a world characterised by globalisation and individualisation. Finally, we discuss George Ritzer, the author of The *McDonaldization of Society*, on the new course that rationalising process has taken in contemporary society.

After that we turn to study the classical theories that were the sources of inspiration for these contemporary sociologists. Bourdieu's theory is seen as a critique of the model of Karl Marx, but also as a continuation of some elements in Marx's class-theory. Putnam is inspired by the questions that Emile Durkheim

discussed around 1900, the questions concerning the structural cohesion in modern society and the apparently decreasing importance of central values that bind people together. Giddens has raised questions that were treated for the first time in the work of Georg Simmel: how do we develop a coherent sense of self in an atomising urban and secular social milieu. And Ritzer is a self-confessed admirer of Weber's theory of the rationalising processes in contemporary society. He thinks that the principles that Weber discerned can still be observed today, but they manifest themselves in other places (not only in the government bureaucracy, but also in the supermarket) and that they sometimes have taken new and unexpected forms.

In the final two weeks we return to the central themes and discuss some empirical research that has been done on the questions of globalisation and individualisation, but this time enriched by our excursions in the fields of classical and modern sociological theory.

Assessment
Students will complete a number of assignments and take a final exam.

SSC181 Classical and Modern Anthropological Thought
Credit points
6 ecp

Prerequisites
None

Learning Outcomes
Students gain a broad appreciation of diverse cultural settings and gain a new perspective on their own contemporary society. Students will be introduced to the ethnographic method in a variety of settings.

Course description
●the ethnographic method
●classical texts from anthropology
●the anthropology of modernity

Anthropologists strive to understand societies around the world in their own context. We will see how the ethnographic method, originally developed to study so-called "exotic" societies, can help us understand the complexities of the multiple yet intersecting social worlds around us.
With more than half of the world's population living in cities (over one billion in the slums of the cities of the South), it becomes clear that the cultural diversity of human perspectives, distinctions and practices are inseparable from other social, economic and political processes and structures. Thus, the work of anthropologists is embedded in extremely varied settings exploring diverse aspects of human activity, be it migration, gift-exchange, professional trainings, violence, healing or internet dating.
In this introductory course to anthropology, we will look into some of the classical anthropological texts to get a sense of the history and debates that shaped the discipline over the years. Additionally, we will explore several selected topics, the selection of which is aimed to illustrate how contemporary anthropologists go about doing their work: the kinds of questions they ask, the types of approaches and methods they utilise, and the sort of conclusions they reach.

Assessment
Students will complete a number of assignments and take a final exam.

SSC191/SCI/HUM Theme course: Introduction to Information, Communication, Cognition

Credit points
6 ecp

Prerequisites
None

Learning Outcomes
Students will be introduced to the role of information in society, as well as the role of information across disciplines, from computer science to physics, and from linguistics to economics. This course will also be concerned with varieties of information structure (digital data, natural languages, information processing) and natural language structure (syntax, semantics, pragmatics). The course will address the problematics of basic cognitive tasks: perception, memory, language and motor sense. Students will also study the structure of the brain as this relates to the problematics of neurocognition. A portion of the course will also be devoted to the study of social cognition, intelligent interaction, cognitive psychology and cognitive neuroscience.

Topics

1. Information structure
2. Digital data
3. Natural languages
4. Information processing
5. Syntax
6. Semantics
7. Pragmatics
8. Neurocognition
9. Social cognition
10. Intelligent interaction
11. Cognitive psychology
12. Cognitive neuroscience

Course structure
This class will meet twice a week and include guest lectures by experts in the various areas we will address.

Assessment
Over the course of the semester, each student will give two group presentations of 30 minutes on the topics studied in the week of the presentation. Students will write a mid-term, take-home exam based on their reading and class discussion. Students will also be required to submit a final paper of 8-10 pages, discussing at least two of the topics studied during the semester in combination with an object of study of their choosing.

SSC192 Psychology

Credit points
6 ecp

Prerequisites
None

Learning Outcomes
In this course students will become familiar with key concepts, theories and classical studies in psychology.

Course description
In this introductory course students will become acquainted with the methods and theories that are key to the study of psychology, along with their development. The course begins with an introduction to the scientific methods and technologies that ground psychology as a discipline, such as observation, reaction time experiments and brain imaging. Students will also receive an introduction to the psychology of language and, consciousness, emotion and social behaviours.

Topics
1. Scientific methods: aspects of psychological research
2. Psychology of perception
3. Psychology of language
4. Learning, memory and consciousness
5. Motivation and emotion
6. Individual differences and abnormal psychology
7. Social behaviour

Assessment
Presentations, essays and assignments.

SSC193 Linguistics
Credit points
6 ecp

Prerequisites
None

Learning Objectives
This course will acquaint students with basic concepts important to various areas of linguistics and the tools used for analyzing the structural properties of human language. Issues under investigation will include how a grammar is structured, how it interacts with non-linguistic systems in actual language use, and how views on language have developed in the history of learning.

Course Description
Of particular importance will be the social sciences perspective on language. On the one hand, language will be approached as a cognitive system. We will explore how the natural sciences bear on the analysis of language ability and the extent of its basis in human biology. On the other hand, language will be approached as a tool used by individuals in society for communicative and cultural purposes. At the end of the course, students will know how to place language within human cognition and will understand how linguists are working towards a satisfying characterization of its properties.

Assessment
Students will write a short paper, give a group presentation and take a final exam.

SSC221 Environmental and Resource Management
Credit points
6 ecp

Prerequisites

Course description
To be determined.

SSC231 Fundamentals of Micro- and Macro-Economics
Credit points
6 ecp

Prerequisites
SSC 131 (Contemporary Economic Thought in a Historical Perspective)

Course description
This course will introduce students to the discipline's major theories, concepts, and methods. Tools for micro- and macro-economic analysis will be developed and applied to a wide range of problems. Students will be expected to gain a more thorough understanding of the market economy, national and international regulation as well as the behaviour of individual consumers, businesses, and governments in the sphere of economics. This course serves as the prerequisite for advanced micro-economics and particular attention will be paid to topics in this area.

SSC232 International Political Economy (IPE)
Credit points
6 ecp

Prerequisites
SSC 131 (Contemporary Economic Thought in a Historical Perspective)

Course description
This course will introduce students to the international system, especially as it pertains to trade and security issues. Central questions to be addressed include:

- How do economic relations between states influence domestic and international politics?
- How is globalization impacting the international system?
- What is the role of international monetary policy and international trade?
- For a state, is economic integration a benefit or a challenge?

Although the course may incorporate important economic tools and concepts, such as game theory and statistics, no prior knowledge of these areas is assumed. Central theoretical developments, such as classical liberalism or Marxism, will also be explored.

SSC233 International Trade, Growth and Development
Prerequisites
SSC 131 Contemporary Economic Thought in a Historical Perspective. SSC 231 Fundamentals of Micro- and Macro-Economics is highly recommended but not required.

Course description
This course introduces students to the important contemporary debate on how trade liberalization affects economic growth, development and inequality. Students will obtain a detailed knowledge of the main concepts and theories on international trade and economic growth and will be able to apply this knowledge to real life cases. Furthermore, students will learn about the concept of development, the prospects for developing countries under globalization and different views on the pros and cons of integration in the world economy. Finally, the course will foster a critical knowledge and understanding of the empirical body of evidence from applied economic research on determinants of economic growth.

SSC241 Comparative Law
Credit points
6 ecp

Prerequisites
SSC 141 (Law and Society)

Course description
This course will provide students with a comparative look at the national legal systems of selected European countries with a special focus on constitutional law. Additional comparisons from major European partners, such as the US, Japan and China, may also be included. Students will gain an understanding of a variety of legal practices, such as legal education, the judiciary, legal interpretation, and the private/public law distinction. Systematic similarities and differences in how states develop and enforce legal order within their borders will be highlighted, allowing students to respond to central, emerging questions in comparative law, such as whether national legal systems are currently converging or diverging in content and approach. The development of core legal competencies, such as legal reasoning, analytic thinking, and the ability to read and interpret legal procedure and case law, will be integral to the course.

SSC242 Human Rights Law and Politics
Credit points
6 ecp

Prerequisites
SSC 141 (Law and Society) OR SSC151 (Classical and Modern Political Thought)

Course description
This is an interdisciplinary course which draws equally from the fields of Human Rights Law and the Political Science. During the introductory part of the course, students will be acquainted with the main principles of human rights law, using Andrew Clapham's *Human Rights: A Very Short Introduction*. The main part of the course will be devoted to an analysis of case law of the European Court of Human Rights, which – in comparison with other supervisory bodies – has the most elaborate jurisprudence. This case law will be consistently related to the political theories on which the Court implicitly relies in its judgements, using Marie-Bédédicte Dembour's *Who Believes in Human Rights*. In the final part of the course, different groups of students will write papers about topics of their own choice, relating them to the material used in the first two parts of the course. Examples of such topics are

- Humanitarian intervention
- Migration
- Indigenous peoples
- Development and human rights
- Human rights and Western hegemony
- The European Court of Human Rights and Russia, or Turkey

SSC251 International Comparative Democracy
Credit points
6 ecp

Prerequisites
To be determined.

Course description
This course will provide students with both a theoretical and empirical introduction to the concepts of democracy and democratization. Students will be introduced to the normative justifications, definitions, and theories of these two phenomena. This theoretical framework will be complemented by empirical studies on such issues as political participation, political parties, interest groups and civil society organizations in the national, trans-national, and international contexts. Although focusing on the topics of democracy and democratization, this course will also serve as an introduction to the core tools and concepts of comparative politics, integrating evidence from different parts of the world and examples from major competing frameworks.

SSC252 The Politics of Difference
Credit points
6 ecp

Prerequisites
SSC 151 Classical and Modern Political thought

Course description
This course will explore how identity and membership in certain social categories affects the individual's relationship to larger political processes. Students will develop a nuanced understanding of the role that race, gender, age, religion and other such categorizations can play in determining an individual's access to power within a society, as well as how these categories are defined and perceived by other groups. Some topics to be covered include: identity politics, the politics of recognition, critical assessments of power relationships found in feminism and race studies. No prior knowledge of political theory will be assumed on the part of the students.

SSC261 International Relations Theory and Practice
Credit points
6 ecp

Prerequisites
100-level course in the Social Systems theme

Course description
How does the world work? This course introduces a variety of practical and theoretical answers to this fundamental question of international relations. Students will learn about the practicalities of key global issues such as foreign policy development, conflict resolution, migration, borders, illicit trafficking, and multinational corporations, using the city of Amsterdam to conduct their own research into their everyday realities. At the same time, students will learn how to frame, understand, and speak intelligently about the contemporary international system by examining core theories and debates about concepts such as The State, Society, Power, Governance, Identity Justice, Conflict, Law, and Trade. As part of an interdisciplinary program, this course draws on a range of disciplines including IR, political science, history, anthropology, law, economics, and philosophy, and aims ultimately to empower students to both understand and act affirmatively within today's world.

SSC262 European Integration
Credit points
6 ecp

Prerequisites
Any 100 level Social Sciences course in the Social Systems theme

Course description
This course explores the historical, political, and economic dimensions of the integration of countries in the European Union. Students will be introduced to the events leading to the adoption of a single currency, different integrative policies at the political level, and the challenges posed by such difficult issues as sovereignty, immigration, and the current economic crisis. Bigger questions, such as the creation of a new European identity, the possibility that the EU represents a distinct alternative to the traditional nation state and the future of further enlargement, may also be touched on.

SSC271 Comparative Modern Societies
Credit points
6 ecp

Prerequisites
SSC 171 (Classical and Modern Sociological Thought)

Course description
This course will provide students with an understanding of how both individuals and groups develop and maintain social structures in societies. Attention will be paid to the sociological aspects of such core concepts as the family, community, work, and religion. Of particular interest will be the interaction of the social, the political and the economical. Students will examine the interplay between social change and political institutions, the distribution of power and authority in the modern state, and the impact of forces such as globalization and urbanization on society. Case studies and research (both qualitative and quantitative) from Europe and other parts of the world will be integral to this course, allowing students to develop a broader perspective on the nature of modern society.

SSC273 Inequality and Poverty
Credit points
6 ecp

Prerequisites
Any 100 level Social Sciences course in the Social Systems theme

Course description
Students will develop an in-depth understanding of the larger societal forces that shape an individual's earning potential, including the role of family, culture, ethnicity and political structures. Case studies and research from different countries, including those in the Global South, will be used to illustrate the various ways in which poverty is understood and perpetuated across the globe. The interplay between poverty and inequality, whether political, social, or economic, will be explored, offering students a broader perspective on what poverty entails. The course will also include an examination of the perplexing discrepancies between development aims, policies and realities. It will highlight some of the systematic differences between countries with different political structures, cultures, and stages of economic development and give an insight into key debates: neo-liberalism; sustainable development; biodiversity offsetting; China's engagement in Africa; mining-conservation partnerships; land tenure conflict; food and financial crisis; resettlement and indigenous environmental knowledge.

SSC281/HUM Community and Society in a Globalised World
Credit points
6 ecp

Prerequisites
SSC 181 (Classical and Modern Anthropological Thought)

Course description
This course has two distinct aims. The first is to introduce students to many of the theories and tools in socio-cultural anthropology, offering them an opportunity to learn how to "think like an anthropologist". It will also serve to broaden their understanding of the phenomenon of globalization and its impact at the community level. In its consideration of various traditional and urban communities (exploring the dynamics of communities evolving in a globalizing world) and the evolution of the individual and community in relation to regions, states, and the world, the course will adopt a case study approach. This course is part of both the Social Systems and Cities and Cultures themes, making it particularly well suited for cross-cutting analyses of these two major areas.

SSC291 Developmental Psychology
Credit points
6 ecp

Prerequisites
SSC 191 Psychology

Course description
This course will provide students with an overview of current developments in Developmental Psychology. Focusing on the intellectual and emotional developments of individuals from infancy to adolescence, the role of experiences and biology will be explored in the development of the individual. Particular

emphasis will be placed on cognitive development, including learning, perception, and personality. This course is part of the Cognition track and will prepare students to take more advanced courses in the area of cognition, cognitive science, and neuroscience.

SSC292 Cognitive Psychology
Credit points
6 ecp

Prerequisites
SSC 191 (Psychology)

Course description
This course is an introduction to the field of cognitive psychology. It will consider a broad range of subjects, from basic perception to complex decision making. It will address questions such as, how do we recognise objects, how do we know where to focus our attention, how do we learn new information, how do we read for meaning, and how do we arrive at certain decisions? The unifying theme behind all this is the fascinating question: How do people think? In Cognitive Psychology, answers to these questions are primarily sought in experimental research and this will be central to the course. We will discuss many experiments, explaining why they were done, what sorts of questions they answer, and what directions they suggest for future studies. This includes brain imaging research that aims to investigate links between particular functions (attention, memory, language, etc), theoretical models, and specific brain structures.

SSC311 Theme course: Globalisation (Social Systems)
Credit points
6 ecp

Prerequisites
To be determined.

SSC321 Comparative Spatial Planning
Credit points
6 ecp

Prerequisites
SSC 121 Sustainable Urban Development

Course description
An in-depth focus on the comparative regulation of geographical space. Topics which may be included: land-use and zoning, the creation of economic clustering, entertainment zones, housing, commercial and industrial development, building height restrictions, designing for urban social interaction, access to the sun, the preservation of green space for recreation, wildlife and bio-diversity.

SSC321/SSC332/SSC342/SSC353/SSC361/SSC372/SSC381
Comparative Public Policy

Credit points
6 ecp

Prerequisites
A 100-level course in Social Systems.

Course description
A comparative analysis of the politics, policy-making process and policies of three or four important policy areas, e.g. the social welfare state, health system, education, environment, transportation, economic development.

Course description
To be determined.

SSC322/SCI311/SCI313 The Environment, Sustainability and Health
Credit points
6 ecp

Prerequisites
A 200-level course in Social Systems.

Course description
A specialised course with broad cross-disciplinarity especially designed for students in the "Energy, Climate and Sustainability" theme and "Health and Well-being" theme, as well as the "Social Systems" theme.

SSC333 Advanced Micro-Economics
Credit points
6 ecp

Prerequisites
To be determined

Course description
An advanced course in the discipline focused on spending and investment by households and business enterprises in the national and international context. It is designed to deepen an appreciation for theoretical refinement, debate and controversy, and methodological choice available to contemporary researchers in the economics discipline.

SSC335 The Promotion and Regulation of the Economy
Credit points
6 ecp

Prerequisites
A 200-level course in Social Systems.

Course description
An advanced course concerning the promotion and regulation of the economy, and its impact on trade and social welfare.

SSC336 Advanced Macro-Economics
Credit points
6 ecp

Prerequisites
To be determined

Course description
TBA

SSC342 International Law
Credit points
6 ecp

Prerequisites
Comparative Law

Course description
An advanced course in the theory, development, and application of international public and private law. Special emphasis is also placed toward the end of the course on an international moot court competition.

SSC342/HUM343 Intellectual Property
Credit points
6 ecp

Prerequisites
Law and Society

Course description
An in-depth look at an area of law which provides for the protection of various intangible property interests, such as copyrights, patents, brands, intellectual property, as well as images, ideas and art. Consideration will also be drawn to the social costs and benefits of such protection in terms of innovation and development by industry, inventors and artists.

SSC343/SS334 International Economic Law
Credit points
6 ecp

Prerequisites
To be determined

Course description
An advanced specialised course concerning the regulation of all forms of international economic flows – trade, capital, services and labour.
Course description
An advanced course designed to give social science perspectives on urban life and the city. The course is designed to consider ideas, approaches and social sciences methodologies beneficial to the "Cities and Cultures" theme.

SSC354 European and International Institutions
Credit points
6 ecp

Prerequisites
International Comparative Democracy

Course description
An advanced course on institutional creation and adaptation, and the development of European and international institutions.

SSC355/HUM382 History of National Civil Rights Movements
Credit points
6 ecp

Prerequisites
A 200-level course in Social Systems.

Course description
An advanced specialised course also taught with the history discipline, concerning various national civil rights movements, and the development of international declarations of fundamental rights, including the Rights of Man, the Helsinki declaration, and EU and UN documents.

SSC363/SSC344 International Crimes
Credit points
6 ecp

Prerequisites
A 200-level course in Social Systems.

Course description
An advanced specialised course focusing on international crime, combining aspects of criminology, international relations and international law. The course studies the role of international legal institutions in international politics. Based on insights developed in IR theory and international legal theory, it examines the interplay between law and politics within existing international institutions, including the International Criminal Court (ICC) and the United Nations Security Council.

SSC372 Violence and Conflict
Credit points
6 ecp

Prerequisites
Any 100 level Social Sciences course in the Social Systems theme.

Course description
This course will explore violence, conflict and reconciliation in different societies. Different sociological theories of these three interrelated ideas will be explored as well as examples from different countries and historical periods.

SSC373 Migration, Integration and Diversity
Credit points
6 ecp

Prerequisites
Any 100 level Social Sciences course in the Social Systems theme.

Course description
This course will look at three interrelated issues: immigration, how immigrants fare in their new societies, and the consequences of our increasingly diverse societies. Students will develop an understanding of the general forces that shape immigration. This will be complemented by an examination of immigrants' socioeconomic integration (e.g. educational attainment, labour outcomes and neighbourhood integration) as well as their cultural integration (e.g. linguistic abilities, family patterns, social networks). The impact of immigration will be explored with a strong emphasis on the effect of different public policies on the perception and management of diversity in the receiving countries. This course will have a strong public policy component and present students with the opportunity to carry out their own research.

SSC374 The Development of Social Policy
Credit points
6 ecp

Prerequisites
A 200-level course in Social Systems.

Course description
An advanced course uniting the study of the social partners (trade unions and business organisations), broad social movements, civil society organisations, with national, transnational and international politics and the development of social policy at various levels of government.

SSC382 Urban Life and Society
Credit points
6 ecp

Prerequisites
A 200-level course in Social Systems.

SSC383/SCI371 Medical Anthropology
Credit points
6 ecp

Prerequisites
To be determined.

Course description
An advanced course in anthropology, focusing on the contributions of anthropology and the social sciences to medical and public health issues such as the delivery of primary care, public health campaigns for infectious diseases, cultural understanding of disease and the ageing process, etc.

SSC391 Theme course: Games and Learning (Information, Communication, Cognition)
Credit points
6 ecp

Prerequisites
200-level courses in the theme

Course description
This course will address the technical side of games (programming, design) as well as their role in communication, social interaction, on-line community formation, and the effects of mediated communication through games.

SSC392/SCI364 Brain and Cognition
Credit points
6 ecp

Prerequisites
SCI152 Introduction to Biology or SCI161 The Human Body or SSC292 Cognitive Psychology

Learning Outcomes
In this course students will become familiar with basic key concepts in (cognitive) neuroscience. The goal of this course is to deepen understanding of the neurobiology of the mind and the aetiology of mental disorders. Students will be encouraged to critically analyse the impact of neurobiology and (psychiatric) brain disorders on society.

Course description
To most of us, the mind constitutes as the very essence of our identity. However, where to draw the line between normal and abnormal, well and ill, an eccentric personality and a schizotypic one, an active, creative fast-thinking personality and ADHD?
This course will explore the neurobiology of the mind. First, students will be provided with a concise overview of the structure and function of the human brain and will be introduced to the basics of neural communication (electrical signalling and synaptic transmission). Next, the focus will be on key concepts in cognitive neuroscience such as perception, memory, attention, emotion and consciousness. A selection of relevant topics will be covered in depth (partly by students' presentations); possibilities include: altered states of consciousness, neurobiology of attraction and partner selection, creativity and mental illness, the gendered brain, the moral brain, free will, empathy and mirror neurons, intelligence, neurobiology of belief, superstition and religion, brain-machine interfaces, cognitive enhancers, mind control (this list is by no means exhaustive).
An important focus of this course is the aetiology of mental disorders, such as ADHD, depression, addiction, autism and schizophrenia, with special attention for the nature-nurture discussion. Students will be challenged to critically reflect on the boundaries between normality and abnormality and the implications for society.

Assessment
Exams, class participation, assignments (presentations, essays).

SSC393 Psycholinguistics
Credit points
6 ecp

Prerequisites
SSC 191 Psychology, SSC 193 Linguistics

Course description
Students will become familiar with theoretical and experimental approaches to the study of language and become capable of understanding human linguistic capacity as the focus of multidisciplinary research.

SCI11 Theme course: Introduction to Life, Evolution, Universe

Credit points
6 ecp

Prerequisites
None

Learning Outcomes
This course covers all of the Natural sciences and it revolves around a central science concept that runs through all the natural sciences: evolution. This concept can be approached from various disciplines emphasizing their interconnections. The student will gain knowledge about the evolution of the universe, the evolution of life and the evolution of complex biological systems and networks as well as the quantitative and mathematical modelling of complex systems.

Course description
Four subjects have been selected for this course:
The Big Bang – setting the stage for the emergence of life

- The first light, the first 300.000 years. Inflation, nucleosynthesis, decoupling and the cosmic microwave background radiation.
- Formation of structure; different energy-matter components and the evolution of the universe. Large scale structure: galaxies and clusters of galaxies. The first stars, formation of heave elements, planets and the solar system.

The Cambrian Explosion - the crucible of creation

- The first tantalizingly elusive traces of life
- Emergence of prokaryotic/eukaryotic cells (and sex), emergence of multicellular life.
- The Cambrian explosion; (hard) body part formation,
- Evolution of flight, appearance of primates, early humans

What is life? – a systems biological approach

- The living cell, the smallest unit of life, but extreme complex
- How do we study/understand complex and dynamic networks of molecules which interact in time and space?
- Generic properties of biological networks
- Quantitative and predicting mathematical models for biological systems.
- the evolution of networks

Brain and Cognition – exploring complex networks

- Neuronal networks
- Artificial neuronal networks
- Self learning systems
- Bayesian networks

Assessment
Students will complete a number of assignments and give a presentation. Students will also take a final exam.

SCI111/SS111 Theme course: Introduction to Energy, Climate and Sustainability

Credit points
6 ecp

Prerequisites
None.

Learning Outcomes
The overall goal of this introductory course is a description of the fundamental challenge humanity is facing in the future, with emphasis on energy, climate and environmental and economic sustainability. It should also convince students that the inherent interlinking between these problems makes a systematic approach mandatory.

Course Description
This course introduces the concept *sustainable development* and discusses its implications within the context of energy policies and climate change. The Earth's energy balance and its carbon cycle are explained, and also their relationships with our climate. Furthermore, a brief assessment of energy technologies is provided. This includes both conventional energy technologies (like fossil fuels) and renewable energy technologies like solar energy, wind energy, bio-fuels (energy-food competition), clean fossils, nuclear energy (fission and fusion) and tidal and hydropower generation

Finally, we will discuss:

- how climate policies (carbon trading, taxes, subsidies) affect the energy market.
- are these policies effective and efficient?
- who are the winners and losers?
- what are the roles of developing countries, small island states, the EU, the US and China in the climate debate?
- are the current and expected climate policies in line with the concept of sustainable development?

During this course students will perform laboratory experiments, participate in case studies derived from projects at PriceWaterhouseCoopers. Additionally, we will organize site-visits to relevant institutions and companies in and outside Amsterdam.

Assessment
Assignments, exams.

SCI113/SS111 Theme course: Introduction to Health and Well-being

Credit points
6 ecp

Prerequisites
None

Learning Outcomes
Health and Well-being, both on an individual and societal level, is an important matter for our global society and human mankind in general. The introductory course focuses on a number of issues that are relevant to ongoing research in the disciplines of Biomedical Sciences, Health Sciences and Social Sciences. The

course provides the student with an interdisciplinary approach to study and enables the student to be able to discuss the present and future challenges in the field of health and disease prevention, both on a local and global scale.

Course Description
A medical symptom or disease phenotype will be the starting point of this course. Examples are: HIV/AIDS, diabetes, multiple sclerosis or others. Based on that particular disease, students will explore the current questions in the various disciplines and discuss possible strategies to tackle this specific health problem.
We will start off exploring the molecular basis of the disease and therapeutics, discuss the impact of public health, policy and health social movements.

- Molecular basis of disease
- Diagnosis and Treatment
- Drugs
- Lifestyle, risk factors and prevention
- Ethics
- Health economics
- Health organizations and movements
- Human rights and health

Next to lectures, assignments and case studies, students will visit relevant institutions in Amsterdam, which play an important role in the health sector related to the course subject. Furthermore we will stimulate our students to participate in related community services.

Assessment
Assignments, exam, community projects

SCI121 Introduction to Geological Sciences
Credit points
6 ecp

Prerequisites
None

Learning Outcomes
Why do continental plates cruise around the globe, what causes ice ages or global warming, what was the impact of the origin of life on the planet, and what is sustainable management of natural resources, including energy and water? In order to answer these questions a basic understanding of Earth Sciences is essential. Students will understand the dimension of deep time in geologic processes ranging between seconds (earthquakes) and hundreds of million years (plate tectonics), including the basic principles of absolute and relative age determination. Students will be able to identify different rock types and minerals and be able to relate these to the dynamic processes in the Earth System.

Course description
This course will introduce the foundations of Earth Sciences i.e. the dimension of time in geological processes, the functioning of the major dynamic systems in the Earth as well as the role of Earth sciences in society and its relations to other disciplines.

Climate change, natural hazards and natural resources, including energy and water, are key issues in modern society. In this course, students will learn the

basics of the Earth's dynamic systems, the climate system, the plate tectonic system and the geodynamo system.

In this course we explore the Earth as a dynamic system. The course consists of a series of lectures accompanied by a practical workshop. The lectures will focus on: plate tectonics; minerals, resources and rocks; volcanism and sedimentation; deformation and metamorphism; time in the geological record; the history of the Earth and the origin of life; the climate system and the hydrologic cycle; surface processes and deep processes; and the interaction between the dynamic Earth System and society. The practical rock determination workshop will focus on identifying minerals and rocks and exploring the geological record stored in them.

Course material

- The Essential Earth: Thomas H. Jordan and John Grotzinger: W.H. Freeman and comp. New York.
- Course manual containing detailed programme, learning outcomes and method, including manual for practical exercises.
- Lecture notes and other information will be placed on Blackboard

Assessment
Students will complete a number of assignments and take a final written exam.

SCI131 Electrons, Waves and Relativity
Credit points
6 ecp

Prerequisites
Calculus I

Learning Outcomes
The course is designed to introduce the concepts of classical electricity and magnetism.

Course description
This course is an introduction to the basics of electricity and magnetism. In the first part of this course, we study the properties of the electric charge and field and see how this fundamental property of matter can be harnessed to build simple DC electrical circuits that are essential in so many technological applications. In the second part, we study the magnetic field without almost any consideration to the electric field. In the third part, we see how the electric and magnetic fields are intimately related to each other by the electromagnetic induction. Finally, in the fourth part, we revisit electrical circuits under alternative current. After this course, the student will be prepared to study electromagnetism, the subject that describes the nature of light and is at the heart of a tremendously important number of different technologies, like wireless and optical communications systems.

Assessment
Students will complete a number of assignments and take a final exam.

SCI132 Introduction to Physics
Credit points
6 ecp

Prerequisites
None

Learning outcomes
In this course, students are introduced to the main concepts and the mathematical formalism of classical physics as well as a number of their key applications.

Introduction to Physics provides a first encounter with central physical concepts such as space, time, conservation of energy, reference frames, gravity, and determinism. Particular emphasis is placed on the connection between deterministic quantities and random macroscopic phenomena. This will be illustrated in an application of random motion to stock market fluctuations.

Course description
The first part of the course develops the principles of classical mechanics. Newton's laws will be discussed and their applications will cover phenomena such as resonance, earthquakes, and hurricanes. Kepler's laws of planetary motion and the phenomenon of Foucault pendulum precession will be derived. A number of other examples discussed include fluid dynamics, music, and sports. The course also includes a self-contained review of the required mathematical background: vector calculus, integrals, and differential equations.

The second part of the course focuses on systems with a large number of particles such as gasses. The concepts of pressure, temperature, and entropy are introduced. The laws of thermodynamics are derived and applied in the discussion of atmospheric pressure, air balloons, heat conduction, refrigerators, heat engines, and evaporating black holes.

Through a number of assignments, students will encounter real-life applications of the materials and be introduced to the more advanced concepts developed in the 200 and 300 courses.

SCI141 Introduction to Chemistry
Credit points
6 ecp

Prerequisites
Calculus

Learning outcomes
The main objective of this course is to provide students with understanding of the basic concepts of chemistry in such a way that they can apply these concepts to solve typical chemical problems in various fields of modern science. This course will focus on the first principles and concepts in the chemical sciences, especially in inorganic and organic chemistry.

Course description
Emphasis will be on a number of essential topics in modern chemistry. In the first part of the course the focus will be on the general principles in the chemical sciences. Special attention will be paid to the structure of atoms and their place in the periodic table and the properties of various types of chemical bonds. Other important topics are the characteristics of gases/liquids/solids, reaction kinetics and acid–base equilibria. The second part of the course will focus on organic and inorganic materials. Typical topics in this part of the course are nomenclature, isomerism, stereochemistry, electrochemistry and chemical bonding theory.

Furthermore, an introduction to the reactivity of organic and inorganic compounds will be presented.

Literature
Steven S. Zumdahl, Chemical Principles, 6th Edition
Houghton Mifflin Company, Boston, New York, 2007

SCI151 Plant Biology and Eco-systems
Credit points
6 ecp

Prerequisites
General Biology

Learning Outcomes
This course will provide the student with modern information dealing with the diverse taxa of plants and fungi and their role in ecological systems. Likewise, students will learn the ways that plants have affected humankind in such areas as agriculture and medicine and how modern biotechnology is revolutionising botany and mycology.

Course description
The diversity of plants is enormous, ranging from microscopic phytoplankton to trees more than 100 metres tall. Using an evolutionary approach, students study this great diversity and follow the development of plants from the earliest photosynthetic single-celled organisms to complex flowering plants. Plant structure and function are discussed in relation to the environment in which plants live. Studies of plant anatomy, physiology and ecology focus on flowering plants. Throughout the course, human uses of plants and plant products are highlighted with key-examples from the Netherlands: from the tulip mania of the 1600's to modern innovations in plant breeding and production.

Literature
Biology of Plants; Raven, Evert and Eichhorn; WH Freeman.
Botany of Desire; Michael Pollan; Random House.

Assessment
Students will complete a number of lab assignments and take a final exam.

SCI152 Introduction to Biology
Credit points
6 ecp

Prerequisites
None

Course description
Biology is the Science of Life. Various themes may connect its diverse sub disciplines like inheritance, evolution, behaviour etc. A strongly unifying theme is the fact that all life is related by descent. This far reaching concept will serve as an umbrella for the following topics:

1. The universality of life. All living organisms share similar design principles. For instance, all organisms consists of cells, have DNA as the carrier if genetic information, use ATP as a currency of energy etc.

2. The diversity of life. Despite all commonalities, there is a huge variation in morphology, physiology, life cycles etc.
3. The feasibility of life. Despite the fact that organisms live in a wildly fluctuating external environment, they are able to maintain a rather constant internal environment.

Many aspects of these topics are well understood in molecular details, and we will thoroughly cover this ground.

Some core questions in biology are:

- What are the commonalities that all life shares?
- How did current diversity evolve in time?
- How can a single cell turn into a billion celled organism?
- How can life cope with the fluctuations of its environment?
- If competition is all pervasive, how can cooperation exist?

Although many of such questions are formulated in terms of organisms or a higher level of integration, all these questions have answers that extend down to the molecular level. So a satisfactory answer will always refer to that level, too.

Literature
Biology; N.A. Campbell and J.B. Reece; Pearson Education.

SCI161 The Human Body – Anatomy and Physiology
Credit points
6 ecp

Prerequisites
None.

Learning Outcomes
The aim of this course is to provide a foundation for more advanced study of anatomy and physiology by introducing the constituent tissue types of the human body and fundamental concepts and terminology.

Course description
From this starting point, the first part of the course will focus on the organ systems that are involved in movement and in the integration of bodily functions. Consequently the anatomy and physiology of the musculo-skeletal system, the nervous system (including special senses) and the endocrine system will be reviewed. The role of the nervous and endocrine systems in integration will be discussed with reference to the principles of ergonomics and homeostasis.
The second part focuses on the pulmonary, cardiovascular, immune and urinary systems. We shall discuss how pulmonary ventilation is achieved and regulated and how oxygen and other substances are moved around the body and maintained at a balanced level. We will discuss the delivery of oxygen and substrates to the tissues for energy production, the removal of wastes and the maintenance of a stable internal environment in changing situations (for example during exercise). This module looks at the vital support systems that provide for these needs; the cardiovascular, pulmonary and urinary systems, as well as the defence mechanisms that protect the body. Since function is based upon structure we shall also review the anatomy of the organs that comprise these systems and explore how their functions are regulated. Finally, we will examine how the normal functions of these systems are changed by both exercise and disease. Other relevant topics are:

1. Concepts of risk in medical practice

2. Labour forces in health care system
3. An investigation of equality and inequality in the Dutch health care system.

Students will need to be able to:

- define and use correctly a range of anatomical terms;
- describe the histological structure and relate it to the function of the fundamental human tissue types, with particular reference to the skin;
- describe the development, role, structure and function of osseous tissue and the skeletal system;
- describe the development, role, structure and function of skeletal muscle fibres and the organisation and function of the muscular system;
- describe the development, role, structure and function of the nervous system and explain neural transmission and the action of drugs on the nervous system;
- describe the development, role, structure and function of the endocrine system and explain neural transmission and the action of drugs on the nervous system;
- explain the principles of homeostasis and describe the roles of the neural and endocrine systems in its maintenance;
- describe the physiological systems involved in transport of oxygen around the body and the removal of waste products;
- describe the composition and function of blood and overview the structure and regulation of the cardio-vascular system including the heart, the vascular system;
- describe the immune response and the involvement of the lymphatic system;
- describe the structure of the respiratory system, the transport of gases and the regulation of blood gas concentrations;
- describe how the urinary system works;
- explain the regulation of fluids and electrolytes;
- demonstrate competence in data presentation, analysis and interpretation, numeracy, information retrieval and written communication.

Literature
Fundamentals of Anatomy and Physiology; F.H. Martini; Benjamin Cummings.

Assessment
Students will complete a number of assignments and take a final exam.

SCI162 Mechanisms of Disease
Credit points
6 ecp

Prerequisites
None

Course description
Introduction to relations and molecular mechanisms between the normal function (physiology) and disease (pathophysiology) illustrated for seven organ systems: heart and blood vessels, lung, kidney, gastro-intestinal tract, endocrine glands, the central nervous system and the reproductive system.

SCI171 Introduction to Public Health
Credit points
6 ecp

Prerequisites
None.
Learning Outcomes
This is an introductory course intended to introduce undergraduate students in a variety of disciplines to the basic tenets of public health. The course will provide a history of public health, an introduction to the core disciplines: epidemiology, biostatistics, environmental health, social and behavioural health, health economics and health policy and management, and current events and issues in the field.

Course description
Upon completion of this course, the student will:

- Define public health and the impact it has had on history
- Describe the evolution of public health, including its future development
- Describe how public health is measured and compared across regions or populations
- Describe how health interventions are created, implemented and evaluated
- Describe the structure of the public health system in the various countries (continents) including how policy is implemented and how it impacts public health practice
- List the basic study designs used in public health and provide examples of how they may be used, analysed and interpreted
- Describe the impact of chronic and infectious diseases on the health of populations
- Describe the variance in health status based on social and demographic factors and explain populations with special needs from a life cycle perspective
- Explain how public health impacts other fields and how it may be integrated
- Discuss the relationship between public health and the medical care system
- Describe the role of public health in a global society

Literature
The New Public Health: An Introduction for the 21st Century; TH Tulchinsky & EA Varavikova. Academic Press. London. 2000.

Assessment
Students write a short paper, give a group presentation and take a mid-term and final exam.

SCI181 Introduction to Environmental Sciences
Credit points
6 ecp

Prerequisites
None

Learning Outcomes
This course serves as an introduction to and covers broad aspects of environmental science and environmental studies. The aim of this course is to provide students with the fundamental ideas and concepts in the field of environmental sciences and with the analytical tools needed for a considered reflection on the nature of environmental problems and its possible solutions.

Course description
Environmental science, as a discipline, combines aspects of the physical and biological sciences with issues from the social and political sciences. In this course, we will explore the concept of sustainability and how it relates to us, the scientific principles and concepts governing ecosystems and their processes, human population and resource use, how to sustain the biodiversity of the earth, and how we use our energy resources. This course should prepare students to continue to develop their environmental knowledge through further coursework. Important features of the course include systems thinking and critical reflection.

Literature
William P. Cunningham and Mary Ann Cunningham (2008). Environmental Science – a Global Concern; McGraw Hill Higher Education.

Assessment
Students will complete a number of assignments and take a final exam.

SCI191 Programming Your World
Credit points
6 ecp

Prerequisites
None

Learning Outcomes
This course introduces students to modern programming techniques and provides them with basic programming skills.

Course description
Students will learn the basics of programming languages: syntax, semantics, program correctness and the interplay between programs and data structures, with illustrations in concrete (families of) programming styles: imperative, functional, object-oriented. The course explores aspects of modern programming through lectures and hands-on lab activities.

Topics
- Syntax
- Semantics
- Program correctness
- Interplay between programs
- Data structures
- Illustrations in concrete programming styles
- Imperative programming
- Functional programming
- Object-oriented programming

Assessment
Students will complete weekly lab assignments and take a final exam.

SCI226 Complex Functions
Credit points
6 ecp

Prerequisites
ACC 123 Calculus and Linear Algebra II

Course description
Complex numbers and functions of complex variables have beautiful mathematical properties. Complex functions can also be used to great advantage in many physical problems, such as heat conduction, electric potentials and (incompressible) fluid flow. This course focuses on the special features of functions of a complex variable. Students will discover the intricate dependencies between different characteristics of complex functions, including the special non-local properties of line (contour) integration. Other subjects include complex differentiability and analyticity, the Cauchy-Riemann equations, Cauchy's theorem, the residue theorem and its consequences, Taylor and Laurent series and conformal mappings, as well as applications to the above-mentioned physical phenomena.

SCI227 Dynamical Systems
Credit points
6 ecp

Prerequisites
ACC 122 Calculus

Course description
Dynamical systems appear as models in applications whenever a nontrivial mechanism is at work. Dynamical systems are an ever-evolving component of mathematics. The different contexts include physics, chemistry, biology, economics and also the social sciences. In this course students will develop an understanding of the intriguing properties of dynamical systems. They will learn how to extract information from the model which is essential for the application of interest. Both discrete time and continuous time dynamical systems will be considered, leading to nonlinear (iterative) maps and (ordinary) differential equations. Famous examples from population dynamics in biology will be studied. Mathematical existence and uniqueness results reflect the deterministic nature of the models. Students will study linear dynamical systems, stationary states and their (in)stability, periodic behavior, chaos, global behavior of scalar maps and differential equations in the plane, as well as bifurcation theory.

SCI228 Numerical Mathematics
Credit points
6 ecp

Prerequisites
ACC 123 Calculus and Linear Algebra II

Course description
Numerical mathematics is used frequently in all areas of science (e.g. fluid dynamics, meteorology and financial risk management). In many applications one encounters mathematical problems that cannot be solved through manipulations of formulas and, in such cases, numerical methods are used. These algorithms, implemented in computer programs, are at the core of scientific computing. In this course, students will learn the mathematical principles behind these numerical techniques and will apply them to non-trivial problems in applications outside of mathematics. The course focuses on the main numerical methods from modern day analysis and scientific computing. The theory is implemented in hands-on practical assignments. The list of subjects includes: error analysis, systems of linear equations, eigenvalue problems, interpolation, least square methods, fast Fourier transform, non-linear equations and ordinary

(and partial) differential equations. Applications include google page rank, data analysis and planetary orbits. A number of matlab assignments will also form an integral part of the course.

SCI231 The Physics of Heat

Credit points
6 ecp

Prerequisites
SCI 133 Introduction to Physics, formerly Mechanics and ACC 122 Calculus

Course description
This course introduces, discusses and derives the thermodynamical concepts of equilibrium, temperature and entropy. The role of energy, heat and work in thermodynamical systems will be explained, as well as diffusion and specific heat. The meaning of the Carnot cycle, reversible and irreversible processes will be discussed. Furthermore, the concepts of ensemble theory, Boltzmann statistics, partition functions, free energy, Bose-Einstein and Fermi-Dirac statistics will be studied. Applications that will be discussed include the ideal gas, Maxwell distribution, black body radiation, heat engines and refrigerators, phase transitions, magnetic systems and more, including attention to chemical and biological applications.

SCI232 Astrophysics and Cosmology

Credit points
6 ecp

Prerequisites
SCI 133 Introduction to Physics, formerly Mechanics and ACC 122 Calculus

Course description
This course focuses on stellar and planetary evolution, black holes, galaxies and the large-scale structure of the Universe including the role of dark matter and dark energy. Students will learn about current astrophysical and cosmological models, the observational evidence that supports these models, and the outstanding questions being addressed by current research. The course will cover the role of General Relativity, nuclear and atomic physics and electromagnetism in astrophysical systems, and explain how astronomy is exploring fundamental physics questions such as the nature of matter and space-time. Students will also gain familiarity with the challenges involved in big international science projects and facilities, including ground-based and space-based telescopes.

SCI233 Quantum Physics

Credit points
6 ecp

Prerequisites
SCI 133 (Introduction to Physics, formerly Mechanics) and ACC 123 (Calculus and Linear Algebra II)

Course description
This course introduces and discusses the experimental basis, historical basis and the general formalism of quantum physics. The course also focuses on the wave function and its probabilistic interpretation leading to the fundamental Heisenberg uncertainty relations. The Schrödinger equation will be introduced and some important quantum systems will be studied, such as the particle in a box and the harmonic oscillator. In addition, the concept of quantum tunneling will be discussed. Furthermore, the formal framework of a Hilbert space will be introduced. The concepts of angular momentum, spin, fermions and bosons will be discussed. An important case study will be the hydrogen atom. Applications in chemistry will be discussed, such as the periodic table, the structure of molecules, and some of their properties.

The conceptual problems that came with quantum theory will be given sufficient attention, in particular the measurement problem. We will also discuss the modern perspective on quantum theory through quantum information and its applications in cryptography. Black holes will be used to discuss the extent to which quantum theory can still today claim to be the final theory.

SCI239 Physics Lab
Prerequisites
Any 200-level physics course

Course description
To be announced

SCI241 Metabolic Biochemistry
Credit points
6 ecp

Prerequisites
SCI 141 Introduction to Chemistry or SCI 152 Introduction to Biology

Course description
This course examines the generation of metabolic energy in higher organisms with an emphasis on its regulation at the molecular, cellular and organ level. Chemical concepts and mechanisms of enzymatic catalysis will be emphasized, as well as selected topics in carbohydrate, lipid and nitrogen metabolism. Complex lipids and biological membranes, along with hormonal signal transduction, will also be discussed.

SCI242 Medicinal Chemistry
Credit points
6 ecp

Prerequisites
SCI 141 Introduction to Chemistry

Course description
This course focuses on concepts in organic and medicinal chemistry, with an emphasis on application to rational drug design. The course will also encompass classical and contemporary approaches to the design of small molecules for interaction with macromolecular targets, such as receptors, enzymes and DNA.

SCI243 Environmental Chemistry/Eco-Toxicology
Credit points
6 ecp

Prerequisites
SCI 141 Introduction to Chemistry

Course description
This course examines the fundamental principles of chemistry in order to gain an understanding of the source, fate, and reactivity of compounds in natural and polluted environments. Environmental issues that will be discussed include climate change, air pollution, stratospheric ozone depletion, pollution and treatment of water sources, and the utilization of insecticides and herbicides.

SCI244 Physical Chemistry*
Credit points
6 ecp

Prerequisites
SCI 141 Introduction to Chemistry

Course description
This course provides a quantitative description of physical and chemical processes and properties. Topics include equilibrium (1^{st} and 2^{nd} law), structure (quantum theory, spectroscopy, statistical thermodynamics, materials) and change (molecules in motion and the kinetics of complex reactions).

* Will not be offered in 2010/11. An alternative is: SCI 231 Physics of Heat

SCI249 Diagnostics and Analytical Chemistry Lab
Prerequisites
SCI 243 (Environmental Chemistry/Eco-Toxicology)

Course description
To be announced

SCI251 Genomics and Bioinformatics
Credit points
6 ecp

Prerequisites
SCI 152 (Introduction to Biology)

Course description
Students will study concepts and techniques related to traditional and modern genetics. The course provides students with a comprehensive overview of conjugation and recombination, gene regulation, forward and reverses genetics, gene linkage, mutagenesis screens, population genetics, genomics and functional genomics. The course also explores the applications of bioinformatics in modern life sciences.

SCI252 Molecular Cell Biology

Credit points
6 ecp

Prerequisites
SCI 152 Introduction to Biology or SCI 161 The Human Body

Learning outcomes:
After this course the student should be able to understand the functioning of a cell on its own and in relation to its environment. The student should be able to describe the fundamental processes that take place inside the cell that are related to e.g. protein synthesis, gene expression, cell division, membrane metabolism, energy generation and cell movement.

Course description:
This course focuses on the functioning of cells in relation to each other and in relation to the extracellular environment as part of a multi-cellular organism. The course introduces and discusses the different parts of cells and how these different constituents function in relation to other cells in the direct vicinity, and to cells at a distance.

The following topics will be discussed and presented:

Cell-cell interactions
Signal transduction
Cell communication
Cell-extra-cellular matrix interactions
Cell migration
Cell death
Stem cells
Different cell types in different tissues

Teaching forms:

- plenary lectures
- work groups
- presentations by students of one of the topics
- scientific literature on topics related to cell biology
- essay on one of the topics

SCI253 Evolution and Developmental Biology

Credit points
6 ecp

Prerequisites
SCI 152 Introduction to Biology

Course description
Students will study the field of biology that seeks to explain evolutionary events through the mechanisms of developmental biology and genetics. Students will attempt to determine ancestral relationships between organisms and how developmental processes have evolved. Topics will include the early body plan, cell type determination, organogenesis, morphogenesis, stem cells, cloning and other issues in human development.

SCI261 The Human Body II*

Credit points
6 ecp

Prerequisites
SCI 161 The Human Body

Course description
The course Human Body II focuses on the structure and function of a multi-cellular system, the human body. Each human body is built up of ten thousand times more cells than the number of the entire human world population. These cells are organized in tissues that form the organs. This extremely complex system can only exist by rigorous organization and regulation which starts at the moment that an oocyte (egg cell) is fertilized by a sperm cell and continues until the body dies. Key elements of the organization and regulation involve the differentiation of cells. All cells in a human body contain the same genetic make up (genome) but by differential use of the genome (transcription) cells are capable of exerting the correct function at the correct location (for example, stem cells differentiate into oocytes in the ovaries, into sperm cells in the testes and into cells that take up nutrients in the small intestines and in those places only). Differentiation of cells is the end point of a rigorous communication system of the body, including nerve cells, hormones, cell-cell communications, messenger molecules at long range (cytokines) and short range (nitric oxide and other gases) and many others. This miracle of biocomplexity of the human body is the topic of this course. Two organ systems are used as examples of differentiation and function related to structure: the sex organs and the gastro-intestinal tract. Focus is on the development of differentiation early during embryogenesis (from the fertilized oocyte onwards) and on the functioning of the organs in a mature body.
* *This course will be given as a lab course in the intensive period January 2011.*

SCI262 Hormones and Homeostasis

Prerequisites
SCI 161 The Human Body

Course description
Almost all diseases are failures of homeostasis. Students will study the principles of homeostasis and complex regulatory mechanisms (for instance: intestinal homeostasis, bone homeostasis, iron homeostasis, blood pressure regulation, homeostasis of body temperature). The main focus of the course is hormonal regulations in relation to homeostasis (for instance: energy, growth, reproduction, stress, blood glucose) in humans.
Topics include types of hormones, the structure and function of hormone receptors, negative and positive feedback mechanisms, counter regulatory hormones, functional anatomy and histology of the endocrine system. The course centres on recent medical aspects (function/dysfunction) of the human endocrine and metabolic processes. Students will become familiar with endocrine diseases, diabetes and will understand (pharmacological) management of these diseases and the complications involved.
During the course students will use recent scientific literature to prepare for individual or small group oral presentations.

Literature
S. L. Chew and D. Leslie, Clinical Endocrinology and Diabetes, Churchill Livingstone / Elsevier, 2006; ISNB 0443073031

F. H. Martini and J.L. Nath, Fundamentals of Anatomy & Physiology, 2009, 8th Edition, Pearson International Edition, ISBN 10: 0-321-53910-9

Assessment
Presentations, essay on one of the covered topics, final exam

SCI263 Immunology
Credit points
6 ecp

Prerequisites
SCI 161 The Human Body or SCI 152 Introduction to Biology

Course description
Microorganisms play an ambiguous role in our life. Whereas we tolerate billions of commensal bacteria in the gastrointestinal track, at the same time we have to build up highly sophisticated immune responses against a variety of life-threatening bugs (e.g. viruses, bacteria, fungi, parasites) that invade our body on the daily basis. On top of that, such bugs have evolved to evade our tailor-made immune system with an impressive number of tools. As a result, certain bugs may chronically infect our body and continuously form a potential danger, in particular in conditions of poor health. In addition, a calculated risk is that immune responses are associated with collateral damage that may even result in our death. Finally, the immune machinery may turn against us resulting in autoimmune and allergic diseases, of which the prevalence seems to increase in certain countries.

Relevant questions in the field are 1) how our immune system manages to address the enormous variety of bugs, 2) how responses to harmless commensals, as well as autoimmunity and allergy are prevented and why the prevalence of these diseases increases, and 4) how immune-mediated diseases are characterized and how they can be treated.

In this course we will analyze the battle against bugs by discussing the initiation of innate and adaptive immune responses. In this course we will learn about:

1. The receptors and cells that are used to recognize different classes or strains of microorganisms and the diversity of precise and less precise weapons immune cells have available.
2. The internal control mechanisms that diminish collateral damage and prevent autoimmunity and allergy, as well as the role of the environment herein.
3. The immune-mediated diseases and their treatment (chronic infection, autoimmunity, allergy)

SCI264 / SSC Brain and Cognition
Credit points
6 ecp

Prerequisites
SCI152 Introduction to Biology or SCI161 The Human Body or SSC292 Cognitive Psychology

Learning Outcomes
In this course students will become familiar with basic key concepts in (cognitive) neuroscience. The goal of this course is to deepen understanding of the neurobiology of the mind and the aetiology of mental disorders. Students will be encouraged to critically analyse the impact of neurobiology and (psychiatric) brain disorders on society.

Course description
To most of us, the mind constitutes as the very essence of our identity. However, where to draw the line between normal and abnormal, well and ill, an eccentric personality and a schizotypic one, an active, creative fast-thinking personality and ADHD?
This course will explore the neurobiology of the mind. First, students will be provided with a concise overview of the structure and function of the human brain and will be introduced to the basics of neural communication (electrical signalling and synaptic transmission). Next, the focus will be on key concepts in cognitive neuroscience such as perception, memory, attention, emotion and consciousness. A selection of relevant topics will be covered in depth (partly by students' presentations); possibilities include: altered states of consciousness, neurobiology of attraction and partner selection, creativity and mental illness, the gendered brain, the moral brain, free will, empathy and mirror neurons, intelligence, neurobiology of belief, superstition and religion, brain-machine interfaces, cognitive enhancers, mind control (this list is by no means exhaustive).
An important focus of this course is the aetiology of mental disorders, such as ADHD, depression, addiction, autism and schizophrenia, with special attention for the nature-nurture discussion. Students will be challenged to critically reflect on the boundaries between normality and abnormality and the implications for society.

Assessment
Exams, class participation, assignments (presentations, essays).

SCI269 Cell Biology and Physiology Lab

Prerequisites
SCI 161 (The Human Body) or SCI 252 (Molecular Cell Biology)

Course description
To be announced

SCI271 Nutrition and Health
Credit points
6 ecp

Prerequisites
SCI 171 Introduction to Public Health

Course description
The objective of the course is to learn about the essential nutrients and how these nutrients relate to human health. Nutrients will be covered both from the perspective of under-nutrition as well as chronic disease. The focus of the course will be on the biological aspects of nutrition. Students will be expected to discuss the inter-disciplinary aspects of nutrition as well as every-day relevance. Throughout the course, students will be expected to identify their own learning objectives and to demonstrate application of knowledge relevant to daily life.

SCI272 International Public Health
Credit points
6 ecp

Prerequisites
SCI 171 (Introduction to Public Health)

Course description
This course explores the field of international health within the broader context of health and development. Basic issues related to major diseases and conditions in developing countries, including international health organisations and their influence on approaches to prevention, treatment and control, will be reviewed from a cross-cultural perspective.
Topics covered during the course will be; culture, behaviour and health, reproductive health, infectious diseases, nutrition, chronic diseases, mental health, environmental health, health systems, health and economy, and globalization. Many of these health issues will be discussed using a human rights approach and/or the millennium goals.
Part of the course will be devoted to creating a country profile regarding health status and evaluating existing health promotion or prevention programs.

SCI273 Sexuality and Reproductive Medicine*
Credit points
6 ecp

Prerequisites
SCI 171 (Introduction to Public Health) or SCI 161 (The Human Body)

Course description
A contextual science course that studies sexuality in human beings, including anatomy and physiology of the reproduction system; fertilisation, prenatal development and parturition; sexual behaviour; birth control; abortion; venereal diseases and sex; sexual responsibility and ethics; and sex education.

* Will not be offered in 2010/11

SCI274 Epidemiology
Credit points
6 ecp

Prerequisites
SCI 171 (Introduction to Public Health) and ACC 121 (Basic Research Methods and Statistics)

Course description
The objective of the course is to learn and apply epidemiological methods to determine exposure/disease relationships. Students will study risk factors affecting health conditions and will be a provided with a foundation in intervention strategies (preventive medicine). This discipline brings together the biological (medicine) and social sciences. Topics include measures and statistical terminology; observational studies; interventional studies; and public health surveillance. The course will also examine epidemiological study designs and measures of disease risk used in etiological epidemiology and health services research.

SCI279 Brain Lab
Prerequisites
SSC191/SCI/HUM Theme Introduction to Information, Communication, Cognition or SCI 364 Brain and Cognition

Course description
To be announced

SCI281/SCI282 Hydrology/ River Basin and Coastal Management
Credit points
6 ecp

Prerequisites
None*

Course description
Large lowland fluvial and coastal settings are especially susceptible to global environmental change, but include dense populations of increasing vulnerability. The adaption of appropriate management strategies within these settings requires an understanding of fundamental hydrologic and coastal processes, as well as an appreciation for the challenges in implementing management within a complex social and political framework. The purpose of this course is to examine the physical processes and management of fluvial and coastal environments, with a focus on large river basins and deltas. Topics to be examined over the semester include water resources and hydrology, erosional and sedimentary processes, river and coastal engineering, flooding and storm surges, policy and restoration, international basin management, and global environmental change. The course will include two field trips and laboratory assignments.

** please note: in 2010/11, this course will have no prerequisites. Basic concepts and principles of the 100 level course 'Introduction to Geological Sciences' will be incorporated.*

SCI283 System Earth
Credit points
6 ecp

Prerequisites
None*

Course description
The primary goal of this course is to examine Earth's surface processes with a focus on understanding the interaction between Earth's four major spheres: The lithosphere, atmosphere, biosphere, and hydrosphere. A secondary course goal is to examine how humans impact and interact with Earth's surface, particularly from the perspective of modern environmental change and natural hazards. The course adapts a systems and process approach, and students will also be introduced to fundamental concepts in Earth science that serve as a foundation for advanced courses.

** please note: in 2010/11, this course will have no prerequisites. Basic concepts and principles of the 100 level course 'Introduction to Geological Sciences' will be incorporated.*

SCI292 Text Mining and Collective Intelligence
Credit points
6 ecp

Prerequisites
SSC191/SCI/HUM Theme Introduction to Information, Communication, Cognition

Course description
This course provides an introduction to text mining and basic natural language processing, along with the principles underlying Web 2.0, collective intelligence and Python. Students will learn to solve basic text mining problems using collective intelligence resources. The increasing amount of textual information available online contains a wealth of knowledge about topics, people, products and behaviour. Due to its numerous applications (scientific, commercial, non-profit, etc), uncovering this knowledge is an important task. To achieve the goal of automatically uncovering knowledge in text, we need to have algorithms to identify structure in text: who does what, with whom, when and where? This is the aim of text mining. The course will offer an introduction to text mining and put the core ideas to work using Web 2.0 data. The course will identify the need for machine learning techniques that allow us to make inferences and predictions about user experiences, marketing and human behaviour from the information that is generated and collected daily.

SCI293 Intelligent Systems

Credit points
6 ecp

Prerequisites
SSC191/SCI/HUM Theme Introduction to Information, Communication, Cognition

Learning Outcomes
Students are able to understand and evaluate signal processing methodologies for various sensory modalities and their relation to human perception. They acquire a basic knowledge of machine perception and are able to apply machine perception methods in relation to human perception.

Course description
This course provides an introduction to sensory information processing for machines. It covers visual, audio, language, and haptic perception for artificial systems. The course provides the fundamental signal processing background, mainstream machine learning methodologies, and the background and analogies for human perception.

Topics include:
• Perception basics for visual, audio, speech, and haptic perception
• Representation of sensory information
• Receptive field measurements
• Linear and Fourier theory
• Invariant transformations
• Combining information streams
• Error and uncertainty propagation
• Machine learning principles for sensory information processing
• Experimental evaluation and design

Assessment
- In-class participation (5%)
- Individual and group presentations (10%)
- 2 papers (15% & 25%)
- 2 exams (midterm and final) (20% each)
- Contribution to the final event prepared by the students (5%).

SCI294 Advanced Programming

Credit points
6 ecp

Prerequisites
SCI 191 Programming your World

Course description
This course focuses on the basic computational structure of programs and processes, both sequential and parallel. Topics range from automata to more complex models of computation, explaining the different levels from abstract process theory to implementation. Both semantic and complexity-theoretic viewpoints will be represented.

SCI311 Theme course: Case study I (Energy, Climate and Sustainability)

Credit points
6 ecp

Prerequisites
200-level courses in the theme

Course description
Case study (or practical work) in the area of energy-related systems. Students will work on a variety of "real-world" problems. The outcome will be presented in a discussion forum.

SCI311/2 Theme course: Case study II (Energy, Climate and Sustainability)

Credit points
6 ecp

Prerequisites
200-level courses in the theme

Course description
Case study (or practical work) in the area of climate dynamics or environmental resources . Students will work on a variety of "real-world" problems. The outcome will be presented in a discussion forum

SCI312 Theme course: Systems Biology (Life, Evolution, Universe)

Credit points
6 ecp

Prerequisites
200-level courses in the theme

Course description
Discussion of advanced subjects in the field of systems biology followed by design of research project, experimentation and plenary presentation and discussion of the outcome of the corresponding research project.

SCI312/2 Theme course: Astroparticle Physics (Life, Evolution, Universe)

Credit points
6 ecp

Prerequisites
200-level courses in the theme

Course description
Discussion of advanced subjects in the field of astroparticle physics followed by design of research project, experimentation and plenary presentation and discussion of the outcome of the corresponding research-project.

SCI313/SSC Theme course: Genomic Medicine (Health and Well-being)
Credit points
6 ecp

Prerequisites
200-level courses in the theme

Course description
This course reviews the key genomic technologies and computational approaches that are driving advances in prognostics, diagnostics, and treatment. Outcome considerations and socioeconomic implications of personalised medicine are also discussed as well as the ethical, legal and social issues surrounding genomic medicine. A vision of how genomic medicine relates to preventative care and public health is presented in a discussion forum with the students.

SCI313/2/SSC Theme course: Lifestyle and Disease (Health and Well-being)
Credit points
6 ecp

Prerequisites
200-level courses in the theme

Course description
The purpose of this course is to acquaint students with the effects of lifestyle on health and disease. The positive effects of a healthy lifestyle on diseases such as heart disease, hypertension and cancer will be discussed. Students will develop a personal health profile that will include assessment of body fat, fitness, strength, flexibility, posture, diet and life stress. The profile will be generated from laboratory classes conducted throughout the session. Health-based intervention techniques will be discussed.

AUC Science Laboratory Courses

Laboratory experimentation in almost all science disciplines is key to model building, scientific progress and advances in various fields of technology. An AUC science student should be equipped with the necessary knowledge to set up an experiment, interpret the data and place the findings within the context of the related sciences discipline(s). In other words, students should explore and develop the characteristics of an experimental research-process by doing experiments.

All Science Laboratory Courses are connected to related 100 or 200-level disciplinary courses in order to set the necessary foundation for the experimental approach.

A typical AUC Science Laboratory Course consists of the following components:

- Students should become familiar with the literature related to the discipline of the experiment,
- Formulate a research question/hypothesis,
- Design an experimental procedure (taking into consideration safety issues),
- Execute the lab experiment,
- Document the experiment (that lab report),
- Evaluate the experimental data (including statistical analysis and computational processing),
- Analyze the results (model building), placing the findings in context of literature, and
- Report on the entire process.

SCI321 Machine Learning
Credit points
6 ecp

Prerequisites
SCI 293 Intelligent Systems

Course description
To be announced

SCI322 Modelling of Biological Systems
Credit points
6 ecp

Prerequisites
To be determined.

Course description
Advanced topics in the field of modelling: continuous-, discrete-time, automata, partial differential; model analysis: metabolic flux and control analysis, time scales, identification, robustness; systems theory: regulation, adaptation, synchronisation, reduced models, controller design.

SCI331 Science and Technology of Hydrogen Economics
Credit points
6 ecp

Prerequisites
To be determined.

Course description
Advanced topics in the field of "hydrogen economics". Topics are: various hydrogen generation methods, fuel-cell technologies, fuel-cell based technologies in the laboratory, Modelling and optimisation of hydrogen production systems, costs and environmental aspects.

SCI332 Biophysics and Imaging
Credit points
6 ecp

Prerequisites
To be determined.
Course description
Explores advanced biophysical methods and modern imaging methodologies in relation to the life sciences and medicine.

SCI334 Solar Energy
Credit points
6 ecp

Prerequisites
To be determined.

Course description
Explores the behaviour of photovoltaic solar energy systems, focusing on the behaviour of "stand-alone" systems. Energy levels, band structure of solids, energy gap, p-n junctions, excitons.

SCI341 Structural Biology
Credit points
6 ecp

Prerequisites
To be determined.

Course description
Special topics on advanced biophysical techniques that are currently used to explore the structure and function of biomolecules. Topics are: mass spectrometry, proteomics, X-ray crystallographic, electron microscopy and NMR.

SCI342 Innovative Drug Discovery
Credit points
6 ecp

Prerequisites
To be determined.

Course description
Advanced topics and latest developments in the field of (computational) chemistry, drug discovery and design. Topics are: structural biology of target molecules; the structure and properties of drug-like compounds; the energetics of ligand-receptor binding; current techniques for indirect and direct drug design; current techniques for drug and lead discovery.

SCI351 Epigenetic Regulations
Credit points
6 ecp

Prerequisites
To be determined.

Course description
Advanced topics and recent developments in the field of epigenetic regulation with special emphasis on the role of epigenetics in various biological processes in human, animals, plants, fungi and bacteria. Further topics are: biochemistry and dynamics of DNA modification and chromatin modification (DM&CM) and of the role these epigenetic mechanisms have on gene expression and inheritance of traits.

SCI352 Plants and Health
Credit points
6 ecp

Prerequisites
To be determined

Course description
Advanced topics in the field of molecular plant physiology, biotechnology in relation to the molecular mechanisms of resistance against pathogens and insects, and to study the cellular signal transduction pathways controlling stress responses in general.

SCI361 Infection and Tropical Diseases
Credit points
6 ecp

Prerequisites
To be determined

Course description
Advanced topics in the field of infection and tropical diseases (host–pathogen interactions). Infectious disease-oriented problems related to function and biology of microorganisms, molecular epidemiology of infections, microbial virulence and therapy resistance, interactions between host and microorganisms, inflammation and tissue damage.

SCI362 Cancer Biology and Treatment
Credit points
6 ecp

Prerequisites
To be determined

Course description
Advanced topics in the field of cancer development, diagnosis and therapy. Topics are: molecular and cellular events involved in tumour formation and progression, diagnostics, clinical oncology, tumour immunology, innovative tumour therapies.

SCI363 Cardiovascular Diseases
Credit points
6 ecp

Prerequisites
To be determined.

Course description
Advanced topics in cardiovascular science. Topics are: development of the heart, genetic control, organ function, programming of cardiovascular disease in early life, organ dysfunction and repair, the cardiovascular system in reproduction and in inflammation.

SCI371 Addiction
Credit points
6 ecp

Prerequisites
To be determined

Course description
The course explores various topics in the study of drug addiction. The primary emphasis is on psychological and biological theories of drug addiction, with only minor attention given to demographic data, clinical diagnosis and treatment. Underlying factors that are common in cases of addiction to different classes of drugs are identified. Psychomotor stimulant (e.g. amphetamine, cocaine) and opiate (e.g. heroin, morphine) drugs figure prominently in an examination of the pharmacological properties of addictive drugs. Much of the course relates the important mood-elevating effects of these drugs to their biological actions.

SCI372 Ageing
Credit points
6 ecp

Prerequisites
To be determined

Course description
The course provides up-to-date information on the current understanding of the ageing process. Topics are: genetics of ageing, lifespan intervention analyses in animal models, age-related diseases, gerontology, adult development, environment and ageing, cities and ageing.

SCI373 Cultures and Health Care
Credit points
6 ecp

Prerequisites
To be determined

Course description
Advanced topics on various schools of qualitative and participatory research, linking research with interventions and advocacy, cultural diversity, bias, triangulation, selection of a research population and how to work with mobile populations, traditional qualitative and visual research methods, transcriptions and coding, qualitative analysis.

SCI381 / SSC Geographic Information Sciences
Credit points
6 ecp

Prerequisites
To be determined

Course description
GIS and remote sensing course that provides theory and hands-on applications. A raster-based GIS will be used as a vehicle for spatial and image analysis applications in the environmental and the biological sciences. Discusses data structures, database query, distance and context operators, map algebra, DEM creation, principles of remote sensing and spectral response patterns, satellite image enhancement, and supervised and unsupervised image classification theory and applications.

SCI382 Climate and Atmospheric Dynamics
Credit points
6 ecp

Prerequisites
To be determined.

Course description
This advanced course encompasses processes that determine the behaviour of the atmosphere and climate over time scales of weeks to centuries and millennia. Topics are: physical processes underlying the climate system, application of principles emphasising seasonal, regional and global climates. Analysis of global climate changes, effects of human emissions on the atmosphere.

SCI383/SSC3 Risk Management
Credit points
6 ecp

Prerequisites
To be determined.

Course description
Advanced topics in hazard assessment and management. Site characterisation; environmental pathways; contaminant release, transfer and transport; exposed populations; and risk characterisation.