



Drug Discovery & Safety MSc

Vrije Universiteit Amsterdam - Faculteit der Exacte Wetenschappen - M Drug Discovery and Safety - 2013-2014

Specializations

During the Master's in Drug Discovery and Safety students can specialize themselves by doing a Major in one of the following disciplines:

- Drug Discovery & Target Finding (Molecular Pharmacology)
- Drug Disposition & Safety Assessment (Molecular Toxicology)
- Drug Design & Synthesis
- Computational Medicinal Chemistry & Toxicology
- Biomarkers & Clinical Chemical Analysis

Variants

The Master programme Drug Discovery and Safety offers four different variants for graduation:

- Research variant (O-variant)
- Society oriented variant for natural and life sciences (M-variant)
- Communication variant (C-variant)
- Education variant (E-variant)

Global Composition of Master Programme

Variant	O	M	C	E
Compulsory courses	36-42*	30	30	30
Research project (Major) including report	42	24	24	24
Colloquium and Thesis	12	6	6	6
Practical training (company training)	-	30	30	-
M or C projects	-	18	12	-
Educational training	-	-	-	60
Optional programme	24-30*	12	18	-
Ethics and portfolio academic skills	6	-	-	-
Total EC	120	120	120	120

Ad *) Depends on the specialization : Biomarkers & Clinical Analysis requires 42 EC compulsory courses with 24 EC optional programme, other specializations require 36 EC compulsory courses with 30 EC optional programme.

Students should arrange the composition of their Master's programme in consult with the Master's coordinator. The exam committee formally has to approve the composition and extent of the Master's programme.

[Master co-ordinators](#)

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Communication Variant

This specialization is intended for students with a BSc degree in any of the bèta-studies who want to specialize in communication. The programme focuses on science communication theory, research and practice. The programme of the communication (C) specialization is 1 year (60 credits). This specialization may not be combined with the Societal specialization (M) or the Education specialization (E). C-courses are shared with master students from the Faculty of Earth and Life Sciences.

Programme

For a specialization degree it is required to spend 60 credits on Science Communication components. Two courses, one internship and a thesis are compulsory. The rest of the programme can be filled with optional courses. While science communication research is always a component of a students' internship, students have the opportunity to choose for placement at institutes such as newspapers, museums, science centers, companies, etc. to hone their practical as well as academic skills. Students' thesis comprise short (9 credits) literature studies on research questions about aspects of science communication.

To complete his or her entire Master programme (120 credits), the student has to choose 60 credits Chemistry courses.

Before formal enrolment, the students' programme has to be approved by the master coordinator as well as the programme coordinator for the Science Communication

Opleidingsdelen:

- [Course modules Communication spec.](#)
- [DDS courses](#)
- [Deficiency Courses](#)
- [Compulsory Courses](#)

Course modules Communication spec.

Students can opt for a selection of modules from this group. The following modules are compulsory:

- Research Methods (AM_470582)
- Science and Communication (AM_470587)

Vakken:

Naam	Periode	Credits	Code
Communication, Organization and Management	Periode 2	6.0	AM_470572
Qualitative and Quantitative Research Methods	Periode 1	6.0	AM_470582
Science and Communication	Periode 1	6.0	AM_470587
Science in Dialogue	Periode 2	6.0	AM_1002

Science Journalism	Periode 2	6.0	AM_471014
Science Museology	Periode 3	6.0	AM_470590

DDS courses

This specialization is intended for students with a BSc degree in any of the bèta-studies who want to specialize in communication. The programme focuses on science communication theory, research and practice. The programme of the communication (C) specialization is 1 year (60 credits). This specialization may not be combined with the Societal specialization (M) or the Education specialization (E). C-courses are shared with master students from the Faculty of Earth and Life Sciences.

To complete the entire Master programme (120 credits) of the Communication, education or social variant, the student has to choose 60 credits in DDS courses.

Opleidingsdelen:

- [Specialisation Courses](#)
- [Literature and Colloquium \(compulsory choose 1 of 5\)](#)
- [DDS Research project \(choose 1 of 5\) \(24 EC\)](#)

Specialisation Courses

In consultation with the master coordinator and depending of the chosen specialization 6 credits have to be chosen from the following list.

Vakken:

Naam	Periode	Credits	Code
Biomolecular Simulation in Medicinal Chemistry and Toxicology	Periode 5+6	6.0	X_432664
Computer-Aided Drug Design and Virtual Screening	Periode 2	6.0	X_432673
Drug-induced Stress and Cellular Responses	Periode 2	6.0	X_432536
Mass Spectrometry	Periode 2	6.0	X_435604
Physical-Organic Chemistry	Periode 1	6.0	X_435663
Signal Transduction in Health and Disease	Periode 2	6.0	X_432535
Synthetic Approaches in Medicinal Chemistry	Periode 2	6.0	X_435685

Literature and Colloquium (compulsory choose 1 of 5)

Students need to select a total of 6 credits or more from the following list.

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

Vakken:

Naam	Periode	Credits	Code
Colloquium and Literature Thesis CMCT (C,E,M)	Ac. Jaar (september)	6.0	X_432571
Colloquium and Literature Thesis DDS BDA (C,E,M)	Ac. Jaar (september)	6.0	X_432570
Colloquium and Literature Thesis DDS MC, DD&S (C,E,M)	Ac. Jaar (september)	6.0	X_432623
Colloquium and Literature Thesis DDS MC, DDTF (C,E,M)	Ac. Jaar (september)	6.0	X_432624
Colloquium and Literature Thesis DDS Molecular Toxicology, DDSA (C,E,M)	Ac. Jaar (september)	6.0	X_432572

DDS Research project (choose 1 of 5) (24 EC)

Students need to select at least 30 credits or more from the following list.

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

Vakken:

Naam	Periode	Credits	Code
Major Research Project DDS Biomolecular Drug Analysis (C,E,M)	Ac. Jaar (september)	24.0	X_432727
Major Research Project DDS Medicinal Chemistry, DD&S	Ac. Jaar (september)	24.0	X_432728
Major Research Project DDS Medicinal Chemistry, DDTF	Ac. Jaar (september)	24.0	X_432729
Major Research Project DDS Molecular Toxicology, CMCT	Ac. Jaar (september)	24.0	X_432730
Major Research Project DDS Molecular Toxicology, DDSA (C,E,M)	Ac. Jaar (september)	24.0	X_432731

Deficiency Courses

Compulsory course for students without a Bachelor degree Pharmaceutical Sciences VU.

Not specified: all courses start with an summary of required knowledge.

Vakken:

Naam	Periode	Credits	Code
Principles of Pharmaceutical Sciences / Pharmacology	Periode 1	6.0	X_435675

Compulsory Courses

Vakken:

Naam	Periode	Credits	Code
ADMET	Periode 1	6.0	X_432721
Chemical Biology	Periode 1	6.0	X_432538
Drug Action	Periode 3	6.0	X_432724
Internship Communication Specialisation	Ac. Jaar (september)	30.0	AM_471148
Project Computational Design and Synthesis of Drugs	Periode 4	6.0	X_432734

Education variant

The teaching in these variant is mainly in Dutch. Therefore we also give the requirements in Dutch.

Programma

De opleiding voor het behalen van de eerstegraads lesbevoegdheid start twee keer per jaar, in september en in februari. De opleiding wordt aangeboden in twee semesters. Uitgaande van de start in september duurt semester 1 tot en met januari en semester 2 tot juli. De opleiding is sterk praktijkgericht. De helft van de opleiding bestaat uit praktijk door werkervaring of stage (ook wel schoolpracticum genoemd) op een school voor voortgezet onderwijs. Daarnaast kent de opleiding vier componenten: vakdidactiek, algemene didactiek/pedagogiek, praktijkonderzoek en verdiepingsmodulen.

Naast de educatievakken volgt de student 60 sp Chemistry vakken, in overleg met de mastercoördinator van de gekozen specialisatie. Hierbij zijn de twee vakken Literature thesis and Colloquium Chemistry Education Variant en Master Research Project Chemistry-Education Variant verplicht.

Studenten die bij de Communicatie variant de vakken 'interpersoonlijke communicatie' en 'museologie en buitenschoolse educatie' volgen, krijgen

bij de lerarenopleiding een vrijstelling voor verdiepingsmodulen, een deel van het praktijkonderzoek en een deel van algemene didactiek.

Opleidingsdelen:

- [DDS courses](#)
- [Deficiency Courses](#)
- [Compulsory Courses](#)

DDS courses

This specialization is intended for students with a BSc degree in any of the bèta-studies who want to specialize in communication. The programme focuses on science communication theory, research and practice. The programme of the communication (C) specialization is 1 year (60 credits). This specialization may not be combined with the Societal specialization (M) or the Education specialization (E). C-courses are shared with master students from the Faculty of Earth and Life Sciences.

To complete the entire Master programme (120 credits) of the Communication, education or social variant, the student has to choose 60 credits in DDS courses.

Opleidingsdelen:

- [Specialisation Courses](#)
- [Literature and Colloquium \(compulsory choose 1 of 5\)](#)
- [DDS Research project \(choose 1 of 5\) \(24 EC\)](#)

Specialisation Courses

In consultation with the master coordinator and depending of the chosen specialization 6 credits have to be chosen from the following list.

Vakken:

Naam	Periode	Credits	Code
Biomolecular Simulation in Medicinal Chemistry and Toxicology	Periode 5+6	6.0	X_432664
Computer-Aided Drug Design and Virtual Screening	Periode 2	6.0	X_432673
Drug-induced Stress and Cellular Responses	Periode 2	6.0	X_432536
Mass Spectrometry	Periode 2	6.0	X_435604
Physical-Organic Chemistry	Periode 1	6.0	X_435663
Signal Transduction in Health and Disease	Periode 2	6.0	X_432535
Synthetic Approaches in Medicinal Chemistry	Periode 2	6.0	X_435685

Literature and Colloquium (compulsory choose 1 of 5)

Students need to select a total of 6 credits or more from the following list.

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

Vakken:

Naam	Periode	Credits	Code
Colloquium and Literature Thesis CMCT (C,E,M)	Ac. Jaar (september)	6.0	X_432571
Colloquium and Literature Thesis DDS BDA (C,E,M)	Ac. Jaar (september)	6.0	X_432570
Colloquium and Literature Thesis DDS MC, DD&S (C,E,M)	Ac. Jaar (september)	6.0	X_432623
Colloquium and Literature Thesis DDS MC, DDTF (C,E,M)	Ac. Jaar (september)	6.0	X_432624
Colloquium and Literature Thesis DDS Molecular Toxicology, DDSA (C,E,M)	Ac. Jaar (september)	6.0	X_432572

DDS Research project (choose 1 of 5) (24 EC)

Students need to select at least 30 credits or more from the following list.

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

Vakken:

Naam	Periode	Credits	Code
Major Research Project DDS Biomolecular Drug Analysis (C,E,M)	Ac. Jaar (september)	24.0	X_432727
Major Research Project DDS Medicinal Chemistry, DD&S	Ac. Jaar (september)	24.0	X_432728
Major Research Project DDS Medicinal Chemistry, DDTF	Ac. Jaar (september)	24.0	X_432729
Major Research Project DDS Molecular Toxicology, CMCT	Ac. Jaar (september)	24.0	X_432730

Major Research Project DDS Molecular Toxicology, DDSA (C,E,M)	Ac. Jaar (september)	24.0	X_432731
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Deficiency Courses

Compulsory course for students without a Bachelor degree Pharmaceutical Sciences VU.

Not specified: all courses start with an summary of required knowledge.

Vakken:

Naam	Periode	Credits	Code
Principles of Pharmaceutical Sciences / Pharmacology	Periode 1	6.0	X_435675

Compulsory Courses

Vakken:

Naam	Periode	Credits	Code
ADMET	Periode 1	6.0	X_432721
Chemical Biology	Periode 1	6.0	X_432538
Drug Action	Periode 3	6.0	X_432724
Project Computational Design and Synthesis of Drugs	Periode 4	6.0	X_432734

Research Variant DDTF

The programme consists of 120 credits

- compulsory courses 36 credits (including a Literature Thesis and Colloquium 12 credits)
- compulsory choice Ethics and Portfolio Academic Skills 6 credits
- compulsory choices Major Research Project at least 42 credits
- optional courses to complete 120 credits.

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

Master Coordinator:

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Opleidingsdelen:

- Ethics and Academic Skills
- Deficiency Courses
- Research project (choose 42, 48, 54 or 60 EC)
- (Molecular Pharmacology) Optional Courses
- Compulsory Courses

Ethics and Academic Skills

Students need to select a total of 6 credits from the following list.

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

Vakken:

Naam	Periode	Credits	Code
Business and Innovation in Life Science	Periode 1, Periode 3	3.0	X_432539
Business Management in Health and Life Sciences	Periode 2	6.0	AM_470584
Clinical development and clinical trials	Periode 3	6.0	AM_470585
Communication, Organization and Management	Periode 2	6.0	AM_470572
Entrepreneurship in Health and Life Sciences	Periode 2	6.0	AM_470575
Ethics and Academic skills	Ac. Jaar (september)	2.0	X_432726
Ethics and Academic skills	Ac. Jaar (september)	1.0	X_432725
Ethics and Academic Skills	Ac. Jaar (september)	6.0	X_437556
Ethics and Academic Skills	Ac. Jaar (september)	3.0	X_432517
Ethics in Life Sciences	Periode 3	3.0	AM_470707
Ethics in Public Health	Ac. Jaar (september), Periode 3	3.0	AM_470805
Managing Science and Technology in Society	Periode 1	6.0	AM_470586
Qualitative and Quantitative Research Methods	Periode 1	6.0	AM_470582
Science and Communication	Periode 1	6.0	AM_470587
Science in Dialogue	Periode 2	6.0	AM_1002
Science Journalism	Periode 2	6.0	AM_471014
Scientific Writing in English	Periode 2, Periode 6	3.0	X_400592
Teaching Assistant	Ac. Jaar (september)	6.0	X_432742
Teaching Assistant	Ac. Jaar (september)	3.0	X_432741
Tutoring Students	Periode 2	3.0	X_432625
Wetenschapscommunicatie voor Bèta-onderzoekers	Periode 5	6.0	AB_470185

Deficiency Courses

Compulsory course for students without a Bachelor degree Pharmaceutical Sciences VU.

Not specified: all courses start with an summary of required knowledge.

Vakken:

Naam	Periode	Credits	Code
Principles of Pharmaceutical Sciences / Pharmacology	Periode 1	6.0	X_435675

Research project (choose 42, 48, 54 or 60 EC)

Compulsory choice of at least 42 credits.

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

Vakken:

Naam	Periode	Credits	Code
Major Research Project Med. Chem., Drug Disc. & Target Find.	Ac. Jaar (september)	48.0	X_432550
Major Research Project Med. Chem., Drug Disc. & Target Find.	Ac. Jaar (september)	54.0	X_432551
Major Research Project Med. Chem., Drug Disc. & Target Find.	Ac. Jaar (september)	60.0	X_432552
Major Research Project Med. Chem., Drug Disc. & Target Find.	Ac. Jaar (september)	42.0	X_432547

(Molecular Pharmacology) Optional Courses

The subject options of 30, 24, 18 or 12 credits can be completed with the possibilities below.

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

Vakken:

Naam	Periode	Credits	Code
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Advanced Course on Drug Disp. & Safety Assessment (Mol.Tox.)	Periode 5+6	6.0	X_435681
Applied Theoretical Chemistry	Ac. Jaar (september)	12.0	X_432501
Applied Theoretical Chemistry	Ac. Jaar (september)	6.0	X_435612
Biomolecular Simulation in Medicinal Chemistry and Toxicology	Periode 5+6	6.0	X_432664
Company Training Drug Discovery & Target Finding	Ac. Jaar (september)	18.0	X_432621
Company Training Drug Discovery & Target Finding	Ac. Jaar (september)	24.0	X_432747
Company Training Drug Discovery & Target Finding	Ac. Jaar (september)	30.0	X_432752
Computer-Aided Drug Design and Virtual Screening	Periode 2	6.0	X_432673
Drug-induced Stress and Cellular Responses	Periode 2	6.0	X_432536
Internship abroad DDS Drug Disc. & Target Find.	Ac. Jaar (september)	18.0	X_432678
Internship abroad DDS Drug Disc. & Target Find.	Ac. Jaar (september)	24.0	X_432757
Internship abroad DDS Drug Disc. & Target Find.	Ac. Jaar (september)	30.0	X_432762
Mass Spectrometry	Periode 2	6.0	X_435604
Minor Research Project Biomol. Drug Analysis	Ac. Jaar (september)	24.0	X_432658
Minor Research Project Biomol. Drug Analysis	Ac. Jaar (september)	18.0	X_432689
Minor Research Project Biomol. Drug Analysis	Ac. Jaar (september)	30.0	X_432704
Minor Research Project DDS Medicinal Chemistry, DD&S	Ac. Jaar (september)	18.0	X_432692
Minor Research Project DDS Medicinal Chemistry, DD&S	Ac. Jaar (september)	24.0	X_432693
Minor Research Project DDS Medicinal Chemistry, DD&S	Ac. Jaar (september)	30.0	X_432705
Minor Research Project DDS Molecular Toxicology, CMCT	Ac. Jaar (september)	24.0	X_432632
Minor Research Project DDS Molecular Toxicology, DDSA	Ac. Jaar (september)	18.0	X_432620
Minor Research Project DDS Molecular Toxicology, DDSA	Ac. Jaar (september)	24.0	X_432591

Minor Research Project DDS Molecular Toxicology, DDSA	Ac. Jaar (september)	30.0	X_432592
Minor Research Project DDS, CMCT	Ac. Jaar (september)	30.0	X_432707
Minor Research Project DDS, CMCT	Ac. Jaar (september)	18.0	X_432507
Minor Research Project Med. Chem., Drug Disc. & Target Find.	Ac. Jaar (september)	30.0	X_432706
Minor Research Project Med. Chem., Drug Disc. & Target Find.	Ac. Jaar (september)	18.0	X_432696
Minor Research Project Med. Chem., Drug Disc. & Target.Find.	Ac. Jaar (september)	24.0	X_432635
Protein Analysis	Periode 5	6.0	X_435045
Supramolecular Chemistry and Nanomaterials	Periode 1	6.0	X_435653

Compulsory Courses

Vakken:

Naam	Periode	Credits	Code
ADMET	Periode 1	6.0	X_432721
Chemical Biology	Periode 1	6.0	X_432538
Colloquium and Literature Thesis	Ac. Jaar (september)	12.0	X_432574
Drug Action	Periode 3	6.0	X_432724
High-Throughput Screening	Periode 2	6.0	X_435047
Project Computational Design and Synthesis of Drugs	Periode 4	6.0	X_432734
Signal Transduction in Health and Disease	Periode 2	6.0	X_432535

Research Variant DDSA

The programme consists of 120 credits

- compulsory courses 30 credits (including a Literature Thesis and Colloquium 12 credits)
- compulsory choice Ethics and Portfolio Academic Skills 6 credits
- compulsory choices Major Research Project at least 42 credits
- optional courses to complete 120 credits.

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

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Opleidingsdelen:

- [Ethics and Academic Skills](#)
- [Deficiency Courses](#)
- [Research project \(choose 42, 48, 54 or 60 EC\)](#)
- [\(Molecular Toxicology\) Optional Courses](#)
- [Compulsory Courses](#)

Ethics and Academic Skills

Students need to select a total of 6 credits from the following list.

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

Vakken:

Naam	Periode	Credits	Code
Business and Innovation in Life Science	Periode 1, Periode 3	3.0	X_432539
Business Management in Health and Life Sciences	Periode 2	6.0	AM_470584
Clinical development and clinical trials	Periode 3	6.0	AM_470585
Communication, Organization and Management	Periode 2	6.0	AM_470572
Entrepreneurship in Health and Life Sciences	Periode 2	6.0	AM_470575
Ethics and Academic skills	Ac. Jaar (september)	2.0	X_432726
Ethics and Academic skills	Ac. Jaar (september)	1.0	X_432725
Ethics and Academic Skills	Ac. Jaar (september)	6.0	X_437556
Ethics and Academic Skills	Ac. Jaar (september)	3.0	X_432517
Ethics in Life Sciences	Periode 3	3.0	AM_470707
Ethics in Public Health	Ac. Jaar (september), Periode 3	3.0	AM_470805
Managing Science and Technology in Society	Periode 1	6.0	AM_470586
Qualitative and Quantitative Research Methods	Periode 1	6.0	AM_470582
Science and Communication	Periode 1	6.0	AM_470587
Science in Dialogue	Periode 2	6.0	AM_1002
Science Journalism	Periode 2	6.0	AM_471014

Scientific Writing in English	Periode 2, Periode 6	3.0	X_400592
Teaching Assistant	Ac. Jaar (september)	6.0	X_432742
Teaching Assistant	Ac. Jaar (september)	3.0	X_432741
Tutoring Students	Periode 2	3.0	X_432625
Wetenschapscommunicatie voor Bèta-onderzoekers	Periode 5	6.0	AB_470185

Deficiency Courses

Compulsory course for students without a Bachelor degree Pharmaceutical Sciences VU.

Not specified: all courses start with an summary of required knowledge.

Vakken:

Naam	Periode	Credits	Code
Principles of Pharmaceutical Sciences / Pharmacology	Periode 1	6.0	X_435675

Research project (choose 42, 48, 54 or 60 EC)

Compulsory choice of at least 42 credits.

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

Vakken:

Naam	Periode	Credits	Code
Major Research Project DDS Molecular Toxicology, DDSA	Ac. Jaar (september)	42.0	X_432559
Major Research Project DDS Molecular Toxicology, DDSA	Ac. Jaar (september)	48.0	X_432561
Major Research Project DDS Molecular Toxicology, DDSA	Ac. Jaar (september)	54.0	X_432562
Major Research Project DDS Molecular Toxicology, DDSA	Ac. Jaar (september)	60.0	X_432563

(Molecular Toxicology) Optional Courses

The subject options of 36, 30, 24, or 18 credits can be completed with the possibilities below.

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

mentor and approved by the Examination Board.

Vakken:

Naam	Periode	Credits	Code
Applied Theoretical Chemistry	Ac. Jaar (september)	12.0	X_432501
Applied Theoretical Chemistry	Ac. Jaar (september)	6.0	X_435612
Biomolecular Simulation in Medicinal Chemistry and Toxicology	Periode 5+6	6.0	X_432664
Company Training DDS Drug, Disp. and Saf. Assessm.	Ac. Jaar (september)	18.0	X_432672
Company Training DDS Drug, Disp. and Saf. Assessm.	Ac. Jaar (september)	24.0	X_432746
Company Training DDS Drug, Disp. and Saf. Assessm.	Ac. Jaar (september)	30.0	X_432751
Computer-Aided Drug Design and Virtual Screening	Periode 2	6.0	X_432673
Internship abroad DDS Drug, Disp. and Saf. Assessm.	Ac. Jaar (september)	18.0	X_432677
Internship abroad DDS Drug, Disp. and Saf. Assessm.	Ac. Jaar (september)	24.0	X_432756
Internship abroad DDS Drug, Disp. and Saf. Assessm.	Ac. Jaar (september)	30.0	X_432761
Minor Research Project Biomol. Drug Analysis	Ac. Jaar (september)	24.0	X_432658
Minor Research Project Biomol. Drug Analysis	Ac. Jaar (september)	18.0	X_432689
Minor Research Project Biomol. Drug Analysis	Ac. Jaar (september)	30.0	X_432704
Minor Research Project DDS Medicinal Chemistry, DD&S	Ac. Jaar (september)	18.0	X_432692
Minor Research Project DDS Medicinal Chemistry, DD&S	Ac. Jaar (september)	24.0	X_432693
Minor Research Project DDS Medicinal Chemistry, DD&S	Ac. Jaar (september)	30.0	X_432705
Minor Research Project DDS Molecular Toxicology, CMCT	Ac. Jaar (september)	24.0	X_432632

Minor Research Project DDS Molecular Toxicology, DDSA	Ac. Jaar (september)	18.0	X_432620
Minor Research Project DDS Molecular Toxicology, DDSA	Ac. Jaar (september)	24.0	X_432591
Minor Research Project DDS Molecular Toxicology, DDSA	Ac. Jaar (september)	30.0	X_432592
Minor Research Project DDS, CMCT	Ac. Jaar (september)	30.0	X_432707
Minor Research Project DDS, CMCT	Ac. Jaar (september)	18.0	X_432507
Minor Research Project Med. Chem., Drug Disc. & Target Find.	Ac. Jaar (september)	30.0	X_432706
Minor Research Project Med. Chem., Drug Disc. & Target Find.	Ac. Jaar (september)	18.0	X_432696
Minor Research Project Med. Chem., Drug Disc. & Target.Find.	Ac. Jaar (september)	24.0	X_432635
Signal Transduction in Health and Disease	Periode 2	6.0	X_432535
Supramolecular Chemistry and Nanomaterials	Periode 1	6.0	X_435653

Compulsory Courses

Vakken:

Naam	Periode	Credits	Code
ADMET	Periode 1	6.0	X_432721
Advanced Course on Drug Disp. & Safety Assessment (Mol.Tox.)	Periode 5+6	6.0	X_435681
Chemical Biology	Periode 1	6.0	X_432538
Drug Action	Periode 3	6.0	X_432724
Drug-induced Stress and Cellular Responses	Periode 2	6.0	X_432536
Literature thesis and Colloquium DDS Molecular Toxicology, DDSA	Ac. Jaar (september)	12.0	X_432575
Project Computational Design and Synthesis of Drugs	Periode 4	6.0	X_432734

Research Variant CMCT

- The programme consists of 120 credits
- compulsory courses 36 credits (including a Literature Thesis and Colloquium 12 credits)
 - compulsory choice Ethics and Portfolio Academic Skills 6 credits
 - compulsory choices Major Research Project at least 42 credits
 - optional courses to complete 120 credits.

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

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Opleidingsdelen:

- [Ethics and Academic Skills](#)
- [Deficiency Courses](#)
- [Research project \(choose 42, 48, 54 or 60 EC\)](#)
- [Optional Courses](#)
- [Compulsory Courses](#)

Ethics and Academic Skills

Students need to select a total of 6 credits from the following list.

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

Vakken:

Naam	Periode	Credits	Code
Business and Innovation in Life Science	Periode 1, Periode 3	3.0	X_432539
Business Management in Health and Life Sciences	Periode 2	6.0	AM_470584
Clinical development and clinical trials	Periode 3	6.0	AM_470585
Communication, Organization and Management	Periode 2	6.0	AM_470572
Entrepreneurship in Health and Life Sciences	Periode 2	6.0	AM_470575
Ethics and Academic skills	Ac. Jaar (september)	2.0	X_432726
Ethics and Academic skills	Ac. Jaar (september)	1.0	X_432725
Ethics and Academic Skills	Ac. Jaar (september)	6.0	X_437556
Ethics and Academic Skills	Ac. Jaar (september)	3.0	X_432517

Ethics in Life Sciences	Periode 3	3.0	AM_470707
Ethics in Public Health	Ac. Jaar (september), Periode 3	3.0	AM_470805
Managing Science and Technology in Society	Periode 1	6.0	AM_470586
Qualitative and Quantitative Research Methods	Periode 1	6.0	AM_470582
Science and Communication	Periode 1	6.0	AM_470587
Science in Dialogue	Periode 2	6.0	AM_1002
Science Journalism	Periode 2	6.0	AM_471014
Scientific Writing in English	Periode 2, Periode 6	3.0	X_400592
Teaching Assistant	Ac. Jaar (september)	6.0	X_432742
Teaching Assistant	Ac. Jaar (september)	3.0	X_432741
Tutoring Students	Periode 2	3.0	X_432625
Wetenschapscommunicatie voor Bèta-onderzoekers	Periode 5	6.0	AB_470185

Deficiency Courses

Compulsory course for students without a Bachelor degree Pharmaceutical Sciences VU.

Not specified: all courses start with an summary of required knowledge.

Vakken:

Naam	Periode	Credits	Code
Principles of Pharmaceutical Sciences / Pharmacology	Periode 1	6.0	X_435675

Research project (choose 42, 48, 54 or 60 EC)

Compulsory choice of at least 42 credits.

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

Vakken:

Naam	Periode	Credits	Code
Major Research Project Mol. Tox., Comp. Med. Chem. & Tox.	Ac. Jaar (september)	42.0	X_432553
Major Research Project Mol. Tox., Comp. Med. Chem. & Tox.	Ac. Jaar (september)	48.0	X_432556

Major Research Project Mol. Tox., Comp. Med. Chem. & Tox.	Ac. Jaar (september)	54.0	X_432557
Major Research Project Mol. Tox., Comp. Med. Chem. & Tox.	Ac. Jaar (september)	60.0	X_432558

Optional Courses

The subject options of 30, 24, 18 or 12 credits can be completed with the possibilities below.

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

Vakken:

Naam	Periode	Credits	Code
Applied Theoretical Chemistry	Ac. Jaar (september)	12.0	X_432501
Applied Theoretical Chemistry	Ac. Jaar (september)	6.0	X_435612
Company Training Comp. Med. Chem. & Tox.	Ac. Jaar (september)	18.0	X_432619
Company Training Comp. Med. Chem. & Tox.	Ac. Jaar (september)	24.0	X_432744
Company Training Comp. Med. Chem. & Tox.	Ac. Jaar (september)	30.0	X_432749
Density Functional Theory for Chemists	Ac. Jaar (september)	6.0	X_435111
Density Functional Theory for Chemists	Ac. Jaar (september)	12.0	X_435112
Drug-induced Stress and Cellular Responses	Periode 2	6.0	X_432536
Internship abroad DDS Comp. Med. Chem. & Tox.	Ac. Jaar (september)	18.0	X_432675
Internship abroad DDS Comp. Med. Chem. & Tox.	Ac. Jaar (september)	24.0	X_432754
Internship abroad DDS Comp. Med. Chem. & Tox.	Ac. Jaar (september)	30.0	X_432759
Minor Research Project Biomol. Drug Analysis	Ac. Jaar (september)	24.0	X_432658
Minor Research Project Biomol. Drug Analysis	Ac. Jaar (september)	18.0	X_432689
Minor Research Project Biomol. Drug Analysis	Ac. Jaar (september)	30.0	X_432704
Minor Research Project DDS Medicinal Chemistry, DD&S	Ac. Jaar (september)	18.0	X_432692

Minor Research Project DDS Medicinal Chemistry, DD&S	Ac. Jaar (september)	24.0	X_432693
Minor Research Project DDS Medicinal Chemistry, DD&S	Ac. Jaar (september)	30.0	X_432705
Minor Research Project DDS Molecular Toxicology, CMCT	Ac. Jaar (september)	24.0	X_432632
Minor Research Project DDS Molecular Toxicology, DDSA	Ac. Jaar (september)	18.0	X_432620
Minor Research Project DDS Molecular Toxicology, DDSA	Ac. Jaar (september)	24.0	X_432591
Minor Research Project DDS Molecular Toxicology, DDSA	Ac. Jaar (september)	30.0	X_432592
Minor Research Project DDS, CMCT	Ac. Jaar (september)	30.0	X_432707
Minor Research Project DDS, CMCT	Ac. Jaar (september)	18.0	X_432507
Minor Research Project Med. Chem., Drug Disc. & Target Find.	Ac. Jaar (september)	30.0	X_432706
Minor Research Project Med. Chem., Drug Disc. & Target Find.	Ac. Jaar (september)	18.0	X_432696
Minor Research Project Med. Chem., Drug Disc. & Target.Find.	Ac. Jaar (september)	24.0	X_432635
Signal Transduction in Health and Disease	Periode 2	6.0	X_432535
Supramolecular Chemistry and Nanomaterials	Periode 1	6.0	X_435653

Compulsory Courses

Vakken:

Naam	Periode	Credits	Code
ADMET	Periode 1	6.0	X_432721
Biomolecular Simulation in Medicinal Chemistry and Toxicology	Periode 5+6	6.0	X_432664
Chemical Biology	Periode 1	6.0	X_432538
Computer-Aided Drug Design and Virtual Screening	Periode 2	6.0	X_432673
Drug Action	Periode 3	6.0	X_432724

Literature thesis and Colloquium CMCT	Ac. Jaar (september)	12.0	X_432576
Project Computational Design and Synthesis of Drugs	Periode 4	6.0	X_432734

Research Variant DD&S

The programme consists of 120 credits

- compulsory courses 36 credits (including a Literature Thesis and Colloquium 12 credits)
- compulsory choice Ethics and Portfolio Academic Skills 6 credits
- compulsory choices Major Research Project at least 42 credits
- optional courses to complete 120 credits.

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

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Opleidingsdelen:

- [Ethics and Academic Skills](#)
- [Deficiency Courses](#)
- [Research project \(choose 42, 48, 54 or 60 EC\)](#)
- [Optional Courses](#)
- [Compulsory Courses](#)

Ethics and Academic Skills

Students need to select a total of 6 credits from the following list.

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

Vakken:

Naam	Periode	Credits	Code
Business and Innovation in Life Science	Periode 1, Periode 3	3.0	X_432539
Business Management in Health and Life Sciences	Periode 2	6.0	AM_470584
Clinical development and clinical trials	Periode 3	6.0	AM_470585
Communication, Organization and Management	Periode 2	6.0	AM_470572

Entrepreneurship in Health and Life Sciences	Periode 2	6.0	AM_470575
Ethics and Academic skills	Ac. Jaar (september)	2.0	X_432726
Ethics and Academic skills	Ac. Jaar (september)	1.0	X_432725
Ethics and Academic Skills	Ac. Jaar (september)	6.0	X_437556
Ethics and Academic Skills	Ac. Jaar (september)	3.0	X_432517
Ethics in Life Sciences	Periode 3	3.0	AM_470707
Ethics in Public Health	Ac. Jaar (september), Periode 3	3.0	AM_470805
Managing Science and Technology in Society	Periode 1	6.0	AM_470586
Qualitative and Quantitative Research Methods	Periode 1	6.0	AM_470582
Science and Communication	Periode 1	6.0	AM_470587
Science in Dialogue	Periode 2	6.0	AM_1002
Science Journalism	Periode 2	6.0	AM_471014
Scientific Writing in English	Periode 2, Periode 6	3.0	X_400592
Teaching Assistant	Ac. Jaar (september)	6.0	X_432742
Teaching Assistant	Ac. Jaar (september)	3.0	X_432741
Tutoring Students	Periode 2	3.0	X_432625
Wetenschapscommunicatie voor Bèta-onderzoekers	Periode 5	6.0	AB_470185

Deficiency Courses

Compulsory course for students without a Bachelor degree Pharmaceutical Sciences VU.

Not specified: all courses start with an summary of required knowledge.

Vakken:

Naam	Periode	Credits	Code
Principles of Pharmaceutical Sciences / Pharmacology	Periode 1	6.0	X_435675

Research project (choose 42, 48, 54 or 60 EC)

Compulsory choice of at least 42 credits.

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

Vakken:

Naam	Periode	Credits	Code
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Major Research Project DDS Medicinal Chemistry, DD&S	Ac. Jaar (september)	54.0	X_432545
Major Research Project DDS Medicinal Chemistry, DD&S	Ac. Jaar (september)	42.0	X_432509
Major Research Project DDS Medicinal Chemistry, DD&S	Ac. Jaar (september)	48.0	X_432544
Major Research Project DDS Medicinal Chemistry, DD&S	Ac. Jaar (september)	60.0	X_432546

Optional Courses

The subject options of 30, 24, 18 or 12 credits can be completed with the possibilities below.

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

Vakken:

Naam	Periode	Credits	Code
Biomolecular Simulation in Medicinal Chemistry and Toxicology	Periode 5+6	6.0	X_432664
Company Training DDS Drug Design & Synth.	Ac. Jaar (september)	18.0	X_432671
Company Training DDS Drug Design & Synth.	Ac. Jaar (september)	24.0	X_432745
Company Training DDS Drug Design & Synth.	Ac. Jaar (september)	30.0	X_432750
Computer-Aided Drug Design and Virtual Screening	Periode 2	6.0	X_432673
Drug-induced Stress and Cellular Responses	Periode 2	6.0	X_432536
Internship abroad DDS Drug Design & Synth.	Ac. Jaar (september)	18.0	X_432676
Internship abroad DDS Drug Design & Synth.	Ac. Jaar (september)	24.0	X_432755
Internship abroad DDS Drug Design & Synth.	Ac. Jaar (september)	30.0	X_432760
Minor Research Project Biomol. Drug Analysis	Ac. Jaar (september)	24.0	X_432658
Minor Research Project Biomol. Drug Analysis	Ac. Jaar (september)	18.0	X_432689
Minor Research Project Biomol. Drug Analysis	Ac. Jaar (september)	30.0	X_432704

Minor Research Project DDS Medicinal Chemistry, DD&S	Ac. Jaar (september)	18.0	X_432692
Minor Research Project DDS Medicinal Chemistry, DD&S	Ac. Jaar (september)	24.0	X_432693
Minor Research Project DDS Medicinal Chemistry, DD&S	Ac. Jaar (september)	30.0	X_432705
Minor Research Project DDS Molecular Toxicology, CMCT	Ac. Jaar (september)	24.0	X_432632
Minor Research Project DDS Molecular Toxicology, DDSA	Ac. Jaar (september)	18.0	X_432620
Minor Research Project DDS Molecular Toxicology, DDSA	Ac. Jaar (september)	24.0	X_432591
Minor Research Project DDS Molecular Toxicology, DDSA	Ac. Jaar (september)	30.0	X_432592
Minor Research Project DDS, CMCT	Ac. Jaar (september)	30.0	X_432707
Minor Research Project DDS, CMCT	Ac. Jaar (september)	18.0	X_432507
Minor Research Project Med. Chem., Drug Disc. & Target Find.	Ac. Jaar (september)	30.0	X_432706
Minor Research Project Med. Chem., Drug Disc. & Target Find.	Ac. Jaar (september)	18.0	X_432696
Minor Research Project Med. Chem., Drug Disc. & Target.Find.	Ac. Jaar (september)	24.0	X_432635
Signal Transduction in Health and Disease	Periode 2	6.0	X_432535

Compulsory Courses

Vakken:

Naam	Periode	Credits	Code
ADMET	Periode 1	6.0	X_432721
Chemical Biology	Periode 1	6.0	X_432538
Drug Action	Periode 3	6.0	X_432724
Literature thesis and Colloquium DDS Medical Chemistry, DD&S	Ac. Jaar (september)	12.0	X_432573
Physical-Organic Chemistry	Periode 1	6.0	X_435663

Project Computational Design and Synthesis of Drugs	Periode 4	6.0	X_432734
Synthetic Approaches in Medicinal Chemistry	Periode 2	6.0	X_435685

Research Variant Biomarkers and CCA

Opleidingsdelen:

- Ethics and Academic Skills
- Deficiency Courses
- Choose 1 out of 3
- Compulsory Choice Research project (Major) including report
- Elective Space
- Compulsory Courses

Ethics and Academic Skills

Students need to select a total of 6 credits from the following list.

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

Vakken:

Naam	Periode	Credits	Code
Business and Innovation in Life Science	Periode 1, Periode 3	3.0	X_432539
Business Management in Health and Life Sciences	Periode 2	6.0	AM_470584
Clinical development and clinical trials	Periode 3	6.0	AM_470585
Communication, Organization and Management	Periode 2	6.0	AM_470572
Entrepreneurship in Health and Life Sciences	Periode 2	6.0	AM_470575
Ethics and Academic skills	Ac. Jaar (september)	2.0	X_432726
Ethics and Academic skills	Ac. Jaar (september)	1.0	X_432725
Ethics and Academic Skills	Ac. Jaar (september)	6.0	X_437556
Ethics and Academic Skills	Ac. Jaar (september)	3.0	X_432517
Ethics in Life Sciences	Periode 3	3.0	AM_470707
Ethics in Public Health	Ac. Jaar (september), Periode 3	3.0	AM_470805
Managing Science and Technology in Society	Periode 1	6.0	AM_470586
Qualitative and Quantitative Research Methods	Periode 1	6.0	AM_470582

Science and Communication	Periode 1	6.0	AM_470587
Science in Dialogue	Periode 2	6.0	AM_1002
Science Journalism	Periode 2	6.0	AM_471014
Scientific Writing in English	Periode 2, Periode 6	3.0	X_400592
Teaching Assistant	Ac. Jaar (september)	6.0	X_432742
Teaching Assistant	Ac. Jaar (september)	3.0	X_432741
Tutoring Students	Periode 2	3.0	X_432625
Wetenschapscommunicatie voor Bèta-onderzoekers	Periode 5	6.0	AB_470185

Deficiency Courses

Compulsory course for students without a Bachelor degree Pharmaceutical Sciences VU.

Not specified: all courses start with an summary of required knowledge.

Vakken:

Naam	Periode	Credits	Code
Principles of Pharmaceutical Sciences / Pharmacology	Periode 1	6.0	X_435675

Choose 1 out of 3

Choice 1 out of 3 depending on the Major Project (to be discussed with the master coordinator)

Vakken:

Naam	Periode	Credits	Code
High-Throughput Screening	Periode 2	6.0	X_435047
Mass Spectrometry	Periode 2	6.0	X_435604
Protein Analysis	Periode 5	6.0	X_435045

Compulsory Choice Research project (Major) including report

Compulsory Choice of at least 42 ec.

Vakken:

Naam	Periode	Credits	Code
Major Research Project Biomol. Drug Analysis	Ac. Jaar (september)	42.0	X_432564
Major Research Project Biomol. Drug Analysis	Ac. Jaar (september)	48.0	X_432567

Major Research Project Biomol. Drug Analysis	Ac. Jaar (september)	54.0	X_432568
Major Research Project Biomol. Drug Analysis	Ac. Jaar (september)	60.0	X_432569

Elective Space

Students need to select 30, 24, 18 or 12 credits from the following list:

Vakken:

Naam	Periode	Credits	Code
Biomolecular Simulation in Medicinal Chemistry and Toxicology	Periode 5+6	6.0	X_432664
Company Training DDS Biomol. Drug Analysis	Ac. Jaar (september)	18.0	X_432670
Company Training DDS Biomol. Drug Analysis	Ac. Jaar (september)	24.0	X_432743
Company Training DDS Biomol. Drug Analysis	Ac. Jaar (september)	30.0	X_432748
Computer-Aided Drug Design and Virtual Screening	Periode 2	6.0	X_432673
Drug-induced Stress and Cellular Responses	Periode 2	6.0	X_432536
Internship abroad DDS Biomol. Drug Analysis	Ac. Jaar (september)	24.0	X_432753
Internship abroad DDS Biomol. Drug Analysis	Ac. Jaar (september)	18.0	X_432674
Internship abroad DDS Biomol. Drug Analysis	Ac. Jaar (september)	30.0	X_432758
Minor Research Project Biomol. Drug Analysis	Ac. Jaar (september)	24.0	X_432658
Minor Research Project Biomol. Drug Analysis	Ac. Jaar (september)	18.0	X_432689
Minor Research Project Biomol. Drug Analysis	Ac. Jaar (september)	30.0	X_432704
Minor Research Project DDS Medicinal Chemistry, DD&S	Ac. Jaar (september)	18.0	X_432692
Minor Research Project DDS Medicinal Chemistry, DD&S	Ac. Jaar (september)	24.0	X_432693
Minor Research Project DDS Medicinal Chemistry, DD&S	Ac. Jaar (september)	30.0	X_432705
Minor Research Project DDS Molecular Toxicology, CMCT	Ac. Jaar (september)	24.0	X_432632

Minor Research Project DDS Molecular Toxicology, DDSA	Ac. Jaar (september)	18.0	X_432620
Minor Research Project DDS Molecular Toxicology, DDSA	Ac. Jaar (september)	24.0	X_432591
Minor Research Project DDS Molecular Toxicology, DDSA	Ac. Jaar (september)	30.0	X_432592
Minor Research Project DDS, CMCT	Ac. Jaar (september)	30.0	X_432707
Minor Research Project DDS, CMCT	Ac. Jaar (september)	18.0	X_432507
Minor Research Project Med. Chem., Drug Disc. & Target Find.	Ac. Jaar (september)	30.0	X_432706
Minor Research Project Med. Chem., Drug Disc. & Target Find.	Ac. Jaar (september)	18.0	X_432696
Minor Research Project Med. Chem., Drug Disc. & Target Find.	Ac. Jaar (september)	24.0	X_432635
Signal Transduction in Health and Disease	Periode 2	6.0	X_432535

Compulsory Courses

Compulsory Courses

Vakken:

Naam	Periode	Credits	Code
ADMET	Periode 1	6.0	X_432721
Bio-analysis & Clinical Diagnostics	Periode 1	6.0	X_432765
Chemical Biology	Periode 1	6.0	X_432538
Drug Action	Periode 3	6.0	X_432724
Literature thesis and Colloquium	Ac. Jaar (september)	12.0	X_432577
Omics-procedures in molecular clinical Diagnostics	Periode 5	6.0	X_432766
Project Computational Design and Synthesis of Drugs	Periode 4	6.0	X_432734

Double Degree

Opleidingsdelen:

- Ethics and Academic Skills
- Elective Space
- Choice Thesis 1 out of 6
- Choice Master Internship Copenhagen
- Specialization Courses Copenhagen University - Line 1
- Specialization Courses Copenhagen University - Line 2
- Specialization Courses Copenhagen University - Medicinal Chemistry
- Compulsory Courses

Ethics and Academic Skills

Students need to select a total of 6 credits from the following list.

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

Vakken:

Naam	Periode	Credits	Code
Business and Innovation in Life Science	Periode 1, Periode 3	3.0	X_432539
Business Management in Health and Life Sciences	Periode 2	6.0	AM_470584
Clinical development and clinical trials	Periode 3	6.0	AM_470585
Communication, Organization and Management	Periode 2	6.0	AM_470572
Entrepreneurship in Health and Life Sciences	Periode 2	6.0	AM_470575
Ethics and Academic skills	Ac. Jaar (september)	2.0	X_432726
Ethics and Academic skills	Ac. Jaar (september)	1.0	X_432725
Ethics and Academic Skills	Ac. Jaar (september)	6.0	X_437556
Ethics and Academic Skills	Ac. Jaar (september)	3.0	X_432517
Ethics in Life Sciences	Periode 3	3.0	AM_470707
Ethics in Public Health	Ac. Jaar (september), Periode 3	3.0	AM_470805
Managing Science and Technology in Society	Periode 1	6.0	AM_470586
Qualitative and Quantitative Research Methods	Periode 1	6.0	AM_470582
Science and Communication	Periode 1	6.0	AM_470587
Science in Dialogue	Periode 2	6.0	AM_1002
Science Journalism	Periode 2	6.0	AM_471014
Scientific Writing in English	Periode 2, Periode 6	3.0	X_400592
Teaching Assistant	Ac. Jaar (september)	6.0	X_432742
Teaching Assistant	Ac. Jaar (september)	3.0	X_432741
Tutoring Students	Periode 2	3.0	X_432625

Wetenschapscommunicatie voor Bèta-onderzoekers	Periode 5	6.0	AB_470185
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Elective Space

Vakken:

Naam	Periode	Credits	Code
Advanced Course on Drug Disp. & Safety Assessment (Mol.Tox.)	Periode 5+6	6.0	X_435681
Bio-analysis & Clinical Diagnostics	Periode 1	6.0	X_432765
Biomolecular Simulation in Medicinal Chemistry and Toxicology	Periode 5+6	6.0	X_432664
Computer-Aided Drug Design and Virtual Screening	Periode 2	6.0	X_432673
Drug-induced Stress and Cellular Responses	Periode 2	6.0	X_432536
Minor Research Project Biomol. Drug Analysis	Ac. Jaar (september)	18.0	X_432689
Minor Research Project DDS Molecular Toxicology, DDSA	Ac. Jaar (september)	18.0	X_432620
Minor Research Project DDS, CMCT	Ac. Jaar (september)	18.0	X_432507
Minor Research Project Med. Chem., Drug Disc. & Target Find.	Ac. Jaar (september)	18.0	X_432696
Omics-procedures in molecular clinical Diagnostics	Periode 5	6.0	X_432766
Physical-Organic Chemistry	Periode 1	6.0	X_435663
Signal Transduction in Health and Disease	Periode 2	6.0	X_432535
Synthetic Approaches in Medicinal Chemistry	Periode 2	6.0	X_435685

Choice Thesis 1 out of 6

Vakken:

Naam	Periode	Credits	Code
Colloquium and Literature Thesis	Ac. Jaar (september)	12.0	X_432574

Literature thesis and Colloquium	Ac. Jaar (september)	12.0	X_432577
Literature thesis and Colloquium CMCT	Ac. Jaar (september)	12.0	X_432576
Literature thesis and Colloquium DDS Medical Chemistry, DD&S	Ac. Jaar (september)	12.0	X_432573
Literature thesis and Colloquium DDS Molecular Toxicology, DDSA	Ac. Jaar (september)	12.0	X_432575

Choice Master Internship Copenhagen

Vakken:

Naam	Periode	Credits	Code
Master Thesis DDS, Copenhagen University	Ac. Jaar (september)	37.5	X_432828
Master Thesis DDS, Copenhagen University	Ac. Jaar (september)	45.0	X_432829
Master Thesis DDS, Copenhagen University	Ac. Jaar (september)	52.5	X_432830
Master Thesis DDS, Copenhagen University	Ac. Jaar (september)	60.0	X_432831

Specialization Courses Copenhagen University - Line 1

Compulsory choice of 15 ec

Vakken:

Naam	Periode	Credits	Code
Advanced Pharmacognosy		7.5	X_437557
Advanced spectroscopy Copenhagen University (Double Degree)		7.5	X_437558
Advanced synthetic organic Chemistry		7.5	X_437559
Advances in medicinal chemistry Research	Periode 4+5	7.5	X_437560
In vitro Methods in Pharmacology		7.5	X_437568
IPR and Innovation in pharmaceutical Sciences	Periode 4	7.5	X_437569
Medicinal and Biostructural Chemistry	Periode 1	7.5	X_437571
Pharmacokinetics and Pharmacodynamics		7.5	X_437578

Pharmacology: from Physiology to Therapy	Periode 4	7.5	X_437579
Statistical Design of Experiments	Periode 2+3	7.5	X_437583
Structural and computational medicinal Chemistry	Periode 2+3	7.5	X_437584

Specialization Courses Copenhagen University - Line 2

Compulsory choice of 15 ec

Vakken:

Naam	Periode	Credits	Code
IPR and Innovation in pharmaceutical Sciences	Periode 4	7.5	X_437569
Medicinal and Biostructural Chemistry	Periode 1	7.5	X_437571
Pharmaceutical Analytical Chemistry	Periode 4	7.5	X_437574
Pharmaceutical Formulation of Peptides and Proteins	Periode 1	7.5	X_437575
Pharmaceutical Preformulation		7.5	X_437577
Research Project in Pharmaceutics and Drug Discovery	Periode 5+6	15.0	X_437582
Statistical Design of Experiments	Periode 2+3	7.5	X_437583

Specialization Courses Copenhagen University - Medicinal Chemistry

Vakken:

Naam	Periode	Credits	Code
Advanced spectroscopy Copenhagen University (Double Degree)		7.5	X_437558
Advances in medicinal chemistry Research	Periode 4+5	7.5	X_437560
Applied Drug Metabolism		7.5	X_437561
Biomolecular Drug Discovery		7.5	X_437563
Biophysical Techniques		7.5	X_437572
Crystallography		7.5	X_437564
IPR and Innovation in pharmaceutical Sciences	Periode 4	7.5	X_437569

Pharmaceutical Formulation of Peptides and Proteins	Periode 1	7.5	X_437575
Pharmaceutical Preformulation		7.5	X_437577

Compulsory Courses

Vakken:

Naam	Periode	Credits	Code
ADMET	Periode 1	6.0	X_432721
Chemical Biology	Periode 1	6.0	X_432538
Drug Action	Periode 3	6.0	X_432724
Project Computational Design and Synthesis of Drugs	Periode 4	6.0	X_432734

Social Variant

Due to the growing complexity of technological and medical issues and the interaction with society, organisations working in this sector have a growing and urgent need for academic professionals in the natural and life sciences, who have knowledge of policy management and entrepreneurship. The Society oriented variant offers students with a bachelor degree in the natural and life sciences the chance to combine a specialization in this field with a specialization in research.

To complete the entire Master programme (120 credits) of the Communication, education or social variant, the student has to choose 60 credits in DDS courses.

Opleidingsdelen:

- [DDS courses](#)
- [Deficiency Courses](#)
- [Compulsory Courses](#)

DDS courses

This specialization is intended for students with a BSc degree in any of the bèta-studies who want to specialize in communication. The programme focuses on science communication theory, research and practice. The programme of the communication (C) specialization is 1 year (60 credits). This specialization may not be combined with the Societal specialization (M) or the Education specialization (E). C-courses are shared with master students from the Faculty of Earth and Life Sciences.

To complete the entire Master programme (120 credits) of the Communication, education or social variant, the student has to choose 60 credits in DDS courses.

Opleidingsdelen:

- Specialisation Courses
- Literature and Colloquium (compulsory choose 1 of 5)
- DDS Research project (choose 1 of 5) (24 EC)

Specialisation Courses

In consultation with the master coordinator and depending of the choosen specialization 6 credits have to be chosen from the following list.

Vakken:

Naam	Periode	Credits	Code
Biomolecular Simulation in Medicinal Chemistry and Toxicology	Periode 5+6	6.0	X_432664
Computer-Aided Drug Design and Virtual Screening	Periode 2	6.0	X_432673
Drug-induced Stress and Cellular Responses	Periode 2	6.0	X_432536
Mass Spectrometry	Periode 2	6.0	X_435604
Physical-Organic Chemistry	Periode 1	6.0	X_435663
Signal Transduction in Health and Disease	Periode 2	6.0	X_432535
Synthetic Approaches in Medicinal Chemistry	Periode 2	6.0	X_435685

Literature and Colloquium (compulsory choose 1 of 5)

Students need to select a total of 6 credits or more from the following list.

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

Vakken:

Naam	Periode	Credits	Code
Colloquium and Literature Thesis CMCT (C,E,M)	Ac. Jaar (september)	6.0	X_432571
Colloquium and Literature Thesis DDS BDA (C,E,M)	Ac. Jaar (september)	6.0	X_432570
Colloquium and Literature Thesis DDS MC, DD&S (C,E,M)	Ac. Jaar (september)	6.0	X_432623

Colloquium and Literature Thesis DDS MC, DDTF (C,E,M)	Ac. Jaar (september)	6.0	X_432624
Colloquium and Literature Thesis DDS Molecular Toxicology, DDSA (C,E,M)	Ac. Jaar (september)	6.0	X_432572

DDS Research project (choose 1 of 5) (24 EC)

Students need to select at least 30 credits or more from the following list.

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

Vakken:

Naam	Periode	Credits	Code
Major Research Project DDS Biomolecular Drug Analysis (C,E,M)	Ac. Jaar (september)	24.0	X_432727
Major Research Project DDS Medicinal Chemistry, DD&S	Ac. Jaar (september)	24.0	X_432728
Major Research Project DDS Medicinal Chemistry, DDTF	Ac. Jaar (september)	24.0	X_432729
Major Research Project DDS Molecular Toxicology, CMCT	Ac. Jaar (september)	24.0	X_432730
Major Research Project DDS Molecular Toxicology, DDSA (C,E,M)	Ac. Jaar (september)	24.0	X_432731

Deficiency Courses

Compulsory course for students without a Bachelor degree Pharmaceutical Sciences VU.

Not specified: all courses start with an summary of required knowledge.

Vakken:

Naam	Periode	Credits	Code
Principles of Pharmaceutical Sciences / Pharmacology	Periode 1	6.0	X_435675

Compulsory Courses

Vakken:

Naam	Periode	Credits	Code
ADMET	Periode 1	6.0	X_432721
Analysis of Governmental Policy	Periode 1	6.0	AM_470571
Business Management in Health and Life Sciences	Periode 2	6.0	AM_470584
Chemical Biology	Periode 1	6.0	X_432538
Clinical development and clinical trials	Periode 3	6.0	AM_470585
Communication, Organization and Management	Periode 2	6.0	AM_470572
Disability and Development	Periode 2	6.0	AM_470588
Drug Action	Periode 3	6.0	X_432724
Entrepreneurship in Health and Life Sciences	Periode 2	6.0	AM_470575
Health, Globalisation and Human Rights	Periode 2	6.0	AM_470818
Internship Societal Specialisation	Ac. Jaar (september)	30.0	AM_471147
Policy, Politics and Participation	Periode 2	6.0	AM_470589
Project Computational Design and Synthesis of Drugs	Periode 4	6.0	X_432734
Qualitative and Quantitative Research Methods	Periode 1	6.0	AM_470582
Science in Dialogue	Periode 2	6.0	AM_1002

ADMET

Vakcode	X_432721 ()
Periode	Periode 1
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. J.N.M. Commandeur
Docent(en)	dr. J.N.M. Commandeur
Lesmethode(n)	Hoorcollege
Niveau	400

Doel vak

To get familiar with the biochemical and physiological processes underlying the pharmacokinetics and adverse side effects of drugs, and strategies to improve ADMET-properties by structural modification

Inhoud vak

Of the thousands of novel compounds that are developed by drug discovery project teams, only a fraction have the appropriate pharmacokinetic properties to become a drug product. Pharmacokinetics is determined by the complex processes involved in absorption (A), distribution (D), metabolism (M) and excretion (E) of the drug, the so-called ADME-processes. Furthermore, 20% of the drug entering the clinical development phase fail, because of unwanted/toxic (T) side-effects.

In this course, the students will be familiarized with:

- the pharmacokinetic concepts and the mathematical models by which the time-course of plasma- and tissueconcentration of a drug can be described and which plays an important role in identification of the pharmacokinetic defect(s) of a drug.
- experimental and computational approaches used to predict the ADMET-properties of a new chemical entity;
- the relationship between physico-chemical properties (pKa, logP, logD, solubility, permeability, etc) and ADME-properties, and analytical-chemical approaches to determine physico-chemical properties;
- role of drug metabolism in adverse drug reactions: metabolic stability, drug-drug interactions, active metabolites.
- strategies to improve ADME-properties by structural modification of compounds;

Onderwijsvorm

lectures and case studies.

Toetsvorm

Written exam and case reports.

Literatuur

Book: 'Drug-like properties: concepts, structure design and methods. From ADME to Toxicity optimization.' Eds. E.H. Kerns and L. Di, Academic Press, 2008, ISBN: 978-0-1236-9520-8.

Doelgroep

mDDS-BCCA, mDDS-CMCT, mDDS-DD&S, mDDS-DDSA, mDDS-DDTF, mDDS-C-var, mDDS-E-var, mDDS-M-var

Advanced Course on Drug Disp. & Safety Assessment (Mol.Tox.)

Vakcode	X_435681 (435681)
Periode	Periode 5+6
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	prof. dr. N.P.E. Vermeulen
Docent(en)	prof. dr. N.P.E. Vermeulen
Lesmethode(n)	Werkcollege
Niveau	500

Doel vak

Obtaining an in-depth overview and knowledge of drug disposition and safety assessment, with emphasis on molecular and biochemical mechanisms.

Inhoud vak

After a general introduction in toxicology, drug absorption, drug distribution, drug elimination, drug metabolism and toxicokinetics will be treated. More general mechanisms of toxicity, such as mutagenesis, carcinogenesis, developmental toxicity and idiosyncratic drug reactions, will then be treated. Subsequently, organ-selective toxicities of drugs and other chemicals will be treated, with special emphasis on molecular and biochemical mechanism and structure dependencies. Methods to test toxicities as well as the evaluation of toxicities in terms of safety and health risks will also be treated. Special attention will be given to biotransformation enzymes and their role in drug toxication and detoxication and to the most recent developments in molecular toxicology.

Toetsvorm

Written examination, blackboard and cases.

Literatuur

Casarett, and Doull, Toxicology: The Basic Science of Poisons 7th ed. New York: Pergamon Press (ISBN 987-0-07-147051-3).
Selected research papers.

Vereiste voorkennis

Courses "Molecular pharmacology & toxicology of drugs and/or Drug toxicity: concepts and experimentele approaches" or equivalent courses are advised.

Doelgroep

mDDS-DDSA, mDDS-DDTF

Advanced Pharmacognosy

Vakcode	X_437557 ()
Credits	7.5
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	ir. A.A. Timmer
Niveau	500

Overige informatie

This course is taught at Copenhagen University (KU)
Detailed course descriptions at KU are available from:
<http://www.farma.ku.dk/index.php/Course-catalogue/4635/0/>

Contact your master coordinator to discuss your complete VU en KU programme

Advanced spectroscopy Copenhagen University (Double Degree)

Vakcode	X_437558 ()
Credits	7.5
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen

Coördinator	ir. A.A. Timmer
Niveau	500

Overige informatie

This course is taught at Copenhagen University (KU)

Detailed course descriptions at KU are available from:

<http://www.farma.ku.dk/index.php/Course-catalogue/4635/0/>

Contact your master coordinator to discuss your complete VU en KU programme

Advanced synthetic organic Chemistry

Vakcode	X_437559 ()
Credits	7.5
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	ir. A.A. Timmer
Niveau	500

Overige informatie

This course is taught at Copenhagen University (KU)

Detailed course descriptions at KU are available from:

<http://www.farma.ku.dk/index.php/Course-catalogue/4635/0/>

Contact your master coordinator to discuss your complete VU en KU programme

Advances in medicinal chemistry Research

Vakcode	X_437560 ()
Periode	Periode 4+5
Credits	7.5
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	ir. A.A. Timmer
Niveau	500

Overige informatie

This course is taught at Copenhagen University (KU)

Detailed course descriptions at KU are available from:

<http://www.farma.ku.dk/index.php/Course-catalogue/4635/0/>

Contact your master coordinator to discuss your complete VU en KU programme

Analysis of Governmental Policy

Vakcode	AM_470571 ()
Periode	Periode 1
Credits	6.0

Voertaal	Engels
Faculteit	Fac. der Aard- en Levenswetenschappen
Coördinator	prof. dr. J.T. de Cock Buning
Docent(en)	prof. dr. J.T. de Cock Buning
Lesmethode(n)	Hoorcollege, Werkgroep, Computerpracticum
Niveau	500

Doel vak

- To acquire critical knowledge regarding different policy models and theories
- To master the correct use of central concepts in political and policy discourses.
- To further deepen your analytic skills with respect to the critical assessment of a complex societal question or dilemma in the health and life science;
- To learn to integrate science- specific knowledge with the knowledge and skills of other disciplines of the social sciences
- To practice skills in data collection and analysis
- To learn to set up valid lines of argumentation;
- To learn to translate research findings into policy recommendations;
- To get experienced in writing a policy advisory report;
- To improve your communication skills;
- To improve your skills in working effectively in a project team, through team building, team analysis and feedback.

Inhoud vak

Governmental policy affects millions of people and is thus object of intensive debate and target of strong societal forces, like political parties, media and interest groups. Being an advisor or policy maker requires a thorough understanding of the dynamics of policy making, as well as from the psychological side as from the more social structures and their influence on a deliberative democracy.

The course contains several lectures on theoretical concepts and models concerning policy analysis. Furthermore you will be challenged, under supervision, to apply and practice these concepts and models in the project assignment. From the very first day, you will be part of a project team of about ten students. You are confronted with a real policy problem from an external commissioning institution (e. g. a non-governmental organization, a Ministry, an advisory council). Within those 4 weeks you will collect data by literature review and interviews and conduct an interdisciplinary analysis on the basis of which you provide an advice. Specific attention is paid to working in a project team and team building. At the end of the course, you prepare an advisory report. On the last day of the course you present the report to the representative of the external institution who commissioned the project. In that presentation your team will highlight the main results of your analysis and defend the recommendations you propose.

Onderwijsvorm

Analysis of Governmental Policy is a fulltime course of four weeks (6 ECTS). The most recent course schedule is to be found on Blackboard. The total study time is 160 hours. Tuition methods include lectures, training workshops, and self-study.

The different elements have the following study time:

- lectures: 15 hours
- project: 147 hours (within the project: 18x 1 hour coach meeting)

- self study: (within the project, defined in the group)
- examination: 2 hours

Please note that attendance to the project meetings is compulsory. Attendance to the lectures is highly recommended. In our experience, relying on self-study alone is insufficient to pass the exam

Toetsvorm

Written exam (25%) and individual evaluation based on personal performance in the project team (50%), and assessment of various group products (report and presentation (25%)). Exam has to be passed successfully.

Literatuur

Buse, Mays and Walt: "Making Health Policy" McGrawHill/Open University press. (at least 2nd edition 2012).

Aanbevolen voorkennis

The project integrates the learned lessons from the first compulsory MPA courses: Qualitative & Quantitative Methods.\

Doelgroep

Compulsory course within the Masterprogramme Management, Policy Analysis and entrepreneurship for the health and life sciences (MPA) and the Societal differentiation of Health, Life and Natural Sciences Masters programmes.

Overige informatie

The case is policy analysis and advice, but the exercised methods and skills are equally applicable to strategic marketing advice or evaluation studies. The teams will be coached by workgroup leaders.

Applied Drug Metabolism

Vakcode	X_437561 ()
Credits	7.5
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	ir. A.A. Timmer
Niveau	500

Overige informatie

This course is taught at Copenhagen University (KU)
Detailed course descriptions at KU are available from:
<http://www.farma.ku.dk/index.php/Course-catalogue/4635/0/>

Contact your master coordinator to discuss your complete VU en KU programme

Applied Theoretical Chemistry

Vakcode	X_432501 (432501)
Periode	Ac. Jaar (september)
Credits	12.0

Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	prof. dr. F.M. Bickelhaupt
Niveau	500

Doel vak

Understanding and predicting molecular structure and chemical reactivity.

Inhoud vak

Theoretical Chemistry has become an integral part of modern chemistry. Numerous properties can be computed with chemical accuracy, thus, enabling one to study or predict quantities that are hardly or not at all accessible through experimental techniques. But with this, the potential of theoretical chemistry is still not exhausted. In order to design syntheses, catalysts or pharmacologically active molecules in a more rational fashion (i.e., instead of using a trial-and-error approach), it is of crucial importance to combine accuracy with solid and profound insight into the underlying mechanisms in the electronic structure. This holds true also if such investigations are done in the form of computational chemistry. Such insight can be obtained through detailed analyses of the computed wavefunction and bond energy. The purpose of this course is to acquire the skills that one needs for a minute understanding of the nature of a chemical phenomenon. Here, the molecular orbital (MO) model contained in the so-called Kohn-Sham density functional theory plays a pivotal role.

Onderwijsvorm

The course consists of an intensive theoretical introduction in the first week followed by a research project in which the student participates in one of the research lines of the group.

Toetsvorm

Examination of the course occurs on the basis of a research report.

Literatuur

Parts of: (a) T. A. Albright, J. K. Burdett, M.-H. Whangbo, *Orbital Interactions in Chemistry*, Wiley-Interscience, New York, 1985; (b) F.M. Bickelhaupt, E.J. Baerends, *Kohn-Sham Density Functional Theory: Predicting and Understanding Chemistry*, in: *Rev. Comput. Chem.*; K.B. Lipkowitz, D.B. Boyd, Eds.; Wiley-VCH: New York, Vol. 15.

Aanbevolen voorkennis

BSc Scheikunde of BSc Farmaceutische Wetenschappen

Doelgroep

MSc Chemistry en MSc DDS

Applied Theoretical Chemistry

Vakcode	X_435612 (435612)
Periode	Ac. Jaar (september)
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen

Coördinator	prof. dr. F.M. Bickelhaupt
Niveau	500

Doel vak

Understanding and predicting molecular structure and chemical reactivity.

Inhoud vak

Theoretical Chemistry has become an integral part of modern chemistry. Numerous properties can be computed with chemical accuracy, thus, enabling one to study or predict quantities that are hardly or not at all accessible through experimental techniques. But with this, the potential of theoretical chemistry is still not exhausted. In order to design syntheses, catalysts or pharmacologically active molecules in a more rational fashion (i.e., instead of using a trial-and-error approach), it is of crucial importance to combine accuracy with solid and profound insight into the underlying mechanisms in the electronic structure. This holds true also if such investigations are done in the form of computational chemistry. Such insight can be obtained through detailed analyses of the computed wavefunction and bond energy. The purpose of this course is to acquire the skills that one needs for a minute understanding of the nature of a chemical phenomenon. Here, the molecular orbital (MO) model contained in the so-called Kohn-Sham density functional theory plays a pivotal role.

Onderwijsvorm

The course consists of an intensive theoretical introduction in the first week followed by a research project in which the student participates in one of the research lines of the group.

Toetsvorm

Examination of the course occurs on the basis of a research report.

Literatuur

Parts of: (a) T. A. Albright, J. K. Burdett, M.-H. Whangbo, *Orbital Interactions in Chemistry*, Wiley-Interscience, New York, 1985; (b) F.M. Bickelhaupt, E.J. Baerends, *Kohn-Sham Density Functional Theory: Predicting and Understanding Chemistry*, in: *Rev. Comput. Chem.*; K.B. Lipkowitz, D.B. Boyd, Eds.; Wiley-VCH: New York, Vol. 15.

Aanbevolen voorkennis

BSc Scheikunde of BSc Farmaceutische Wetenschappen

Doelgroep

mCh, mDDS

Overige informatie

This course exists in two variants. The first variant is worth 6 cp (code 435612) and can be extended to 12 cp (code 432501).

Bio-analysis & Clinical Diagnostics

Vakcode	X_432765 ()
Periode	Periode 1
Credits	6.0
Voertaal	Engels

Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. H. Lingeman
Docent(en)	dr. H. Lingeman
Lesmethode(n)	Hoorcollege
Niveau	400

Doel vak

Giving a clear account on the instrumental bio-analytical techniques and strategies in bio-analysis and clinical diagnostics.

Inhoud vak

This basic course on bio-analytical and clinical chemistry is focusing on decision trees (strategic decisions) that can be used during the method development and optimization of analytical procedures to determine both endogenous and exogenous compounds in complex biological samples. Approaches and procedures with respect to sampling, sample preparation, separation, spectroscopy, electrochemistry, as well as immunological and enzymatic procedures will be dealt with. Case studies will be used to clarify the decisions that have to be taken.

Onderwijsvorm

Lectures and tutorials.

Toetsvorm

Written or oral examination.

Literatuur

Hand-outs (electronically available).

Aanbevolen voorkennis

Basic knowledge of biochemistry, chromatography, electrophoresis and mass spectrometry.

Doelgroep

mCH-AS, mDDS, mMNS

Biomolecular Drug Discovery

Vakcode	X_437563 ()
Credits	7.5
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	ir. A.A. Timmer
Niveau	500

Overige informatie

This course is taught at Copenhagen University (KU)

Detailed course descriptions at KU are available from:

<http://www.farma.ku.dk/index.php/Course-catalogue/4635/0/>

Contact your master coordinator to discuss your complete VU en KU programme

Biomolecular Simulation in Medicinal Chemistry and Toxicology

Vakcode	X_432664 (432664)
Periode	Periode 5+6
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. D.P. Geerke
Docent(en)	dr. C. de Graaf, dr. D.P. Geerke
Lesmethode(n)	Hoorcollege
Niveau	400

Doel vak

Providing theoretical background on biomolecular simulation and free-energy calculation methods and an overview of recent developments, applications, and trends.

Inhoud vak

Methods and techniques for calculating molecular energies of biomolecular systems (molecular mechanics / force fields) and for flexibility analysis (conformational search methods).

Theory (statistical mechanics), method development (algorithms) and application of molecular dynamics simulations and free energy calculations.

Proper and efficient treatment of nonbonded interactions: force field development, boundary conditions, long-range forces.

Analysis of simulation data: secondary structure, solvation and thermodynamic properties, transport and correlation.

Special focus on methods to predict binding affinities from MD simulation (thermodynamic integration, free energy perturbation) and their application.

Onderwijsvorm

Lectures, tutorials, exercises, and self-study.

Toetsvorm

Written or oral examination

Literatuur

Leach, A.R., Molecular Modelling: Principles and Applications. (ISBN 0-582-38210-6).

Recent review articles that will be made available via Blackboard.

Vereiste voorkennis

Course "Computational Design and Synthesis of Drugs"

Aanbevolen voorkennis

Course "Computational Design and Synthesis of Drugs"

Doelgroep

mDDS

Overige informatie

Please contact the coordinator two weeks prior to the start of the course (e-mail: dgeerke@few.vu.nl).

Biophysical Techniques

Vakcode	X_437572 ()
Credits	7.5
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	ir. A.A. Timmer
Niveau	500

Overige informatie

This course is taught at Copenhagen University (KU)

Detailed course descriptions at KU are available from:

<http://www.farma.ku.dk/index.php/Course-catalogue/4635/0/>

Contact your master coordinator to discuss your complete VU en KU programme

Business and Innovation in Life Science

Vakcode	X_432539 (432539)
Periode	Periode 1, Periode 3
Credits	3.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	drs. P. van Hoorn
Docent(en)	prof. dr. I.J.P. de Esch, drs. P. van Hoorn
Lesmethode(n)	Hoorcollege
Niveau	400

Doel vak

This course positions the field of Biomolecular Sciences in a broader context by sketching out the Pharma-Biotech industrial landscape.

Inhoud vak

The Pharma-Biotech industrial landscape is presented in several ways;

1. business and value chain modeling common in these industries
2. product strategy and life-cycle dynamic in the Pharma and Biotech sector
3. innovation and the position of Genomics and Proteomics in the future of Health and Life Sciences

In addition to lectures on the above 3 topics, students will be handed certain texts and articles that illustrate the 'State of the Art' in the Pharma-Biotech industrial sector from both a product development as well as from a business development standpoint.

As a result the student will get insight into the business decisions and dynamic that are linked to basic bioscientific research through product development. The course thus aims to provide a first general overview of how life science and business are interwoven in everyday industrial practice.

Two `real-life` cases will be discussed and students will get a group assignment in which the cases will have to be analyzed and certain questions will have to be answered. Each group writes a short analysis and subsequently presents this in front of the whole group.

As part of this course, a guest speaker from industry will be giving a lecture.

Onderwijsvorm

Lectures, guest lectures by industrial and Life Science venture capital firm representatives, final presentation. Two harvard case will be used including assignments.

Toetsvorm

In order to receive 3 credits for this course, the following criteria must be met:

- the written exam must be passed with a grade 6 or more (60% of final grade)
- case analysis and presentation in front of the entire class with a grade 6 or more (40%)

Written exam w 4 open questions.

Literatuur

Rydzewski - Real world Drug Discovery , A chemist's guide to Biotech and Pharmaceutical Research (selected chapters)- 2008

Additional literature provided on Blackboard.

Vereiste voorkennis

Bachelor Physics, Chemistry, Mathematics, Biology, Medical Biology
Pharmaceutical Sciences, Medical Natural Science, Bachelor Science
Business and Innovation.

Aanbevolen voorkennis

Completed Bachelor Physics, Chemistry, Mathematics, Biology, Medical
Biology
Pharmaceutical Sciences, Medical Natural Science and Science Business
and Innovation.

Doelgroep

M Bio molecular Sciences, Chem, DDS

Business Management in Health and Life Sciences

Vakcode	AM_470584 ()
Periode	Periode 2
Credits	6.0
Voertaal	Engels
Faculteit	Fac. der Aard- en Levenswetenschappen
Coördinator	prof. dr. H.J.H.M. Claassen
Docent(en)	prof. dr. H.J.H.M. Claassen
Lesmethode(n)	Hoorcollege, Computerpracticum
Niveau	500

Doel vak

To acquire insight in different legal entities in which to organise a company or enterprise

To get acquainted with:

- financial and legal aspects
- patents and alternative valorization methods
- marketing and sales aspects of businesses

To acquire insight in Human Resource Management models

To get acquainted with different models of financing

To learn to think and act in line with economic and sustainability issues for the company

Inhoud vak

Increasingly, health students will be confronted with a corporate way of thinking in health organisations. To function in such an environment it is critical that students have basic knowledge of fiscal and legal entities and organisational forms of corporate structures (including start-ups). Furthermore, they have to understand what motivates decision makers and financial officers in different companies (also geographical differences). This course comprises a theoretical and a practical part. The theoretical part consists of interactive classes with various experts from the field. Topics that will be dealt with in detail include: intellectual property, portfolio management, finance, risk capital, grants and subsidies, team building and people management, different legal entities, fiscal and legal aspects when starting a new company, SWOT analysis in the life sciences and clinical trials. The practical part consists of bringing the knowledge acquired during the classes into practice in an assignment in which you develop a (personal career) businessplan.

Onderwijsvorm

Lectures:35h

Assignment: 4h

Work on assignment (self study): 40h

Preparing the exam: 81h

Toetsvorm

Written exam: 50%

Personal Business Plan: 50%

Both have to be passed

Literatuur

Will be announced on Blackboard 1 month before the start of the course

Doelgroep

Optional course for Master students Management, Policy Analysis and Entrepreneurship in Health and Life Sciences (MPA), Societal differentiation of the Health, Life & Natural Sciences.

Overige informatie

Guest lecturers/organisations:

- Robert Al, TU Eindhoven
- Tamar Weenen, VU university
- Esther Pronker, VU university
- Patrick de Boer & Jochem Bosschenbroek, Ttopstart BV
- Bart van Weezenbeek
- Bart Bergstein, Forbion Capital partners
- Michael Mellink & Majorie Soeter, Odgersberndtson
- Marga Janse, innovatief LerenLeren BV
- NL Octrooicentrum

- Price Waterhouse Coopers
- AsjesBisseling Belastingadviseurs
- And others to be announced

Chemical Biology

Vakcode	X_432538 (432538)
Periode	Periode 1
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	prof. dr. R. Leurs
Docent(en)	prof. dr. R. Leurs
Lesmethode(n)	Hoorcollege, Computerpracticum
Niveau	400

Doel vak

To get students acquainted with modern chemical biology techniques to modulate DNA, RNA and protein function.

Inhoud vak

In this course emphasis will be given on the interface between Chemistry and Biology. How can one understand biological processes by using small molecules? How can one identify small molecules targeting new biochemical pathways, either by using modern biochemical or cellular assays (e.g. SPR, FRET, BRET, High-content & High resolution analysis), or in silico using the wealth of new information from structural biology. How to detect and modulate DNA, RNA and protein function with chemical probes. Moreover, detection of proteins and their interactions with other molecules will be discussed in detail.

Onderwijsvorm

Lectures, tutorials, and computer practicals.

Toetsvorm

Assignments (100%)

Literatuur

Selected book chapters from Comprehensive Medicinal Chemistry II, 2007, Elsevier, Editors-in-Chief: John B. Taylor and David J. Triggle (available at VU library as e-book) and primary literature.

Vereiste voorkennis

Bachelor Pharmaceutical Sciences, Medical Natural Science, Science, Business and Innovation or Chemistry, Portal course MSc Biomolecular Science, Signal Transduction in Health and Disease, or equivalent

Doelgroep

mBMS-BC, mCh-SBI, mDDS-BCCA, mDDS-CMCT, mDDS-DD&S, mDDS-DDSA, mDDS-DDTF, mDDS-C-var, mDDS-E-var, mDDS-M-var, mPhys-SBI

Clinical development and clinical trials

Vakcode	AM_470585 ()
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Periode	Periode 3
Credits	6.0
Voertaal	Engels
Faculteit	Fac. der Aard- en Levenswetenschappen
Coördinator	W.S. Konijn MSc
Docent(en)	prof. dr. H.J.H.M. Claassen
Lesmethode(n)	Hoorcollege, Computerpracticum, Werkgroep
Niveau	500

Doel vak

To acquire knowledge and insight into the role and objectives of drug and clinical development process

To acquire knowledge and insight into the clinical pharmacology in drug development, drug interactions, pharmacodynamic and metabolic interactions

To acquire knowledge and insight into clinical study methodology

To acquire knowledge and skills into the regulatory principles

To acquire knowledge of ICH-GCP and quality

To acquire knowledge and insight into clinical trial coordination

To acquire knowledge and skills into the data management and statistics.

To acquire insight into the ethical aspects

To acquire insight into actual use of clinical trials in R&D

strategies

To learn to design a clinical study

To acquire insight into the different epidemiologic study designs

To acquire knowledge and skills into how exposure and disease in a population can be measured and how the relationships between them can be assessed (using SPSS)

To acquire knowledge and skills into interpreting and presenting the results of an epidemiologic study

Inhoud vak

The need for rigorous evaluation of components of health care is increasingly recognised worldwide. An important type of evaluation is the clinical trial. The most commonly performed clinical trials evaluate new drugs, medical devices, biologics, or other interventions on patients in strictly scientifically controlled settings, and are required for regulatory authority approval of new therapies. This course aims to provide students with a theoretical and practical understanding of the issues involved in the design, conduct, analysis and interpretation of clinical trials of health interventions. Furthermore classes are provided on which the actual use of clinical trials in day to day R&D strategies within industry and universities is addressed in detail. Classes include: 'Life Cycle of a Clinical Trial', 'Clinical Trial Methodology', 'ICH-GCP Principles', 'The Ethics Committee', 'Safety Considerations in Clinical Trials', 'Quality Control & Quality Assurance', 'Compliance, Misconduct & Fraud'.

An additional week of basic epidemiology will help you to complement the knowledge obtained so far in the course with an understanding of the principles of other types of study designs (cross-sectional, longitudinal, case-control). Issues concerning exposure and disease measurement and exposure-disease relationships will be discussed in detail, and examples will be provided. Together with your colleagues, you will learn how to apply this knowledge first by hand (during the lectures), then to an epidemiologic database (during the computer-based

sessions) and how to interpret the results critically.

Onderwijsvorm

Lectures:25h

(Computer) workgroup: 32h

Preparing the exam: 2h

Toetsvorm

Written exam: 100%

Literatuur

Will be announced on Blackboard 1 month before the start of the course

Doelgroep

Optional course for Master students Management, Policy Analysis and Entrepreneurship in Health and Life Sciences (MPA), Societal differentiation of the Health, Life & Natural Sciences.

Overige informatie

Guest lecturers/organisations:

- Eric Klaver
- DOCS
- Others to be announced

Colloquium and Literature Thesis

Vakcode	X_432574 (432574)
Periode	Ac. Jaar (september)
Credits	12.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. M.H. Siderius
Niveau	600

Doel vak

To be able to efficiently retrieve in-depth information about a given scientific topic, logically categorize and describe the information in a thesis, and present the main findings in a colloquium.

Inhoud vak

Completion of an academic MSc degree does not only imply practical experience and knowledge from the scientific specialisation, it also implies that one is able to deal with substantial amounts of scientific information in an efficient way and distill this into the main points.

During the literature thesis, the student will collect recent in-depth scientific literature about a given research topic, usually a topic of direct interest to the research group. The literature information is described in a coherent form in a thesis, which is also presented orally during a colloquium.

Onderwijsvorm

Self-study, contact hours with supervisor.

Toetsvorm

Thesis, colloquium.

Doelgroep
mDDS-DDTF

Overige informatie

Please contact the coordinator in advance for a discussion and planning of the topic.

Colloquium and Literature Thesis CMCT (C,E,M)

Vakcode	X_432571 (432571)
Periode	Ac. Jaar (september)
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. D.P. Geerke
Niveau	600

Colloquium and Literature Thesis DDS BDA (C,E,M)

Vakcode	X_432570 (432570)
Periode	Ac. Jaar (september)
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. H. Lingeman
Niveau	600

Doel vak

Literature study on a topic related to biomolecular analysis.

Inhoud vak

The topic will be chosen in close cooperation and with approval of the master coordinator.

Onderwijsvorm

Selfstudy and discussion sessions.

Toetsvorm

Report and presentations.

Doelgroep

mDDS

Overige informatie

Please contact the coordinator.

Colloquium and Literature Thesis DDS MC, DD&S (C,E,M)

Vakcode	X_432623 (432623)
Periode	Ac. Jaar (september)

Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. M. Wijtmans
Niveau	600

Doel vak

To be able to efficiently retrieve in-depth information about a given scientific topic, logically categorize and describe the information in a thesis, and present the main findings in a colloquium.

Inhoud vak

Completion of an academic MSc degree does not only imply practical experience and knowledge from the scientific specialisation, it also implies that one is able to deal with substantial amounts of scientific information in an efficient way and distill this into the main points. During the literature thesis, the student will collect recent in-depth scientific literature about a given Medicinal Chemistry research topic, usually a topic of direct interest to the research group. The literature information is described in a coherent form in a thesis, which is also presented orally during a colloquium.

Onderwijsvorm

Self-study, contact hours with supervisor.

Toetsvorm

Thesis, colloquium.

Literatuur

A guide with general hints and tips on writing a thesis will be provided.

Doelgroep

mDDS-DD&S

Overige informatie

Please contact the coordinator in advance for a discussion and planning of the topic.

Colloquium and Literature Thesis DDS MC, DDTF (C,E,M)

Vakcode	X_432624 (432624)
Periode	Ac. Jaar (september)
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. M.H. Siderius
Niveau	600

Doel vak

To be able to efficiently retrieve in-depth information about a given scientific topic, logically categorize and describe the information in a thesis, and present the main findings in a colloquium.

Inhoud vak

Completion of an academic MSc degree does not only imply practical experience and knowledge from the scientific specialization, it also implies that one is able to deal with substantial amounts of scientific information in an efficient way and distill this into the main points. During the literature thesis, the student will collect recent in-depth scientific literature about a given research topic, usually a topic of direct interest to the research group. The literature information is described in a coherent form in a thesis, which is also presented orally during a colloquium.

Onderwijsvorm

Self-study, contact hours with supervisor.

Doelgroep

mDDS-DDTF

Overige informatie

Please contact the coordinator in advance for a discussion and planning of the topic.

Colloquium and Literature Thesis DDS Molecular Toxicology, DDSA (C,E,M)

Vakcode	X_432572 (432572)
Periode	Ac. Jaar (september)
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. J.N.M. Commandeur
Niveau	600

Doel vak

To demonstrate that the student is able to collect relevant and recent primary scientific literature on a predefined subject in the area of molecular and biochemical toxicology, to organize the information in chapters and to draw conclusions on the perspectives or relevance of the subject.

Inhoud vak

The content of the literature thesis/colloquium depends on the subject which will be selected in consultation with master coordinator dr. JNM Commandeur (j.n.m.commandeur@vu.nl).

Onderwijsvorm

Literature study

Toetsvorm

Written literature thesis and oral presentation (colloquium) for the department of Pharmaceutical Sciences.

Literatuur

Literature study

Aanbevolen voorkennis

The courses ADMET, Drug-induced stress and cellular responses or equivalent courses.

Doelgroep

mDDS-DDSA MCE-variant

Overige informatie

A list of subjects for the literature thesis and colloquium can be obtained from dr. JNM Commandeur (j.n.m.commandeur@vu.nl).

Communication, Organization and Management

Vakcode	AM_470572 ()
Periode	Periode 2
Credits	6.0
Voertaal	Engels
Faculteit	Fac. der Aard- en Levenswetenschappen
Coördinator	dr. J. Maas
Docent(en)	dr. H. Wels, prof. dr. F. Scheele, dr. M.B.M. Zweekhorst
Lesmethode(n)	Hoorcollege, Werkgroep
Niveau	500

Doel vak

- To get acquainted with theories on organisational behaviour
- To obtain a deeper understanding of communication from the perspective of sharing and influencing results
- To acquire knowledge on organisational structures and designs
- To get acquainted with important theories on organisational transitions and change management
- To acquire insight into different management practices in the health and life sciences sector
- To gain insight in leadership and interpersonal behaviour
- To obtain insight in methods for motivation and conflict management
- To improve communication skills
- To practise analytical and advisory skills

Inhoud vak

Organisations in the health and life science sector are changing fast, a phenomenon driven by newly emerging technologies and increasing societal complexity. A growing number of students with a beta degree will hold professional and managerial functions in these organisations. During this course students will learn how to be effective performers within these environments, both individually and in teams. This requires an understanding of the macro aspects of organisational behaviour, including designing organisations, managerial skills and ways of strategic thinking. Several speakers conduct lectures on aspects as motivation, managing interpersonal behaviour, leadership, communication and developing and changing organisations. The speakers explain theories from literature and relate them to their practical experiences. In addition, the students interview managers in health organisations and analyse these interviews using the newly acquired theoretical concepts. Also, practical cases of health care companies will be analysed and discussed, resulting in advisory reports for management. With the other students you discuss your experiences and a coach helps you relate the experiences to theory.

Onderwijsvorm

Lectures (approximately 22 hours), response lectures (4 hours), self study, training workshops (12 hours), self-study and writing project assignment (approximately 120 hours).

Toetsvorm

Written exam (60%); and assessment of the interviews, case study analysis, and reports (40%). Grades of both parts must at least be 6 or higher.

Literatuur

To be announced on Blackboard

Doelgroep

Compulsory course within the Master programme Management, Policy Analysis and Entrepreneurship for the Health and Life Sciences (MPA) and the Societal differentiation of Health, Life and Natural Sciences Masters programmes

Overige informatie

Attendance to training, workshops, interviews and discussions is indispensable

Company Training Comp. Med. Chem. & Tox.

Vakcode	X_432619 (432619)
Periode	Ac. Jaar (september)
Credits	18.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. D.P. Geerke
Niveau	500

Doel vak

To obtain experience in doing scientific research in an industrial setting.

Inhoud vak

During a traineeship, the student actively participates in a research project within a company.

Toetsvorm

Report, presentation and practical work.

Doelgroep

mDDS

Overige informatie

Please contact the coordinator well in advance to check for possibilities and to discuss the most suitable duration of the traineeship.

Company Training Comp. Med. Chem. & Tox.

Vakcode	X_432744 ()
Periode	Ac. Jaar (september)
Credits	24.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. D.P. Geerke
Niveau	500

Doel vak

To obtain experience in doing scientific research in an industrial setting.

Inhoud vak

During a traineeship, the student actively participates in a research project within a company.

Toetsvorm

Report, presentation and practical work.

Doelgroep

mDDS

Overige informatie

Please contact the coordinator well in advance to check for possibilities and to discuss the most suitable duration of the traineeship.

Company Training Comp. Med. Chem. & Tox.

Vakcode	X_432749 ()
Periode	Ac. Jaar (september)
Credits	30.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. D.P. Geerke
Niveau	500

Doel vak

To obtain experience in doing scientific research in an industrial setting.

Inhoud vak

During a traineeship, the student actively participates in a research project within a company.

Toetsvorm

Report, presentation and practical work.

Doelgroep

mDDS

Overige informatie

Please contact the coordinator well in advance to check for possibilities and to discuss the most suitable duration of the traineeship.

Company Training DDS Biomol. Drug Analysis

Vakcode	X_432670 (432670)
Periode	Ac. Jaar (september)
Credits	18.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. J. Kool
Niveau	500

Doel vak

To acquire knowledge and insight into the role and objectives of drug, bio-analytical and clinical development processes.

Inhoud vak

This course aims to provide students with a theoretical and practical understanding of the issues involved in the design, conduct, analysis and interpretation of clinical trials of health interventions.

Doelgroep

mDDS

Overige informatie

For further information please contact Henk Lingeman

Company Training DDS Biomol. Drug Analysis

Vakcode	X_432743 ()
Periode	Ac. Jaar (september)
Credits	24.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. H. Lingeman
Niveau	500

Doel vak

To acquire knowledge and insight into the role and objectives of drug, bio-analytical and clinical development processes.

Inhoud vak

This course aims to provide students with a theoretical and practical understanding of the issues involved in the design, conduct, analysis and interpretation of clinical trials of health interventions.

Doelgroep

mDDS

Overige informatie

For further information please contact Henk Lingeman

Company Training DDS Biomol. Drug Analysis

Vakcode	X_432748 ()
Periode	Ac. Jaar (september)
Credits	30.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. H. Lingeman
Niveau	500

Doel vak

To acquire knowledge and insight into the role and objectives of drug, bio-analytical and clinical development processes.

Inhoud vak

This course aims to provide students with a theoretical and practical understanding of the issues involved in the design, conduct, analysis and interpretation of clinical trails of health interventions.

Doelgroep

mDDS

Overige informatie

For further information please contact Henk Lingeman

Company Training DDS Drug Design & Synth.

Vakcode	X_432671 (432671)
Periode	Ac. Jaar (september)
Credits	18.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. M. Wijtman
Niveau	500

Doel vak

To obtain experience in doing scientific research in an industrial setting.

Inhoud vak

During a traineeship, the student actively participates in a research project within a company.

Toetsvorm

Report, presentation and practical work.

Doelgroep

mDDS

Overige informatie

Please contact the coordinator well in advance to check for possibilities and to discuss the most suitable duration of the traineeship.

Company Training DDS Drug Design & Synth.

Vakcode	X_432745 ()
Periode	Ac. Jaar (september)
Credits	24.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. M. Wijtman
Niveau	500

Doel vak

To obtain experience in doing scientific research in an industrial setting.

Inhoud vak

During a traineeship, the student actively participates in a research project within a company.

Toetsvorm

Report, presentation and practical work.

Doelgroep

mDDS

Overige informatie

Please contact the coordinator well in advance to check for possibilities and to discuss the most suitable duration of the traineeship.

Company Training DDS Drug Design & Synth.

Vakcode	X_432750 ()
Periode	Ac. Jaar (september)
Credits	30.0
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. M. Wijtman
Niveau	500

Doel vak

To obtain experience in doing scientific research in an industrial setting.

Inhoud vak

During a traineeship, the student actively participates in a research project within a company.

Toetsvorm

Report, presentation and practical work.

Doelgroep

mDDS

Overige informatie

Please contact the coordinator well in advance to check for possibilities and to discuss the most suitable duration of the traineeship.

Company Training DDS Drug, Disp. and Saf. Assessm.

Vakcode	X_432672 (432672)
Periode	Ac. Jaar (september)
Credits	18.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. J.N.M. Commandeur
Niveau	500

Doel vak

To perform research in the area of molecular and biochemical toxicology and risk assessment in an industrial context.

Inhoud vak

Dependent on the specific company at which the training will take place.

Onderwijsvorm

Experimental research project.

Toetsvorm

Written report and oral presentation.

Literatuur

Dependent on the project to be performed.

Aanbevolen voorkennis

Courses ADMET, Drug-induced stress and cellular signalling, Advanced Course on Drug Disposition and Safety Assessment, or equivalent courses.

Doelgroep

mDDS-DDSA

Overige informatie

Students who want to perform a company training should first ask for approval at the exam committee by sending a short description of the research project and a declaration of the master-coordinator (dr JNM Commandeur; j.n.m.commandeur@vu.nl) in which the procedure is described on how the quality and progress of the research project will be monitored and how the final assessment of the project will be organized (usually based on the experimental performance, a written report and final oral presentation). In case (part of) the company training is confidential, on-site inspection of the written report and oral presentation should be arranged in order to evaluate the academic level.

Company Training DDS Drug, Disp. and Saf. Assessm.

Vakcode	X_432746 ()
Periode	Ac. Jaar (september)
Credits	24.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. J.N.M. Commandeur
Niveau	500

Doel vak

To perform research in the area of molecular and biochemical toxicology and risk assessment in an industrial context.

Inhoud vak

Dependent on the specific company at which the training will take place.

Onderwijsvorm

Experimental research project.

Toetsvorm

Written report and oral presentation.

Literatuur

Dependent on the project to be performed.

Aanbevolen voorkennis

Courses ADMET, Drug-induced stress and cellular signalling, Advanced Course on Drug Disposition and Safety Assessment, or equivalent courses.

Doelgroep

mDDS-DDSA

Overige informatie

Students who want to perform a company training should first ask for approval at the exam committee by sending a short description of the research project and a declaration of the master-coordinator (dr JNM Commandeur; j.n.m.commandeur@vu.nl) in which the procedure is described on how the quality and progress of the research project will be monitored and how the final assessment of the project will be organized (usually based on the experimental performance, a written report and final oral presentation). In case (part of) the company training is confidential, on-site inspection of the written report and oral presentation should be arranged in order to evaluate the academic level.

Company Training DDS Drug, Disp. and Saf. Assessm.

Vakcode	X_432751 ()
Periode	Ac. Jaar (september)
Credits	30.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. J.N.M. Commandeur
Niveau	500

Doel vak

To perform research in the area of molecular and biochemical toxicology and risk assessment in an industrial context.

Inhoud vak

Dependent on the specific company at which the training will take place.

Onderwijsvorm

Experimental research project.

Toetsvorm

Written report and oral presentation.

Literatuur

Dependent on the project to be performed.

Aanbevolen voorkennis

Courses ADMET, Drug-induced stress and cellular signalling, Advanced Course on Drug Disposition and Safety Assessment, or equivalent courses.

Doelgroep

mDDS-DDSA

Overige informatie

Students who want to perform a company training should first ask for approval at the exam committee by sending a short description of the research project and a declaration of the master coordinator (dr JNM Commandeur; j.n.m.commandeur@vu.nl) in which the procedure is described on how the quality and progress of the research project will be monitored and how the final assessment of the project will be organized (usually based on the experimental performance, a written report and final oral presentation). In case (part of) the company training is confidential, on-site inspection of the written report and oral presentation should be arranged in order to evaluate the academic level.

Company Training Drug Discovery & Target Finding

Vakcode	X_432621 (432621)
Periode	Ac. Jaar (september)
Credits	18.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. D.P. Geerke
Niveau	500

Doel vak

To obtain experience in scientific research in an industrial setting.

Inhoud vak

During a trainee-ship the student actively participates in a research project.

Toetsvorm

Practical work, report and presentation.

Doelgroep

mDDS

Overige informatie

Please contact the coordinator well in advance.

Company Training Drug Discovery & Target Finding

Vakcode	X_432747 ()
Periode	Ac. Jaar (september)
Credits	24.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. M.H. Siderius
Niveau	500

Doel vak

To obtain experience in scientific research in an industrial setting.

Inhoud vak

During a trainee-ship the student actively participates in a research project.

Toetsvorm

Practical work, report and presentation.

Doelgroep

mDDS

Overige informatie

Please contact the coordinator well in advance.

Company Training Drug Discovery & Target Finding

Vakcode	X_432752 ()
Periode	Ac. Jaar (september)
Credits	30.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. M.H. Siderius
Niveau	500

Doel vak

To obtain experience in scientific research in an industrial setting.

During a trainee-ship the student actively participates in a research project.

Practical work, report and presentation.

Inhoud vak

During a trainee-ship the student actively participates in a research project.

Toetsvorm

Practical work, report and presentation.

Doelgroep

mDDS

Overige informatie

Please contact the coordinator well in advance.

Computer-Aided Drug Design and Virtual Screening

Vakcode	X_432673 (432673)
Periode	Periode 2
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. C. de Graaf
Docent(en)	prof. dr. I.J.P. de Esch, dr. C. de Graaf, dr. D.P. Geerke
Lesmethode(n)	Hoorcollege
Niveau	400

Doel vak

Providing theoretical background on computer-aided drug design and virtual screening, and giving an overview of recent developments, applications and trends.

Inhoud vak

Introduction into most important concepts of computer-aided drug discovery and design.

- Protein homology modeling: sequence alignment methods, modeling constraints, protein-ligand interaction model refinement and validation.
- Chemoinformatics and chemogenomics and their application in drug and drug target identification: annotated ligand and protein databases, similarity searches, molecular fingerprints, machine learning, QSAR, focused library design, molecular field analysis, sequence- and structure-based comparison of binding sites.
- Structure-based virtual screening and design: molecular alignment, pharmacophore modeling, molecular docking and scoring, post-processing filters, protein-ligand interaction fingerprints, de novo design.

Students will learn to recognize the strengths and challenges of different

in computer-aided drug design approaches and will learn how in silico methods can be complemented with experimental studies in concrete ligand discovery and design projects.

Onderwijsvorm

Lectures, tutorials, and self-study.

Toetsvorm

Written or oral examination and assignments.

Literatuur

Leach, A.R., Molecular Modelling: Principles and Applications. (ISBN 0-582-38210-6).

Literature that will be made available via Blackboard.

Doelgroep

mDDS-CMCT, mDDS-DD&S, mDDS-DDSA, mDDS-DDTF, mDDS-C-var, mDDS-E-var, mDDS-M-var, mCh

Crystallography

Vakcode	X_437564 ()
Credits	7.5
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	ir. A.A. Timmer
Niveau	500

Overige informatie

This course is taught at Copenhagen University (KU)

Detailed course descriptions at KU are available from:

<http://www.farma.ku.dk/index.php/Course-catalogue/4635/0/>

Contact your master coordinator to discuss your complete VU en KU programme

Density Functional Theory for Chemists

Vakcode	X_435111 (435111)
Periode	Ac. Jaar (september)
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	prof. dr. F.M. Bickelhaupt
Niveau	500

Doel vak

Understanding basic concepts of Density Functional Theory (DFT), in particular, Kohn-Sham DFT, and its application to understanding and predicting chemical bonding, molecular structure, and reactivity.

Inhoud vak

Electron density, Hole functions, Electron density as basic variable instead of the wavefunction, Hohenberg-Kohn theorems, Kohn-Sham approach, Approximate exchange-correlation functionals, Basic machinery of DFT computer programs.

Onderwijsvorm

zelfstudie

Toetsvorm

Oral exam

Literatuur

Parts of: (a) W. Koch en M. C. Holthausen, A Chemist's Guide to Density Functional Theory; Sec. Ed.; Wiley-VCH Verlag: Weinheim, 2000.; (b) F.M. Bickelhaupt, E.J. Baerends, Kohn-Sham Density Functional Theory: Predicting and Understanding Chemistry, in: Rev. Comput. Chem.; K.B. Lipkowitz, D.B. Boyd, Eds.; Wiley-VCH: New York, Vol. 15.

Overige informatie

Period: in consultation with the lecturer

Density Functional Theory for Chemists

Vakcode	X_435112 (435112)
Periode	Ac. Jaar (september)
Credits	12.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	prof. dr. F.M. Bickelhaupt
Niveau	500

Doel vak

Understanding basic concepts of Density Functional Theory (DFT), in particular, Kohn-Sham DFT, and its application to understanding and predicting chemical bonding, molecular structure, and reactivity.

Inhoud vak

Part I (6 ECTS): Electron density, Hole functions, Electron density as basic variable instead of the wavefunction, Hohenberg-Kohn theorems, Kohn-Sham approach, Approximate exchange-correlation functionals, Basic machinery of DFT computer programs. Part II (6 ECTS): Molecular structure, Vibrational frequencies, Thermochemistry, Hydrogen bonds, Kohn-Sham molecular orbital (MO) model of the electronic structure and chemical bond, Chemical reactivity.

Onderwijsvorm

zelfstudie

Toetsvorm

Oral examination.

Literatuur

Parts of: (a) W. Koch en M. C. Holthausen, A Chemist's Guide to Density Functional Theory; Sec. Ed.; Wiley-VCH Verlag: Weinheim, 2000.; (b) F.M. Bickelhaupt, E.J. Baerends, Kohn-Sham Density Functional Theory: Predicting and Understanding Chemistry, in: Rev. Comput. Chem.; K.B. Lipkowitz, D.B. Boyd, Eds.; Wiley-VCH: New York, Vol. 15.

Doelgroep

Overige informatie

Period: in consultation with the lecturer

Disability and Development

Vakcode	AM_470588 ()
Periode	Periode 2
Credits	6.0
Voertaal	Engels
Faculteit	Fac. der Aard- en Levenswetenschappen
Coördinator	dr. W.H. van Brakel MD
Docent(en)	H.B. Miranda Galarza MSc, F.M. Budge MSc
Lesmethode(n)	Hoorcollege, Werkgroep
Niveau	500

Doel vak

- To develop an understanding of disability and the issues faced by people with disabilities
- To develop knowledge and skills for disability research, policy development and management related to disability, rehabilitation and development
- To acquire insight into the epidemiology of disability, with separate attention for important determinants like gender, poverty and HIV/AIDS
- To learn how to use relevant models of disability and the conceptual framework of the International Classification of Functioning, Disability and Health (ICF)
- To understand the importance of human rights in relation to disability and to learn to use the UN Convention for the Rights of Persons with Disabilities for advocacy and other rights-based interventions
- To acquire skills and knowledge in measurement and research methods relevant to disability
- To understand the importance of inter-sectoral collaboration
- To gain insight in participatory approaches

Inhoud vak

The Disability and Development (D&D) course focuses on a broad range of issues related to disability and rehabilitation in the context of development. This means that the focus is on people with disabilities in low and middle-income countries. Disability affects an estimated 1 billion people worldwide, the majority of whom live in low and middle-income countries. The large majority are poor and have no access to rehabilitation services; neither are facilities in place to allow them to be included in the mainstream of society.

To date, very few services and programmes are available to address these needs. The realisation that the Millennium Development Goals cannot be met without addressing the needs of people with disability has brought a new impetus to the field of disability and development. Another major recent development was the adoption of the UN Convention on the Rights of Persons with Disabilities in December 2006. It is expected that there will be a substantial increase in demand for training of a large variety

of professionals (e.g. researchers, managers, architects, lawyers, health professionals) with formal training and qualifications in the field of disability-inclusive development.

This rapidly increasing interest in disability, as a development and human rights issue, means that this emerging field of study will rapidly gain in importance and should become part of any serious higher education programme in social and development studies and in international public health. The course will cover essential knowledge and skills in this subject.

The 4-week course programme will include the following subjects:

- Disability models and stereotypes,
- Frequencies and distribution of disability,
- Experience of having a disability,
- ICF conceptual framework,
- Disability rights, including the UN Convention on the Rights of Persons with Disabilities,
- Culture and disability,
- Determinants of disability, including stigma and discrimination, poverty, gender and HIV/AIDS,
- Measurement of disability,
- Disability-relevant research methods, including survey methods, examples of disability research
- An introduction to community-based rehabilitation.

Onderwijsvorm

Problem-based learning supported by lectures and an article writing assignment

The programme comprises 168 study hours, divided as follows:

- Lectures: 36
- Tutorial groups: 18
- Other events: 12
- Self-study: 102

Toetsvorm

Participation in tutorial groups: 10%

Take-home examination, submitted electronically: 60%

Scientific article: 30%

Literatuur

See e-reader

Vereiste voorkennis

Bachelor-level education; any subject

Doelgroep

The Disability & Development module is an optional course for Master students Management, Policy Analysis and Entrepreneurship in Health and Life Sciences (MPA), International Public Health and Biomedical Sciences; external students from low and middle-income countries are strongly encouraged to apply. We encourage the participation of students with disabilities, especially from low and middle-income countries.

Overige informatie

Jacqueline Kool, MA

Lydia la Rivière-Zijdel, MA

Drug Action

Vakcode	X_432724 ()
Periode	Periode 3
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. H.F. Vischer
Docent(en)	dr. H.F. Vischer
Lesmethode(n)	Hoorcollege
Niveau	400

Doel vak

To obtain a general introduction into and deepening of knowledge of fundamental principles and molecular aspects of drug action within the field of molecular pharmacology and receptor biochemistry.

Inhoud vak

Most drugs display their pharmacological actions following the interactions with receptor proteins. As for the molecular pharmacological aspects the mechanisms by which these drugs act with respect to their therapeutic application will be studied. Novel concepts of pharmacology, including constitutive receptor activity, allosteric modulation, receptor dimerization and ligand-biased signaling will be addressed. Aspects of modern technologies, such as high-throughput screening and pharmacogenomics, within the process of drug discovery and target finding will be addressed. Important cellular and animal model systems used to investigate (pathological and pharmacological) aspects of cell biology will be discussed.

Onderwijsvorm

Hoor- en werkcollege en case-study

Toetsvorm

Written examination and assignments.

Literatuur

Pharmacology in Drug Discovery - T.P. Kenakin
ISBN 978-0-12-384856-7

Vereiste voorkennis

Knowledge of basic principles of drug action.

Doelgroep

mDDS

Drug-induced Stress and Cellular Responses

Vakcode	X_432536 (432536)
Periode	Periode 2
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. J.N.M. Commandeur
Docent(en)	dr. J.N.M. Commandeur

Lesmethode(n)	Hoorcollege
Niveau	500

Doel vak

At the end of this theoretical course, the students are aware of the latest insights of cellular stress responses which can occur after exposure of cells to reactive drugs and/or reactive drug metabolites.

Inhoud vak

Exposure of tissues to high levels of drugs and/or drug metabolites in some cases can trigger various biochemical responses. Interaction with sensor proteins can lead to adaptative stress responses which will protect the cell against further damage. If these adaptative stress responses are insufficient, interaction with critical proteins may lead to cell death or exaggerated, fatal pharmacological responses.

The following aspects will be studied in the course drug-induced stress and cellular signaling:

- (types of) adverse drug reactions
- role of biotransformation and drug transport in adverse drug reactions,
- reversible and irreversible interactions of toxic drugs with biological macromolecules,
- cellular adaptation to exposure to reactive intermediates and reactive oxygen species;
- cellular and molecular mechanisms leading to toxic effects,
- genetic toxicology and chemical carcinogenesis,
- role of mitochondria in necrosis and apoptosis,
- impairment of cell proliferation and tissue repair,
- immune-mediated toxicity.

Onderwijsvorm

Lectures and self study.

Toetsvorm

Written exam

Literatuur

Boelsterli, Mechanistic Toxicology: The Molecular Basis of How Chemicals Disrupt Biological Targets 2nd ed, CRC Press, 2007 (ISBN 0849372720).

Vereiste voorkennis

Bachelor Physics, Chemistry, Mathematics, Biology, Medical Biology
Pharmaceutical Sciences, Medical Natural Science Biomolecular Science
portal course, or equivalent

Doelgroep

mDDS, mBMS

Entrepreneurship in Health and Life Sciences

Vakcode	AM_470575 ()
Periode	Periode 2
Credits	6.0
Voertaal	Engels
Faculteit	Fac. der Aard- en Levenswetenschappen

Coördinator	prof. dr. E. Masurel
Docent(en)	prof. dr. E. Masurel
Lesmethode(n)	Hoorcollege, Werkgroep
Niveau	500

Doel vak

Students obtain knowledge about and insight in the relevance of entrepreneurship and innovation for their own discipline. Students learn about the processes which are involved in the recognition and exploitation of opportunities, about creating economic and social value and about the nature and role of networks. In addition students gain knowledge of different entrepreneurial processes and the importance of valorisation of (bio)medical findings and business ideas for a knowledge-based economy.

Learning objectives

- Become familiar with an innovation outlook on entrepreneurship.
- Become aware that value-adding opportunities not only contain financial aspects but also social and ecological aspects (sustainable entrepreneurship).
- Gain the ability to write a feasibility plan on how to bring an innovation to the market.
- Obtain knowledge about and insight in the relevance of entrepreneurship and innovation for science disciplines.
- Learn about the processes which are involved in the recognition and exploitation of opportunities, about creating economic and social value and about the nature and role of networks.
- Gain knowledge of different entrepreneurial processes and the importance of valorisation of (bio)medical findings and business ideas for a knowledge-based economy.

Inhoud vak

This course consists of two tracks: a theoretical track and a practical track. These two tracks run simultaneously. In the first track you learn about entrepreneurship. Answers are found on questions such as: What is entrepreneurship? What defines an entrepreneur? What are entrepreneurial opportunities? What is the role of innovation in entrepreneurship? What is corporate social responsibility (CSR)? How can we judge the feasibility of entrepreneurial ambitions? Simultaneously you work on an assignment (second track). In the first week of this course you search for an innovation in your own discipline (product, service, process etc). Your choice must be approved by the lecturers. The first part of the assignment consists of a description of the innovation which you have chosen. Subsequently, you make a SWOT-analysis and a network analysis of the innovation. Also a paragraph on CSR aspect should be added. The final part of the assignment is your own feasibility study: how would you valorize the innovation to the market?

Onderwijsvorm

Lectures, personal meetings. Each week scientific lectures are given (on entrepreneurship, SWOT-analysis, innovation, CSR etc). These lectures are both the basis for the exam and for the assignment. Each week the student has a short meeting with his / her supervisor, in order to discuss the progress of his/her assignment.

Schedule and study time

The total study time is 160 hours.

Tuition methods include lectures, consultancies and self-study.

The different elements have the following study time:

- lectures 18 hours
- consultancies 8 hours
- writing feasibility plan 65 hours
- self study 65 hours
- examination 4 hours

Toetsvorm

You conduct a written exam and an assignment. Both the exam and the assignment determine 50% of the grade. The exam and the assignment must be of sufficient quality.

Literatuur

To be announced on Blackboard

Doelgroep

Optional course for Master students Management, Policy Analysis and Entrepreneurship in Health and Life sciences (MPA), M-differentiation of the Health, Life & Natural Sciences, Biology, Biomedical Sciences.

Overige informatie

Attendance is compulsory. Prior knowledge: Business Management in Health and Life sciences. For information and application:

anna.van.luijn@falw.vu.nl

Ethics and Academic skills

Vakcode	X_432726 ()
Periode	Ac. Jaar (september)
Credits	2.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	prof. dr. ir. R.V.A. Orru
Niveau	400

Doel vak

In order to plan this course please contact your mastercoordinator for details

Ethics and Academic skills

Vakcode	X_432725 ()
Periode	Ac. Jaar (september)
Credits	1.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	prof. dr. ir. R.V.A. Orru
Niveau	400

Doel vak

In order to plan this course please contact your mastercoordinator for details

Ethics and Academic Skills

Vakcode	X_437556 (437556)
Periode	Ac. Jaar (september)
Credits	6.0
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	prof. dr. ir. R.V.A. Orru
Niveau	400

Doel vak

In order to plan this course please contact your mastercoordinator for details

Ethics and Academic Skills

Vakcode	X_432517 (432517)
Periode	Ac. Jaar (september)
Credits	3.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	prof. dr. ir. R.V.A. Orru
Niveau	400

Doel vak

In order to plan this course please contact your mastercoordinator for details

Inhoud vak

Period: Variable

Ethics in Life Sciences

Vakcode	AM_470707 ()
Periode	Periode 3
Credits	3.0
Voertaal	Engels
Faculteit	Fac. der Aard- en Levenswetenschappen
Coördinator	prof. dr. J.T. de Cock Buning
Docent(en)	prof. dr. J.T. de Cock Buning, dr. J.F.H. Kupper
Lesmethode(n)	Hoorcollege, Werkgroep
Niveau	400

Doel vak

To provide a toolbox of ethical instruments to analyze properly moral problems related (to one's own) research in the life sciences

- To acquire conceptual knowledge of the central concepts in applied philosophy and professional ethics
- To challenge an ethical reflection on one owns life science specialization and to open it for an impartial and constructive

discussion

- To exercise a team based project to enter prepare and execute a moral dialogue
- To acquire the necessary skills to handle ethical issues in an accountable manner, as a professional academic beyond one's own inclinations and prejudgments

Inhoud vak

Researchers in life sciences generate the knowledge that builds the future of our society. Therefore, professional academics should be accountable for their decisions, experimental designs and presentation of results. In this short course, the principles of justification will be illustrated with cases of technology ethics and medical ethics. The way an ethical review committee on animal research works, is simulated by a role play exercise on an actual research protocol. Finally, as a small group training project, an ethical dialogue is prepared and executed together with another team.

Onderwijsvorm

Ethics in the Life Sciences is a fulltime course of four weeks (3 ECTS). The total study time is 80 hours.

The different elements have the following study time:

- Lectures: 13 hours
- Work groups: 17 hours
- Group assignment: 24 hours
- Exam: 2 hour
- Presentation : 4 hours
- Self working (reading in the first week): 20 hours

Please note that attendance to the work group meetings is compulsory. Attendance to the lectures is highly recommended. In our experience, relying on self-study alone is insufficient to apply the theory of the lectures in the assignments of the workgroups, and to pass the exam.

Toetsvorm

- Degree of intellectual participation in the workgroups (10%)
- exam (50%) has to be passed
- written and verbal execution of the ethical dialogue (40%)

Literatuur

Available on Blackboard

Vereiste voorkennis

Bsc Biology, Biomedical Sciences, Psychology with profile Biological Psychology or Neuropsychology

Doelgroep

Compulsory course in all FALW Master programmes, except Health Sciences and Neuro Sciences

Overige informatie

Lectures in English, part of the workgroups are in Dutch. All presentations and plenary discussions in English. Attendance is compulsory.

Ethics in Public Health

Vakcode	AM_470805 ()
Periode	Ac. Jaar (september), Periode 3

Credits	3.0
Voertaal	Engels
Faculteit	Fac. der Aard- en Levenswetenschappen
Coördinator	dr. M.J.P.A. Janssens
Docent(en)	dr. M.J.P.A. Janssens
Lesmethode(n)	Hoorcollege

Doel vak

Analysing and understanding the ethical aspects of public health research, enabling students to make responsible decisions in research

Inhoud vak

Recent case studies will be analyzed concerning topics as life style enhancement, reproductive technologies, health care research, and preventive health care. Three sessions are dedicated to student presentations which will be discussed in plenary sessions. In three other sessions, the lecturer will introduce and discuss actual developments in the ethics of public health:

reproductive technologies;
prevention and life style enhancement;
medical research involving human subjects. Also, throughout the course, attention will be paid to the practical relevance of fundamental ethical-philosophical questions.

Onderwijsvorm

Lectures, workgroups, assignments

Toetsvorm

Essay and active participation

Doelgroep

Compulsory course for master students in Lifestyle and Chronic Disorders

Health, Globalisation and Human Rights

Vakcode	AM_470818 ()
Periode	Periode 2
Credits	6.0
Voertaal	Engels
Faculteit	Fac. der Aard- en Levenswetenschappen
Coördinator	dr. C.W.M. Dedding
Docent(en)	prof. dr. P. Heutink, dr. M.G.B.C. Bertens
Lesmethode(n)	Hoorcollege, Werkgroep
Niveau	500

Doel vak

To acquire knowledge and understanding of the relationship between global public health issues and the global protection of human rights
To analyse how violations of human rights affect health and well-being
To learn methods of human rights assessment in relation to innovations in health technology
To acquire insights into the cultural dimensions of human rights values in relation to public health

Inhoud vak

This course focuses on the human rights issues that are raised around the globe in connection with public health concerns. The course introduces the students to the effects of globalization on health issues, to the relevant UN human rights instruments on health and to the mechanisms to promote and protect these rights. Attention is given to a wide range of human rights topics in which health and well being play a crucial role. Examples are situations of armed conflict, reproductive rights, migration and refugee issues and childrens rights. Within the context of current globalisation processes the importance of local cultural insights into the human rights & public health interaction will be discussed. During the course students will prepare and participate in a simulation on a human rights assessment of innovations in health technology and discuss relevant scientific literature in study groups. In the exam students will show their creative problem-solving skills applying them to human rights dilemmas in public health.

Onderwijsvorm

Contact hours

Lectures: 33 hours

Work groups: 10 hours

Group project, simulation and exam: 8 hours

Self study and preparing: remaining hours

Toetsvorm

Group project (10%), Simulation (20%), exam (70%). All parts need to be passed (6.0)

Literatuur

To be announced at the start of the first work group/lecture

Doelgroep

Optional course for students in all differentiations of the Masters Health Sciences, Biomedical Sciences and Management, Policy Analysis and Entrepreneurship in Health and Life Sciences.

Overige informatie

Guest lectures and guest organisations (under reservation):

Christine Dedding (Children and rights)
Fiona Budge (Culture and Health)
Bert Keizer (Elderly Rights)
Els Mons (Rights and disabled persons)
Women on Waves
Doctors without Borders
And more to be announced.

For more information contact Anna van Luijn: a.van.luijn@vu.nl

High-Throughput Screening

Vakcode	X_435047 (435047)
Periode	Periode 2

Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. J. Kool
Docent(en)	dr. J. Kool
Lesmethode(n)	Hoorcollege
Niveau	500

Doel vak

In depth study on the bio-analytical and screening aspects related to target and lead discovery of drugs.

Inhoud vak

During this course the potential of modern analytical, bioassaying and immunological techniques used in target- and lead-discovery will be discussed. The emphasis will be on the treatment of advanced sample preparation techniques (i.e. automation, high-throughput / combinatorial chemistry, miniaturization), advance separation methods and bio-specific assays. These techniques will be discussed in relation with pharmacokinetic studies and the applicability of the various techniques within the various stages of ADME. Finally, the biological-effect monitoring, exposure monitoring, pharmacokinetics and plasma/serum analysis will be dealt with.

Onderwijsvorm

Lectures and tutorials.

Toetsvorm

Oral examination, presentation and assignment.

Literatuur

Hand-outs (electronically available).

Vereiste voorkennis

Basic knowledge of biochemistry, separation sciences, spectroscopy and mass spectrometry.

Doelgroep

mCh-AS, mCh-MDSC, mDDS-BCCA, mDDS-DDTF

In vitro Methods in Pharmacology

Vakcode	X_437568 ()
Credits	7.5
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	ir. A.A. Timmer
Niveau	500

Overige informatie

This course is taught at Copenhagen University (KU)

Detailed course descriptions at KU are available from:

<http://www.farma.ku.dk/index.php/Course-catalogue/4635/0/>

Contact your master coordinator to discuss your complete VU en KU programme

Internship abroad DDS Biomol. Drug Analysis

Vakcode	X_432753 ()
Periode	Ac. Jaar (september)
Credits	24.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. H. Lingeman
Niveau	500

Doel vak

To acquire knowledge and insight into the role and objective of drug, bio-analytical and clinical development processes in industry, and research institutes.

Inhoud vak

This project aims to provide student with a theoretical and practical understanding of the issues involved in the design, conduct, analyses and interpretation of analytical studies.

Doelgroep

mDDS

Overige informatie

For further information please contact Henk Lingeman.

Internship abroad DDS Biomol. Drug Analysis

Vakcode	X_432674 (432674)
Periode	Ac. Jaar (september)
Credits	18.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. H. Lingeman
Niveau	500

Doel vak

To acquire knowledge and insight into the role and objective of drug, bio-analytical and clinical development processes in industry and research institutes.

Inhoud vak

This project aims to provide students with a theoretical and practical understanding of the issues involved in the design, conduct, analyses and interpretation of analytical studies.

Doelgroep

mDDS

Overige informatie

For further information please contact Henk Lingeman.

Internship abroad DDS Biomol. Drug Analysis

Vakcode	X_432758 ()
Periode	Ac. Jaar (september)
Credits	30.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. H. Lingeman
Niveau	500

Doel vak

To acquire knowledge and insight into the role and objective of drug, bio-analytical and clinical development processes in industry and research institutes.

Inhoud vak

This project aims to provide students with a theoretical and practical understanding of the issues involved in the design, conduct, analyses and interpretation of analytical studies.

Doelgroep

mDDS

Overige informatie

For further information please contact Henk Lingeman.

Internship abroad DDS Comp. Med. Chem. & Tox.

Vakcode	X_432675 (432675)
Periode	Ac. Jaar (september)
Credits	18.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. D.P. Geerke
Niveau	500

Doel vak

To obtain experience in doing scientific research in another country.

Inhoud vak

During a traineeship, the student actively participates in a research project within a university or company in another country.

Toetsvorm

Report, presentation and practical work.

Doelgroep

mDDS

Overige informatie

Please contact the coordinator well in advance to check for possibilities and to discuss the most suitable duration of the traineeship.

Internship abroad DDS Comp. Med. Chem. & Tox.

Vakcode	X_432754 ()
Periode	Ac. Jaar (september)
Credits	24.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. D.P. Geerke
Niveau	500

Doel vak

To obtain experience in doing scientific research in another country.

Inhoud vak

During a traineeship, the student actively participates in a research project within a university or company in another country.

Toetsvorm

Report, presentation and practical work.

Doelgroep

mDDS

Overige informatie

Please contact the coordinator well in advance to check for possibilities and to discuss the most suitable duration of the traineeship.

Internship abroad DDS Comp. Med. Chem. & Tox.

Vakcode	X_432759 ()
Periode	Ac. Jaar (september)
Credits	30.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. D.P. Geerke
Niveau	500

Doel vak

To obtain experience in doing scientific research in another country.

Inhoud vak

During a traineeship, the student actively participates in a research project within a university or company in another country.

Toetsvorm

Report, presentation and practical work.

Doelgroep

mDDS

Overige informatie

Please contact the coordinator well in advance to check for possibilities and to discuss the most suitable duration of the traineeship.

Internship abroad DDS Drug Design & Synth.

Vakcode	X_432676 (432676)
Periode	Ac. Jaar (september)
Credits	18.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. M. Wijtmans
Niveau	500

Doel vak

To obtain experience in doing scientific research in another country.

Inhoud vak

During a traineeship, the student actively participates in a research project within a university or company in another country.

Toetsvorm

Report, presentation and practical work.

Doelgroep

mDDS

Overige informatie

Please contact the coordinator well in advance to check for possibilities and to discuss the most suitable duration of the traineeship.

Internship abroad DDS Drug Design & Synth.

Vakcode	X_432755 ()
Periode	Ac. Jaar (september)
Credits	24.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. M. Wijtmans
Niveau	500

Doel vak

To obtain experience in doing scientific research in another country.

Inhoud vak

During a traineeship, the student actively participates in a research project within a university or company in another country.

Toetsvorm

Report, presentation and practical work.

Doelgroep

mDDS

Overige informatie

Please contact the coordinator well in advance to check for possibilities and to discuss the most suitable duration of the traineeship.

Internship abroad DDS Drug Design & Synth.

Vakcode	X_432760 ()
Periode	Ac. Jaar (september)
Credits	30.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. M. Wijtmans
Niveau	500

Doel vak

To obtain experience in doing scientific research in another country.

Inhoud vak

During a traineeship, the student actively participates in a research project within a university or company in another country.

Toetsvorm

Report, presentation and practical work.

Doelgroep

mDDS

Overige informatie

Please contact the coordinator well in advance to check for possibilities and to discuss the most suitable duration of the traineeship.

Internship abroad DDS Drug Disc. & Target Find.

Vakcode	X_432678 (432678)
Periode	Ac. Jaar (september)
Credits	18.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. M.H. Siderius
Niveau	500

Doel vak

To obtain experience in scientific research abroad.

Inhoud vak

During an internship the student actively participates in a research project within an institute or a company abroad.

Toetsvorm

Practical work, report and presentation.

Doelgroep

mDDS

Overige informatie

Please contact the coordinator well in advance.

Internship abroad DDS Drug Disc. & Target Find.

Vakcode	X_432757 ()
Periode	Ac. Jaar (september)
Credits	24.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. M.H. Siderius
Niveau	500

Doel vak

To obtain experience in scientific research abroad.

Inhoud vak

During an internship the student actively participates in a research project within an institute or a company abroad.

Toetsvorm

Practical work, report and presentation.

Doelgroep

mDDS

Overige informatie

Please contact the coordinator well in advance.

Internship abroad DDS Drug Disc. & Target Find.

Vakcode	X_432762 ()
Periode	Ac. Jaar (september)
Credits	30.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. M.H. Siderius
Niveau	500

Doel vak

To obtain experience in scientific research abroad.

Inhoud vak

During an internship the student actively participates in a research project within an institute or a company abroad.

Toetsvorm

Practical work, report and presentation.

Doelgroep

mDDS

Overige informatie

Please contact the coordinator well in advance.

Internship abroad DDS Drug, Disp. and Saf. Assessm.

Vakcode	X_432677 (432677)
Periode	Ac. Jaar (september)
Credits	18.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. J.N.M. Commandeur
Niveau	500

Doel vak

To perform research in the area of molecular and biochemical toxicology and to get familiar with experimental approaches used in this field. To define a hypothesis based on previous observations or publications, and to design, execute and critically interpret the experiments performed to test specific hypotheses.

Inhoud vak

The research project will be carried out in a research group which is active in the area of molecular and biochemical toxicology. Generally, research can focussed on the role of drug transporters and drug metabolising enzymes in the bioactivation and bioinactivation of toxic drugs and other chemicals, identification of genetically determined enzymes, drug-drug interactions, the identification of reactive intermediates and cellular targets of reactive intermediates, cellular responses related to cytotoxicity or adaptation reactions, mechanisms of genotoxicity (mutagenicity, carcinogenicity), idiosyncratic drug reactions, identification of biomarkers for early and late toxic effects, etc.

Onderwijsvorm

Experimental research project, starting with a brief literature survey on the topic to be investigated.

Toetsvorm

Written report, (participation to) work discussions, and oral presentation in the section of Molecular Toxicology.

Literatuur

Relevant reviews will be provided at the start of the project.

Aanbevolen voorkennis

Courses ADMET, Drug-induced stress and cellular signalling or equivalent courses.

Doelgroep

mDDS-DDSA

Overige informatie

Students who want to perform an internship abroad should first ask for approval at the exam committee by sending a short description of the research project and a declaration of the mastercoordinator (dr JNM Commandeur; j.n.m.commandeur@vu.nl) in which the procedure on how the quality and progress of the research project will be monitored and how the final assessment of the project will be organized (usually based on the experimental performance, a written report and final oral presentation).

Internship abroad DDS Drug, Disp. and Saf. Assessm.

Vakcode	X_432756 ()
Periode	Ac. Jaar (september)
Credits	24.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. J.N.M. Commandeur
Niveau	500

Doel vak

To perform research in the area of molecular and biochemical toxicology and to get familiar with experimental approaches used in this field.

To define a hypothesis based on previous observations or publications, and to design, execute and critically interpret the experiments performed to test specific hypotheses.

Inhoud vak

The research project will be carried out in a research group which is active in the area of molecular and biochemical toxicology. Generally, research can be focussed on the role of drug transporters and drug metabolising enzymes in the bioactivation and bioinactivation of toxic drugs and other chemicals, identification of genetically determined enzymes, drug-drug interactions, the identification of reactive intermediates and cellular targets of reactive intermediates, cellular responses related to cytotoxicity or adaptation reactions, mechanisms of genotoxicity (mutagenicity, carcinogenicity), idiosyncratic drug reactions, identification of biomarkers for early and late toxic effects, etc.

Onderwijsvorm

Experimental research project, starting with a brief literature survey on the topic to be investigated.

Toetsvorm

Written report, (participation to) work discussions, and oral presentation.

Literatuur

Relevant reviews will be provided at the start of the project.

Aanbevolen voorkennis

Courses ADMET, Drug-induced stress and cellular signalling, Advanced Course on Drug Disposition and Safety Assessment, or equivalent courses.

Doelgroep

mDDS-DDSA

Overige informatie

Students who want to perform an internship abroad should first ask for approval at the exam committee by sending a short description of the research project and a declaration of the mastercoordinator (dr JNM Commandeur; j.n.m.commandeur@vu.nl) in which the procedure is described on how the quality and progress of the research project will be monitored and how the final assessment of the project will be organized (usually based on the experimental performance, a written report and final oral presentation).

Internship abroad DDS Drug, Disp. and Saf. Assessm.

Vakcode	X_432761 ()
Periode	Ac. Jaar (september)
Credits	30.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. J.N.M. Commandeur
Niveau	500

Doel vak

To perform research in the area of molecular and biochemical toxicology and to get familiar with experimental approaches used in this field.

To define a hypothesis based on previous observations or publications, and to design, execute and critically interpret the experiments performed to test specific hypotheses.

Inhoud vak

The research project will be carried out in a research group which is active in the area of molecular and biochemical toxicology.

Generally, research can focussed on the role of drug transporters and drug metabolising enzymes in the bioactivation and bioinactivation of toxic drugs and other chemicals, identification of genetically determined enzymes, drug-drug interactions, the identification of reactive intermediates and cellular targets of reactive intermediates, cellular responses related to cytotoxicity or adaptation reactions, mechanisms of genotoxicity (mutagenicity, carcinogenicity), idiosyncratic drug reactions, identification of biomarkers for early and late toxic effects, etc.

Onderwijsvorm

Experimental research project, starting with a brief literature survey on the topic to be investigated.

Toetsvorm

Written report, (participation to) work discussions, and oral presentation.

Literatuur

Relevant reviews will be provided at the start of the project.

Aanbevolen voorkennis

Courses ADMET, Drug-induced stress and cellular signalling, Advanced Course on Drug Disposition and Safety Assessment, or equivalent courses.

Doelgroep

mDDS-DDSA

Overige informatie

Students who want to perform an internship abroad should first ask for approval at the exam committee by sending a short description of the research project and a declaration of the mastercoordinator (dr JNM Commandeur; j.n.m.commandeur@vu.nl) in which the procedure is described on how the quality and progress of the research project will be monitored and how the final assessment of the project will be organized (usually based on the experimental performance, a written report and final oral presentation).

Internship Communication Specialisation

Vakcode	AM_471148 ()
Periode	Ac. Jaar (september)
Credits	30.0
Voertaal	Engels
Faculteit	Fac. der Aard- en Levenswetenschappen
Coördinator	dr. R.J. van Belle-van den Berg
Niveau	600

Internship Societal Specialisation

Vakcode	AM_471147 ()
Periode	Ac. Jaar (september)
Credits	30.0
Voertaal	Engels
Faculteit	Fac. der Aard- en Levenswetenschappen
Coördinator	dr. R.J. van Belle-van den Berg
Niveau	600

IPR and Innovation in pharmaceutical Sciences

Vakcode	X_437569 ()
Periode	Periode 4
Credits	7.5

Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	ir. A.A. Timmer
Niveau	500

Overige informatie

This course is taught at Copenhagen University (KU)

Detailed course descriptions at KU are available from:

<http://www.farma.ku.dk/index.php/Course-catalogue/4635/0/>

Contact your master coordinator to discuss your complete VU en KU programme

Literature thesis and Colloquium

Vakcode	X_432577 (432577)
Periode	Ac. Jaar (september)
Credits	12.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. H. Lingeman
Niveau	600

Doel vak

Literature study on a topic related to biomolecular analysis.

Inhoud vak

The topic will be chosen in close cooperation and with approval of the master coordinator.

Onderwijsvorm

Selfstudy and discussion sessions.

Toetsvorm

Report and presentation.

Doelgroep

mDDS

Overige informatie

Please contact the coördinator.

Literature thesis and Colloquium CMCT

Vakcode	X_432576 (432576)
Periode	Ac. Jaar (september)
Credits	12.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. D.P. Geerke
Niveau	600

Doel vak

To be able to efficiently retrieve in-depth information about a given scientific topic, logically categorize and describe the information in a thesis, and present the main findings in a colloquium.

Inhoud vak

Completion of an academic MSc degree does not only imply practical experience and knowledge from the scientific specialization, it also implies that one is able to deal with substantial amounts of scientific information in an efficient way and distill this into the main points. During the literature thesis, the student will collect recent in-depth scientific literature about a given research topic, usually a topic of direct interest to the research group. The literature information is described in a coherent form in a thesis, which is also presented orally during a colloquium.

Onderwijsvorm

Self-study, contact hours with supervisor.

Toetsvorm

Thesis, colloquium.

Doelgroep

mDDS-CMCT

Overige informatie

Please contact the coordinator in advance for a discussion and planning of the topic.

Literature thesis and Colloquium DDS Medical Chemistry, DD&S

Vakcode	X_432573 (432573)
Periode	Ac. Jaar (september)
Credits	12.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. M. Wijtmans
Niveau	600

Doel vak

To be able to efficiently retrieve in-depth information about a given scientific topic, logically categorize and describe the information in a thesis, and present the main findings in a colloquium.

Inhoud vak

Completion of an academic MSc degree does not only imply practical experience and knowledge from the scientific specialisation, it also implies that one is able to deal with substantial amounts of scientific information in an efficient way and distill this into the main points. During the literature thesis, the student will collect recent in-depth scientific literature about a given Medicinal Chemistry research topic, usually a topic of direct interest to the research group. The literature information is described in a coherent form in a thesis, which is also presented orally during a colloquium.

Onderwijsvorm

Self-study, contact hours with supervisor.

Toetsvorm

Thesis, colloquium.

Literatuur

A guide with general hints and tips on writing a thesis will be provided.

Doelgroep

mDDS-DD&S

Overige informatie

Please contact the coordinator in advance for a discussion and planning of the topic.

Literature thesis and Colloquium DDS Molecular Toxicology, DDSA

Vakcode	X_432575 (432575)
Periode	Ac. Jaar (september)
Credits	12.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. J.N.M. Commandeur
Niveau	600

Doel vak

To demonstrate that the student is able to collect relevant and recent primary scientific literature on a predefined subject in the area of molecular and biochemical toxicology, to organize the information in chapters and to draw conclusions on the perspectives or relevance of the subject.

Inhoud vak

The content of the literature thesis/colloquium depends on the subject which will be selected in consultation with master coordinator dr. JNM Commandeur (j.n.m.commandeur@vu.nl).

Onderwijsvorm

Literature study

Toetsvorm

Written literature thesis and oral presentation (colloquium) for the department of Pharmaceutical Sciences.

Aanbevolen voorkennis

The courses ADMET and Drug-induced stress and cellular responses or equivalent courses.

Doelgroep

mDDS-DDSA

Overige informatie

A list of subjects for the literature thesis and colloquium can be obtained from dr. JNM Commandeur (j.n.m.commandeur@vu.nl).

Major Research Project Biomol. Drug Analysis

Vakcode	X_432564 (432564)
Periode	Ac. Jaar (september)
Credits	42.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. H. Lingeman
Niveau	600

Doel vak

To acquire knowledge and insight into the role and objective of drug, bioanalytical and clinical development processes in complex samples using LC-MS and bio-assay-MS based approaches.

Inhoud vak

This project aims to provide the student with a theoretical and practical understanding of the issues involved in the design, conduct, analyses and interpretation of complex analytical studies.

Doelgroep

mDDS-BDA

Overige informatie

For further information please contact Henk Lingeman.

Major Research Project Biomol. Drug Analysis

Vakcode	X_432567 (432567)
Periode	Ac. Jaar (september)
Credits	48.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. H. Lingeman
Niveau	600

Doel vak

To acquire knowledge and insight into the role and objective of drug, bio-analytical and clinical development processes in complex samples using LC-MS and bio-assay-MS based approaches.

Inhoud vak

This project aims to provide the student with a theoretical and practical understanding of the issues involved in the design, conduct, analyses and interpretation of complex analytical studies.

Doelgroep

mDDS-BDA

Overige informatie

For further information please contact Henk Lingeman.

Major Research Project Biomol. Drug Analysis

Vakcode	X_432568 (432568)
Periode	Ac. Jaar (september)
Credits	54.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. H. Lingeman
Niveau	600

Doel vak

To acquire knowledge and insight into the role and objective of drug, bio-analytical and clinical development processes in complex samples using LC-MS and bio-assay-MS based approaches.

Inhoud vak

This project aims to provide the student with a theoretical and practical understanding of the issues involved in the design, conduct, analyses and interpretation of complex analytical studies.

Doelgroep

mDDS-BDA

Overige informatie

For further information please contact Henk Lingeman.

Major Research Project Biomol. Drug Analysis

Vakcode	X_432569 (432569)
Periode	Ac. Jaar (september)
Credits	60.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. H. Lingeman
Niveau	600

Doel vak

To acquire knowledge and insight into the role and objective of drug, bio-analytical and clinical development processes in complex samples using LC-MS and bio-assay-MS based approaches.

Inhoud vak

This project aims to provide the student with a theoretical and practical understanding of the issues involved in the design, conduct, analyses and interpretation of complex analytical studies.

Doelgroep

mDDS-BDA

Overige informatie

For further information please contact Henk Lingeman.

Major Research Project DDS Biomolecular Drug Analysis (C,E,M)

Vakcode	X_432727 ()
Periode	Ac. Jaar (september)
Credits	24.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. H. Lingeman
Niveau	600

Doel vak

To acquire knowledge and insight into the role and objective of drug, bio-analytical and clinical development processes in complex samples using LC-MS and bio-assay-MS base approaches.

Inhoud vak

This project aims to provide the student with a theoretical and practical understanding of the issues involved in the design, conduct, analyses and interpretation of complex analytical studies.

Doelgroep

mDDS-BDA

Overige informatie

For further information please contact Henk Lingeman.

Major Research Project DDS Medicinal Chemistry, DD&S

Vakcode	X_432728 ()
Periode	Ac. Jaar (september)
Credits	24.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. M. Wijtmans
Niveau	600

Doel vak

To obtain experience in design & synthesis techniques and in doing scientific research.

Inhoud vak

Within medicinal chemistry research, computational chemistry and organic synthesis play a major role in designing and preparing small organic ligands as e.g. protein modulators. During the traineeship, the student actively participates in a research project at e.g. the VU Drug Design and Synthesis laboratories and as such contributes to new scientific results. The focus can be on organic synthesis, on drug design, or on both. Attention will be paid to setting up research experiments, using state-of-the-art experimental techniques, analyzing experimental results and keeping adequate documentation. In all, the student will get exposed

to the joys of doing research as well as to exciting contemporary synthetic and/or design techniques.

The student will twice report on the research progress in an oral presentation. The traineeship is completed with a written report.

Toetsvorm

Presentation, report, practical work.

Literatuur

Will be provided by the supervisor. The first 1-2 weeks of the traineeship will be spent on literature reading.

Doelgroep

mDDS-DD&S

Overige informatie

Please contact the coordinator well in advance.

Major Research Project DDS Medicinal Chemistry, DD&S

Vakcode	X_432545 (432545)
Periode	Ac. Jaar (september)
Credits	54.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. M. Wijtmans
Niveau	600

Doel vak

To obtain experience in design & synthesis techniques and in doing scientific research.

Inhoud vak

Within medicinal chemistry research, computational chemistry and organic synthesis play a major role in designing and preparing small organic ligands as e.g. protein modulators. During the traineeship, the student actively participates in a research project at e.g. the VU Drug Design and Synthesis laboratories and as such contributes to new scientific results. The focus can be on organic synthesis, on drug design, or on both. Attention will be paid to setting up research experiments, using state-of-the-art experimental techniques, analyzing experimental results and keeping adequate documentation. In all, the student will get exposed to the joys of doing research as well as to exciting contemporary synthetic and/or design techniques.

The student will twice report on the research progress in an oral presentation. The traineeship is completed with a written report.

Toetsvorm

Presentation, report, practical work.

Literatuur

Will be provided by the supervisor. The first 1-2 weeks of the traineeship will be spent on literature reading.

Doelgroep

Overige informatie

Please contact the coordinator well in advance.

There are four variants of this traineeship. Extension of the traineeship up to 60 ECTS can be incorporated as part of the optional part of the MSc program.

432509: 42 ECTS

432544: 48 ECTS

432545: 54 ECTS

432546: 60 ECTS

Major Research Project DDS Medicinal Chemistry, DD&S

Vakcode	X_432509 (432509)
Periode	Ac. Jaar (september)
Credits	42.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. M. Wijtmans
Niveau	600

Doel vak

To obtain experience in design & synthesis techniques and in doing scientific research.

Inhoud vak

Within medicinal chemistry research, computational chemistry and organic synthesis play a major role in designing and preparing small organic ligands as e.g. protein modulators. During the traineeship, the student actively participates in a research project at e.g. the VU Drug Design and Synthesis laboratories and as such contributes to new scientific results. The focus can be on organic synthesis, on drug design, or on both. Attention will be paid to setting up research experiments, using state-of-the-art experimental techniques, analyzing experimental results and keeping adequate documentation. In all, the student will get exposed to the joys of doing research as well as to exciting contemporary synthetic and/or design techniques.

The student will twice report on the research progress in an oral presentation. The traineeship is completed with a written report.

Toetsvorm

Presentation, report, practical work.

Literatuur

Will be provided by the supervisor. The first 1-2 weeks of the traineeship will be spent on literature reading.

Doelgroep

mDDS-DD&S

Overige informatie

Please contact the coordinator well in advance.

There are four variants of this traineeship. Extension of the traineeship up to 60 ECTS can be incorporated as part of the optional part of the MSc program.

432509: 42 ECTS
432544: 48 ECTS
432545: 54 ECTS
432546: 60 ECTS

Major Research Project DDS Medicinal Chemistry, DD&S

Vakcode	X_432544 (432544)
Periode	Ac. Jaar (september)
Credits	48.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. M. Wijtmans
Niveau	600

Doel vak

To obtain experience in design & synthesis techniques and in doing scientific research.

Inhoud vak

Within medicinal chemistry research, computational chemistry and organic synthesis play a major role in designing and preparing small organic ligands as e.g. protein modulators. During the traineeship, the student actively participates in a research project at e.g. the VU Drug Design and Synthesis laboratories and as such contributes to new scientific results. The focus can be on organic synthesis, on drug design, or on both. Attention will be paid to setting up research experiments, using state-of-the-art experimental techniques, analyzing experimental results and keeping adequate documentation. In all, the student will get exposed to the joys of doing research as well as to exciting contemporary synthetic and/or design techniques.

The student will twice report on the research progress in an oral presentation. The traineeship is completed with a written report.

Toetsvorm

Presentation, report, practical work.

Literatuur

Will be provided by the supervisor. The first 1-2 weeks of the traineeship will be spent on literature reading.

Doelgroep

mDDS-DD&S

Overige informatie

Please contact the coordinator well in advance.

There are four variants of this traineeship. Extension of the traineeship up to 60 ECTS can be incorporated as part of the optional part of the MSc program.

432509: 42 ECTS
432544: 48 ECTS
432545: 54 ECTS
432546: 60 ECTS

Major Research Project DDS Medicinal Chemistry, DD&S

Vakcode	X_432546 (432546)
Periode	Ac. Jaar (september)
Credits	60.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. M. Wijtmans
Niveau	600

Doel vak

To obtain experience in design & synthesis techniques and in doing scientific research.

Inhoud vak

Within medicinal chemistry research, computational chemistry and organic synthesis play a major role in designing and preparing small organic ligands as e.g. protein modulators. During the traineeship, the student actively participates in a research project at e.g. the VU Drug Design and Synthesis laboratories and as such contributes to new scientific results. The focus can be on organic synthesis, on drug design, or on both. Attention will be paid to setting up research experiments, using state-of-the-art experimental techniques, analyzing experimental results and keeping adequate documentation. In all, the student will get exposed to the joys of doing research as well as to exciting contemporary synthetic and/or design techniques.

The student will twice report on the research progress in an oral presentation. The traineeship is completed with a written report.

Toetsvorm

Presentation, report, practical work.

Literatuur

Will be provided by the supervisor. The first 1-2 weeks of the traineeship will be spent on literature reading.

Doelgroep

mDDS-DD&S

Overige informatie

Please contact the coordinator well in advance.

There are four variants of this traineeship. Extension of the traineeship up to 60 ECTS can be incorporated as part of the optional part of the MSc program.

432509: 42 ECTS

432544: 48 ECTS

432545: 54 ECTS

432546: 60 ECTS

Major Research Project DDS Medicinal Chemistry, DDTF

Vakcode	X_432729 ()
Periode	Ac. Jaar (september)
Credits	24.0
Voertaal	Engels

Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. M.H. Siderius
Niveau	600

Major Research Project DDS Molecular Toxicology, CMCT

Vakcode	X_432730 ()
Periode	Ac. Jaar (september)
Credits	24.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. D.P. Geerke
Niveau	600

Major Research Project DDS Molecular Toxicology, DDSA

Vakcode	X_432559 (432559)
Periode	Ac. Jaar (september)
Credits	42.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. J.N.M. Commandeur
Niveau	600

Doel vak

To perform research in the area of molecular and biochemical toxicology and to get familiar with experimental approaches used in this field. To define a hypothesis based on previous observations or publications, and to design, execute and critically interpret the experiments performed to test specific hypotheses.

Inhoud vak

The research project will be carried out in the context in one of the PhD- or postdoc-projects which are carried out in the section Molecular Toxicology.

Generally, the research is focussed on the role of drug metabolising enzymes, such as cytochromes P450, glutathione transferases, sulfotransferases, etc. in the bioactivation and bioinactivation of toxic drugs and other chemicals, identification of genetically determined enzymes, drug-drug interactions, the identification of reactive intermediates and cellular targets of reactive intermediates and cellular responses related to cytotoxicity or adaptation reactions.

Onderwijsvorm

Experimental research project, starting with a brief literature survey on the topic to be investigated.

Toetsvorm

Written report, (participation to) work discussions, and oral presentation in the section of Molecular Toxicology.

Literatuur

Relevant reviews will be provided at the start of the project.

Aanbevolen voorkennis

Courses ADMET, Drug-induced stress and cellular signalling or equivalent courses.

Doelgroep

mDDS-DDSA

Overige informatie

Registration for a research project should be ultimately 4 weeks in advance. General information on projects to which the student can participate will be provided by master coordinator dr JNM Commandeur (j.n.m.commandeur@vu.nl) and, more specifically, by PhD-students and postdocs of the section Molecular Toxicology.

Major Research Project DDS Molecular Toxicology, DDSA

Vakcode	X_432561 (432561)
Periode	Ac. Jaar (september)
Credits	48.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. J.N.M. Commandeur
Niveau	600

Doel vak

To perform research in the area of molecular and biochemical toxicology and to get familiar with experimental approaches used in this field.

To define a hypothesis based on previous observations or publications, and to design, execute and critically interpret the experiments performed to test specific hypotheses.

Inhoud vak

The research project will be carried out in the context in one of the PhD- or postdoc-projects which are carried out in the section Molecular Toxicology.

Generally, the research is focussed on the role of drug metabolising enzymes, such as cytochromes P450, glutathione transferases, sulfotransferases, etc. in the bioactivation and bioinactivation of toxic drugs and other chemicals, identification of genetically determined enzymes, drug-drug interactions, the identification of reactive intermediates and cellular targets of reactive intermediates and cellular responses related to cytotoxicity or adaptation reactions.

Onderwijsvorm

Experimental research project, starting with a brief literature survey on the topic to be investigated.

Toetsvorm

Written report, (participation to) work discussions, and oral presentation in the section of Molecular Toxicology.

Literatuur

Relevant reviews will be provided at the start of the project.

Aanbevolen voorkennis

Courses ADMET, Drug-induced stress and cellular signalling or equivalent courses.

Doelgroep

mDDS-DDSA

Overige informatie

Registration for a research project should be ultimately 4 weeks in advance. General information on projects to which the student can participate will be provided by master coordinator dr JNM Commandeur (j.n.m.commandeur@vu.nl) and, more specifically, by PhD-students and postdocs of the section Molecular Toxicology.

Major Research Project DDS Molecular Toxicology, DDSA

Vakcode	X_432562 (432562)
Periode	Ac. Jaar (september)
Credits	54.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. J.N.M. Commandeur
Niveau	600

Doel vak

To perform research in the area of molecular and biochemical toxicology and to get familiar with experimental approaches used in this field.

To define a hypothesis based on previous observations or publications, and to design, execute and critically interpret the experiments performed to test specific hypotheses.

Inhoud vak

The research project will be carried out in the context in one of the PhD- or postdoc-projects which are carried out in the section Molecular Toxicology.

Generally, the research is focussed on the role of drug metabolising enzymes, such as cytochromes P450, glutathione transferases, sulfotransferases, etc. in the bioactivation and bioinactivation of toxic drugs and other chemicals, identification of genetically determined enzymes, drug-drug interactions, the identification of reactive intermediates and cellular targets of reactive intermediates and cellular responses related to cytotoxicity or adaptation reactions.

Onderwijsvorm

Experimental research project, starting with a brief literature survey on the topic to be investigated.

Toetsvorm

Written report, (participation to) work discussions, and oral presentation in the section of Molecular Toxicology.

Literatuur

Relevant reviews will be provided at the start of the project.

Aanbevolen voorkennis

Courses ADMET, Drug-induced stress and cellular signalling or equivalent courses.

Doelgroep

mDDS-DDSA

Overige informatie

Registration for a research project should be ultimately 4 weeks in advance. General information on projects to which the student can participate will be provided by master coordinator dr JNM Commandeur (j.n.m.commandeur@vu.nl) and, more specifically, by PhD-students and postdocs of the section Molecular Toxicology.

Major Research Project DDS Molecular Toxicology, DDSA

Vakcode	X_432563 (432563)
Periode	Ac. Jaar (september)
Credits	60.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. J.N.M. Commandeur
Niveau	600

Doel vak

To perform research in the area of molecular and biochemical toxicology and to get familiar with experimental approaches used in this field.

To define a hypothesis based on previous observations or publications, and to design, execute and critically interpret the experiments performed to test specific hypotheses.

Inhoud vak

The research project will be carried out in the context in one of the PhD- or postdoc-projects which are carried out in the section Molecular Toxicology.

Generally, the research is focussed on the role of drug metabolising enzymes, such as cytochromes P450, glutathione transferases, sulfotransferases, etc. in the bioactivation and bioinactivation of toxic drugs and other chemicals, identification of genetically determined enzymes, drug-drug interactions, the identification of reactive intermediates and cellular targets of reactive intermediates and cellular responses related to cytotoxicity or adaptation reactions.

Onderwijsvorm

Experimental research project, starting with a brief literature survey on the topic to be investigated.

Toetsvorm

Written report, (participation to) work discussions, and oral presentation in the section of Molecular Toxicology.

Literatuur

Relevant reviews will be provided at the start of the project.

Aanbevolen voorkennis

Courses ADMET, Drug-induced stress and cellular signalling or equivalent courses.

Doelgroep

mDDS-DDSA

Overige informatie

Registration for a research project should be ultimately 4 weeks in advance. General information on projects to which the student can participate will be provided by master coordinator dr JNM Commandeur (j.n.m.commandeur@vu.nl) and, more specifically, by PhD-students and postdocs of the section Molecular Toxicology

Major Research Project DDS Molecular Toxicology, DDSA (C,E,M)

Vakcode	X_432731 ()
Periode	Ac. Jaar (september)
Credits	24.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. J.N.M. Commandeur
Niveau	600

Doel vak

To perform research in the area of molecular and biochemical toxicology and to get familiar with experimental approaches used in this field. To define a hypothesis based on previous observations or publications, and to design, execute and critically interpret the experiments performed to test specific hypotheses.

Inhoud vak

The research project will be carried out in the context in one of the PhD- or postdoc-projects which are carried out in the section Molecular Toxicology.

Generally, the research is focussed on the role of drug metabolising enzymes, such as cytochromes P450, glutathione transferases, sulfotransferases, etc. in the bioactivation and bioinactivation of toxic drugs and other chemicals, identification of genetically determined enzymes, drug-drug interactions, the identification of reactive intermediates and cellular targets of reactive intermediates and cellular responses related to cytotoxicity or adaptation reactions.

Onderwijsvorm

Experimental research project, starting with a brief literature survey on the topic to be investigated.

Toetsvorm

Written report, (participation to) work discussions, and oral presentation in the section of MOlecular Toxicology.

Literatuur

Relevant reviews will be provided at the start of the project.

Aanbevolen voorkennis

Courses ADMET, Drug-induced stress and cellular signalling or equivalent courses,

Doelgroep

mDDS-DDSA

Overige informatie

Registration for a research project should be ultimately 4 weeks in advance. General information on projects to which the student can participate will be provided by master coordinator dr JNM Commandeur (j.n.m.commandeur@vu.nl) and, more specifically, by PhD-students and postdocs of the section Molecular Toxicology

Major Research Project Med. Chem., Drug Disc. & Target Find.

Vakcode	X_432550 (432550)
Periode	Ac. Jaar (september)
Credits	48.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. M.H. Siderius
Niveau	600

Major Research Project Med. Chem., Drug Disc. & Target Find.

Vakcode	X_432551 (432551)
Periode	Ac. Jaar (september)
Credits	54.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. M.H. Siderius
Niveau	600

Major Research Project Med. Chem., Drug Disc. & Target Find.

Vakcode	X_432552 (432552)
Periode	Ac. Jaar (september)
Credits	60.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. M.H. Siderius
Niveau	600

Major Research Project Med. Chem., Drug Disc. & Target Find.

Vakcode	X_432547 (432547)
Periode	Ac. Jaar (september)

Credits	42.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. M.H. Siderius
Niveau	600

Overige informatie

Period: variable

Major Research Project Mol. Tox., Comp. Med. Chem. & Tox.

Vakcode	X_432553 (432553)
Periode	Ac. Jaar (september)
Credits	42.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. D.P. Geerke
Niveau	600

Major Research Project Mol. Tox., Comp. Med. Chem. & Tox.

Vakcode	X_432556 (432556)
Periode	Ac. Jaar (september)
Credits	48.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. D.P. Geerke
Niveau	600

Major Research Project Mol. Tox., Comp. Med. Chem. & Tox.

Vakcode	X_432557 (432557)
Periode	Ac. Jaar (september)
Credits	54.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. D.P. Geerke
Niveau	600

Major Research Project Mol. Tox., Comp. Med. Chem. & Tox.

Vakcode	X_432558 (432558)
Periode	Ac. Jaar (september)
Credits	60.0
Voertaal	Engels

Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. D.P. Geerke
Niveau	600

Managing Science and Technology in Society

Vakcode	AM_470586 ()
Periode	Periode 1
Credits	6.0
Voertaal	Engels
Faculteit	Fac. der Aard- en Levenswetenschappen
Coördinator	dr. T.J. Schuitmaker-Warnaar
Docent(en)	dr. B.J. Regeer, dr. J.F.H. Kupper, dr. C.W.M. Dedding, dr. T.J. Schuitmaker-Warnaar, prof. dr. J.E.W. Broerse
Lesmethode(n)	Hoorcollege, Werkgroep
Niveau	600

Doel vak

In this course, students:

- acquire knowledge and understanding of philosophical and social science theories on science and technology development.
- gain insight into the mutual shaping of science & technology and society.
- acquire knowledge and understanding of the basic concepts and issues in the field of science and technology studies.
- acquire knowledge and understanding of the approach of constructive technology assessment.
- acquire knowledge and understanding of interactive methods for directing and guiding developments in science and technology.
- gain insight into the need for democratization of science and technology.
- learn to recognize and operate the central STS concepts in their own life worlds.
- learn to communicate verbally and in scientific writing about their knowledge and understanding and to critically reflect on that.

Inhoud vak

The 'Managing Science and Technology in Society' course offers an advanced introduction into the academic field of 'Science Technology & Society Studies'.

As an MPA student you are trained to operate at the interface of your natural science discipline and society, thereby making a contribution to answering the complex social problems arising in these areas. At the dawn of the 21st century, technology and science have an enormous potential for transforming life on earth. At the same time, the dimensions of our human culture shape the directions in which science and technology develop. The production of scientific knowledge and technological artefacts can solve some of our problems, but at the same time they give rise to new problems. During this course you will study the interactions of science and technology with society, and the various ways in which they mutually shape one another. These interactions invoke a lot of questions. Should we embrace genetically modified food? How do new human reproductive technologies interfere with the way we deal with

sexuality and social responsibilities?

In this course you will get acquainted with a conceptual framework to critically assess these kinds of questions. It aims at understanding the intertwinement of science, technology and society, and the importance of a broad concern with these interactions, in order to shape our future in the way that we want it.

Onderwijsvorm

'Managing Science and Technology in Society' is a fulltime course of four weeks (6 ECTS). The course schedule is available on blackboard. The total study time is 168 hours. Tuition methods include lectures, work groups, a group project and self-study.

The different elements have the following study time:

- lectures 22 hours
- work groups 12 hours
- group project 32 hours
- self study (including mini-essays) 88 hours
- examination (take-home) 14 hours

Toetsvorm

The examination consists of:

- Mini-essay 1 (20%)
- Mini-essay 2 (20%)
- Final essay (take-home essay exam) (40%)
- SCOB-project (20%)

Literatuur

The literature of this course consists of selected chapters from the book An introduction to science and technology studies, Sergio Sismondo 2010, which can be purchased at the VU book shop. Complementary articles are provided for via blackboard, august 2013.

Doelgroep

Compulsory course within the second year of the Master Management, Policy Analysis and Entrepreneurship for the Health and Life Sciences (MPA)

Overige informatie

Guest Lecturers:

- Wouter Mensink (SCP, UvA)
- Harro van Lente (UU)
- Steven Flipse (TU Delft, De Proeffabriek)

More information: T.J.Schuitmaker@vu.nl

Mass Spectrometry

Vakcode	X_435604 (435604)
Periode	Periode 2
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Niveau	400

Inhoud vak

<http://studiegids.uva.nl/xmlpages/page/2014-2015/zoek-vak/vak/229>

Toetsvorm

Written examination.

Vereiste voorkennis

Basic knowledge of mass spectrometry, organic chemistry and biochemistry.

Doelgroep

mCh-AS, mDDS-BCCA, mDDS-DDTF, mDDS-C-var, mDDS-E-var, mDDS-M-var

Overige informatie

Registration via <https://www.sis.uva.nl> is mandatory 4 weeks before the start of the Semester.

Master Thesis DDS, Copenhagen University

Vakcode	X_432828 ()
Periode	Ac. Jaar (september)
Credits	37.5
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	ir. A.A. Timmer
Niveau	600

Doel vak

Training of students in the design and synthesis of new drugs and bioactive molecules, the establishment of key toxicological and pharmacological profiles and molecular characterization of drug targets, aspects of importance in the early stages of drug discovery and development.

Inhoud vak

Students will do a Master internship in one of the specializations where they get acquainted with pharmacological, toxicological, drug design and synthesis approaches, molecular biological and cell-based techniques, innovative analytical methodologies or advanced computational modeling approaches.

Onderwijsvorm

Research internship

Toetsvorm

Practical performance of research, Master thesis, final presentation

Literatuur

Provided by the supervisors

Doelgroep

mDDS

Overige informatie

Please contact the Master coordinator well in advance.

Master Thesis DDS, Kopenhagen University

Vakcode	X_432829 ()
Periode	Ac. Jaar (september)
Credits	45.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	ir. A.A. Timmer
Niveau	600

Doel vak

Training of students in the design and synthesis of new drugs and bioactive molecules, the establishment of key toxicological and pharmacological profiles and molecular characterization of drug targets, aspects of importance in the early stages of drug discovery and development.

Inhoud vak

Students will do a Master internship in one of the specializations where they get acquainted with pharmacological, toxicological, drug design and synthesis approaches, molecular biological and cell-based techniques, innovative analytical methodologies or advanced computational modeling approaches.

Onderwijsvorm

Research internship

Toetsvorm

Practical performance of research, Master thesis, final presentation

Literatuur

Provided by supervisors

Doelgroep

mDDS

Overige informatie

Contact Master coordinator in advance

Master Thesis DDS, Kopenhagen University

Vakcode	X_432830 ()
Periode	Ac. Jaar (september)
Credits	52.5
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	ir. A.A. Timmer
Niveau	600

Doel vak

Training of students in the design and synthesis of new drugs and bioactive molecules, the establishment of key toxicological and

pharmacological profiles and molecular characterization of drug targets, aspects of importance in the early stages of drug discovery and development.

Inhoud vak

Students will do a Master internship in one of the specializations where they get acquainted with pharmacological, toxicological, drug design and synthesis approaches, molecular biological and cell-based techniques, innovative analytical methodologies or advanced computational modeling approaches.

Onderwijsvorm

Research internship

Toetsvorm

Practical performance of research, Master thesis, final presentation

Literatuur

Provided by supervisors

Doelgroep

mDDS

Overige informatie

Contact Master coordinator in advance

Master Thesis DDS, Copenhagen University

Vakcode	X_432831 ()
Periode	Ac. Jaar (september)
Credits	60.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	ir. A.A. Timmer
Niveau	600

Doel vak

Training of students in the design and synthesis of new drugs and bioactive molecules, the establishment of key toxicological and pharmacological profiles and molecular characterization of drug targets, aspects of importance in the early stages of drug discovery and development.

Inhoud vak

Students will do a Master internship in one of the specializations where they get acquainted with pharmacological, toxicological, drug design and synthesis approaches, molecular biological and cell-based techniques, innovative analytical methodologies or advanced computational modeling approaches.

Onderwijsvorm

Research internship

Toetsvorm

Practical performance of research, Master thesis, final presentation

Literatuur

Provided by supervisors

Doelgroep

mDDS

Overige informatie

Contact Master coordinator in advance

Medicinal and Biostructural Chemistry

Vakcode	X_437571 ()
Periode	Periode 1
Credits	7.5
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	ir. A.A. Timmer
Niveau	500

Overige informatie

This course is taught at Copenhagen University (KU)

Detailed course descriptions at KU are available from:

<http://www.farma.ku.dk/index.php/Course-catalogue/4635/0/>

Contact your master coordinator to discuss your complete VU en KU programme

Minor Research Project Biomol. Drug Analysis

Vakcode	X_432658 (432658)
Periode	Ac. Jaar (september)
Credits	24.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. H. Lingeman
Niveau	500

Doel vak

To acquire knowledge and insight into the role and objective of drug, bio-analytical and clinical development processes in complex samples using LC-MS and bio-assay-MS based approaches.

Inhoud vak

This project aims to provide the student with a theoretical and practical understanding of the issues involved in the design, conduct, analyses and interpretation of complex analytical studies.

Doelgroep

mDDS

Overige informatie

For further information please contact Henk Lingeman.

Minor Research Project Biomol. Drug Analysis

Vakcode	X_432689 (432689)
Periode	Ac. Jaar (september)
Credits	18.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. H. Lingeman
Niveau	500

Doel vak

To acquire knowledge and insight into the role and objective of drug, bio-analytical and clinical development processes in complex samples using LC-MS and bio-assay-MS based approaches.

Inhoud vak

This project aims to provide the student with a theoretical and practical understanding of the issues involved in the design, conduct, analyses and interpretation of complex analytical procedures.

Doelgroep

mDDS

Overige informatie

For further information please contact Henk Lingeman.

Minor Research Project Biomol. Drug Analysis

Vakcode	X_432704 ()
Periode	Ac. Jaar (september)
Credits	30.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. H. Lingeman
Niveau	500

Doel vak

To acquire knowledge and insight into the role and objective of drug, bio-analytical and clinical development processes in complex samples using LC-MS and bio-assay-MS based approaches.

Inhoud vak

This project aims to provide the student with a theoretical and practical understanding of the issues involved in the design, conduct, analyses and interpretation of complex analytical studies.

Doelgroep

mDDS

Overige informatie

For further information please contact Henk Lingeman.

Minor Research Project DDS Medicinal Chemistry, DD&S

Vakcode	X_432692 (432692)
Periode	Ac. Jaar (september)
Credits	18.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. M. Wijtmans
Niveau	500

Doel vak

To obtain experience in design & synthesis techniques and in doing scientific research.

Inhoud vak

Within medicinal chemistry research, computational chemistry and organic synthesis play a major role in designing and preparing small organic ligands as e.g. protein modulators. During the traineeship, a student from another background can actively participate in a medicinal chemistry research project. The focus can be on organic synthesis, on drug design, or on both. Attention will be paid to setting up research experiments, using state-of-the-art experimental techniques, analyzing experimental results and keeping adequate documentation.

Toetsvorm

Presentation, report, practical work.

Literatuur

Will be provided by the supervisor. The first 1-2 weeks of the traineeship will be spent on literature reading.

Aanbevolen voorkennis

Thorough knowledge of organic chemistry.

Doelgroep

mDDS, mCh

Overige informatie

Please contact the coordinator well in advance.

Minor Research Project DDS Medicinal Chemistry, DD&S

Vakcode	X_432693 (432693)
Periode	Ac. Jaar (september)
Credits	24.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. M. Wijtmans
Niveau	500

Doel vak

To obtain experience in design & synthesis techniques and in doing scientific research.

Inhoud vak

Within medicinal chemistry research, computational chemistry and organic synthesis play a major role in designing and preparing small organic ligands as e.g. protein modulators. During the traineeship, a student from another background can actively participate in a medicinal chemistry research project. The focus can be on organic synthesis, on drug design, or on both. Attention will be paid to setting up research experiments, using state-of-the-art experimental techniques, analyzing experimental results and keeping adequate documentation.

Toetsvorm

Presentation, report, practical work.

Literatuur

Will be provided by the supervisor. The first 1-2 weeks of the traineeship will be spent on literature reading.

Vereiste voorkennis

Basic knowledge of organic chemistry.

Aanbevolen voorkennis

Thorough knowledge of organic chemistry.

Doelgroep

mDDS, mCh

Overige informatie

Please contact the coordinator well in advance.

Minor Research Project DDS Medicinal Chemistry, DD&S

Vakcode	X_432705 (432705)
Periode	Ac. Jaar (september)
Credits	30.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. M. Wijtmans
Niveau	500

Doel vak

To obtain experience in design & synthesis techniques and in doing scientific research.

Inhoud vak

Within medicinal chemistry research, computational chemistry and organic synthesis play a major role in designing and preparing small organic ligands as e.g. protein modulators. During the traineeship, a student from another background can actively participate in a medicinal chemistry research project. The focus can be on organic synthesis, on drug design, or on both. Attention will be paid to setting up research

experiments, using state-of-the-art experimental techniques, analyzing experimental results and keeping adequate documentation.

Toetsvorm

Presentation, report, practical work.

Literatuur

Will be provided by the supervisor. The first 1-2 weeks of the traineeship will be spent on literature reading.

Vereiste voorkennis

Basic knowledge of organic chemistry.

Aanbevolen voorkennis

Thorough knowledge of organic chemistry.

Doelgroep

mDDS, mCh

Overige informatie

Please contact the coordinator well in advance.

Minor Research Project DDS Molecular Toxicology, CMCT

Vakcode	X_432632 (432632)
Periode	Ac. Jaar (september)
Credits	24.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. D.P. Geerke
Niveau	500

Minor Research Project DDS Molecular Toxicology, DDSA

Vakcode	X_432620 (432620)
Periode	Ac. Jaar (september)
Credits	18.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. J.N.M. Commandeur
Niveau	500

Doel vak

To perform research in the area of molecular and biochemical toxicology and to get familiar with experimental approaches used in this field.

To define a hypothesis based on previous observations or publications, and to design, execute and critically interpret the experiments performed to test specific hypotheses.

Inhoud vak

The research project will be carried out in the context in one of the PhD- or postdoc-projects which are carried out in the section Molecular

Toxicology.

Generally, the research is focussed on the role of drug metabolising enzymes, such as cytochromes P450, glutathione transferases, sulfotransferases, etc. in the bioactivation and bioinactivation of toxic drugs and other chemicals, identification of genetically determined enzymes, drug-drug interactions, the identification of reactive intermediates and cellular targets of reactive intermediates and cellular responses related to cytotoxicity or adaptation reactions.

Onderwijsvorm

Experimental research project, starting with a brief literature survey on the topic to be investigated.

Toetsvorm

Written report, (participation to) work discussions, and oral presentation in the section of Molecular Toxicology.

Literatuur

Relevant reviews will be provided at the start of the project.

Aanbevolen voorkennis

Courses ADMET, Drug-induced stress and cellular signalling or equivalent courses.

Doelgroep

mDDS-DDTF, mDDS-CMCT, mDDS-DD&S, mDDS-BCCA

Overige informatie

Registration for a research project should be ultimately 4 weeks in advance. General information on projects to which the student can participate will be provided by master coordinator dr JNM Commandeur (j.n.m.commandeur@vu.nl) and, more specifically, by PhD-students and postdocs of the section Molecular Toxicology.

Minor Research Project DDS Molecular Toxicology, DDSA

Vakcode	X_432591 (432591)
Periode	Ac. Jaar (september)
Credits	24.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. J.N.M. Commandeur
Niveau	500

Doel vak

To perform research in the area of molecular and biochemical toxicology and to get familiar with experimental approaches used in this field.

To define a hypothesis based on previous observations or publications, and to design, execute and critically interpret the experiments performed to test specific hypotheses.

Inhoud vak

The research project will be carried out in the context in one of the PhD- or postdoc-projects which are carried out in the section Molecular Toxicology.

Generally, the research is focussed on the role of drug metabolising

enzymes, such as cytochromes P450, glutathione transferases, sulfotransferases, etc. in the bioactivation and bioinactivation of toxic drugs and other chemicals, identification of genetically determined enzymes, drug-drug interactions, the identification of reactive intermediates and cellular targets of reactive intermediates and cellular responses related to cytotoxicity or adaptation reactions.

Onderwijsvorm

Experimental research project, starting with a brief literature survey on the topic to be investigated.

Toetsvorm

Written report, (participation to) work discussions, and oral presentation in the section of Molecular Toxicology.

Literatuur

Relevant reviews will be provided at the start of the project.

Aanbevolen voorkennis

Courses ADMET, Drug-induced stress and cellular signalling or equivalent courses.

Doelgroep

mDDS-DDTF, mDDS-CMCT, mDDS-DD&S, mDDS-BCCA

Overige informatie

Registration for a research project should be ultimately 4 weeks in advance. General information on projects to which the student can participate will be provided by master coordinator dr JNM Commandeur (j.n.m.commandeur@vu.nl) and, more specifically, by PhD-students and postdocs of the section Molecular Toxicology.

Minor Research Project DDS Molecular Toxicology, DDSA

Vakcode	X_432592 (432592)
Periode	Ac. Jaar (september)
Credits	30.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. J.N.M. Commandeur
Niveau	500

Doel vak

To perform research in the area of molecular and biochemical toxicology and to get familiar with experimental approaches used in this field. To define a hypothesis based on previous observations or publications, and to design, execute and critically interpret the experiments performed to test specific hypotheses.

Inhoud vak

The research project will be carried out in the context in one of the PhD- or postdoc-projects which are carried out in the section Molecular Toxicology.

Generally, the research is focussed on the role of drug metabolising enzymes, such as cytochromes P450, glutathione transferases, sulfotransferases, etc. in the bioactivation and bioinactivation of

toxic drugs and other chemicals, identification of genetically determined enzymes, drug-drug interactions, the identification of reactive intermediates and cellular targets of reactive intermediates and cellular responses related to cytotoxicity or adaptation reactions.

Onderwijsvorm

Experimental research project, starting with a brief literature survey on the topic to be investigated.

Toetsvorm

Written report, (participation to) work discussions, and oral presentation in the section of Molecular Toxicology.

Literatuur

Relevant reviews will be provided at the start of the project.

Aanbevolen voorkennis

Courses ADMET, Drug-induced stress and cellular signalling or equivalent courses.

Doelgroep

mDDS-DDTF, mDDS-CMCT, mDDS-DD&S, mDDS-BCCA

Overige informatie

Registration for a research project should be ultimately 4 weeks in advance. General information on projects to which the student can participate will be provided by master coordinator dr JNM Commandeur (j.n.m.commandeur@vu.nl) and, more specifically, by PhD-students and postdocs of the section Molecular Toxicology.

Minor Research Project DDS, CMCT

Vakcode	X_432707 ()
Periode	Ac. Jaar (september)
Credits	30.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. D.P. Geerke
Niveau	500

Minor Research Project DDS, CMCT

Vakcode	X_432507 (432507)
Periode	Ac. Jaar (september)
Credits	18.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. D.P. Geerke
Niveau	500

Inhoud vak

Period: Variable

Minor Research Project Med. Chem., Drug Disc. & Target Find.

Vakcode	X_432706 (432706)
Periode	Ac. Jaar (september)
Credits	30.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. M.H. Siderius
Niveau	500

Minor Research Project Med. Chem., Drug Disc. & Target Find.

Vakcode	X_432696 (432696)
Periode	Ac. Jaar (september)
Credits	18.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. M.H. Siderius
Niveau	500

Overige informatie

Period: variable

Minor Research Project Med. Chem., Drug Disc. & Target.Find.

Vakcode	X_432635 (432635)
Periode	Ac. Jaar (september)
Credits	24.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. M.H. Siderius
Niveau	500

Omics-procedures in molecular clinical Diagnostics

Vakcode	X_432766 ()
Periode	Periode 5
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. H. Lingeman
Docent(en)	dr. H. Lingeman
Lesmethode(n)	Hoorcollege
Niveau	400

Doel vak

The primary objective of this course is highlighting the various omics-approaches that are used in drug- and biomarker discovery.

Inhoud vak

Omic-approaches involve the comparison of metabolomes, proteomes and genomes between control and test groups to find differences in their profiles. Those differences may be correlated to the disease being studied in clinical biomarker discovery or changes in the metabolic output in toxicology studies. During the course the fundamentals and applications of omic-based techniques will be discussed. The focus will be on the separation (e.g. chromatography, electrophoresis), detection/identification (e.g. MS, NMR, Spectroscopic) and chemometric procedures to unravel complex biological and clinical samples

Onderwijsvorm

Lectures and projects

Literatuur

Hands-outs (electronically available)

Doelgroep

mCH-AS, mDDS, mMNS

Overige informatie

X_432733 vervalt en is vervangen door X_432766

Pharmaceutical Analytical Chemistry

Vakcode	X_437574 ()
Periode	Periode 4
Credits	7.5
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	ir. A.A. Timmer
Niveau	500

Overige informatie

This course is taught at Copenhagen University (KU)

Detailed course descriptions at KU are available from:

<http://www.farma.ku.dk/index.php/Course-catalogue/4635/0/>

Contact your master coordinator to discuss your complete VU en KU programme

Pharmaceutical Formulation of Peptides and Proteins

Vakcode	X_437575 ()
Periode	Periode 1
Credits	7.5
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen

Coördinator	ir. A.A. Timmer
Niveau	500

Overige informatie

This course is taught at Copenhagen University (KU)

Detailed course descriptions at KU are available from:

<http://www.farma.ku.dk/index.php/Course-catalogue/4635/0/>

Contact your master coordinator to discuss your complete VU en KU programme

Pharmaceutical Preformulation

Vakcode	X_437577 ()
Credits	7.5
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	ir. A.A. Timmer
Niveau	500

Overige informatie

This course is taught at Copenhagen University (KU)

Detailed course descriptions at KU are available from:

<http://www.farma.ku.dk/index.php/Course-catalogue/4635/0/>

Contact your master coordinator to discuss your complete VU en KU programme

Pharmacokinetics and Pharmacodynamics

Vakcode	X_437578 ()
Credits	7.5
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	ir. A.A. Timmer
Niveau	500

Overige informatie

This course is taught at Copenhagen University (KU)

Detailed course descriptions at KU are available from:

<http://www.farma.ku.dk/index.php/Course-catalogue/4635/0/>

Contact your master coordinator to discuss your complete VU en KU programme

Pharmacology: from Physiology to Therapy

Vakcode	X_437579 ()
Periode	Periode 4
Credits	7.5
Voertaal	Engels

Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	ir. A.A. Timmer
Niveau	500

Overige informatie

This course is taught at Copenhagen University (KU)

Detailed course descriptions at KU are available from:

<http://www.farma.ku.dk/index.php/Course-catalogue/4635/0/>

Contact your master coordinator to discuss your complete VU en KU programme

Physical-Organic Chemistry

Vakcode	X_435663 (435663)
Periode	Periode 1
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Lesmethode(n)	Hoorcollege, Werkcollege
Niveau	400

Doel vak

Survey of structural features, reaction mechanisms, and physical organic concepts needed in organic chemistry.

Inhoud vak

Advanced organic chemistry course centered around chemical bonding, stereochemical principles, conformational and stereo-electronic effects, isotope effects, reaction mechanisms, nucleophilic substitutions, eliminations, aromaticity, carbocations, carbanions, radicals, pericyclic reactions, and acid-base catalysis. These structural and mechanistic concepts are essential in organic synthesis.

Onderwijsvorm

Lectures and tutorials with homework

Toetsvorm

Written or oral examination and assignments.

Literatuur

Anslyn, E.V., and Duggerty, D.A., Modern Physical Organic Chemistry. University Science Books, 2006.

Vereiste voorkennis

BSc

Aanbevolen voorkennis

BSc S, BSc F

Doelgroep

mCh, mF

Policy, Politics and Participation

Vakcode	AM_470589 ()
Periode	Periode 2
Credits	6.0
Voertaal	Engels
Faculteit	Fac. der Aard- en Levenswetenschappen
Coördinator	prof. dr. J.T. de Cock Buning
Docent(en)	dr. B.J. Regeer, dr. J.F.H. Kupper, prof. dr. J.E.W. Broerse
Lesmethode(n)	Hoorcollege, Werkgroep
Niveau	500

Doel vak

To further deepen your analytic skills with respect to the assessment of a specific societal problem;

To acquire further insight into the practice of interactive research;

To acquire further insights into specific methods and techniques of interactive research;

To strengthen the skills to design an interactive research project

To practice skills in data collection and analysis;

To learn to set up valid lines of argumentation;

To improve your communication skills;

To improve your skills in working effectively in a project team, through team building, team analysis and feedback.

Inhoud vak

In this course you get the chance to gain experience in the practical implementation of methodologies for interactive research. In a four week policy project you will both improve your focus group research skills and deepen your understanding of the relevant theoretical concepts in the areas of policy studies, science and technology studies and democracy theory. In a group of about ten students you will participate in a real interactive research project which is executed at the Athena institute. In this project you will be trained in and practice various skills for data collection (such as focus group design and facilitation) and data analysis (such as qualitative content analysis).

Specific attention is paid to your personal interactive research skills.

At the end of the course, you

prepare a policy report to present your findings. In an oral presentation your team will highlight the main results of your analysis and defend the recommendations you propose.

Onderwijsvorm

Lectures, training workshops, project assignment

Toetsvorm

Individual evaluation based on personal performance in the project group and assessment of various group products (report and presentation). All parts need to be passed.

Literatuur

To be announced on Blackboard

Doelgroep

Optional course for Master students Management, Policy Analysis and Entrepreneurship in Health and Life sciences (MPA), Societal differentiation of the Health, Life & Natural Sciences.

Overige informatie

Basic knowledge of (interactive) policy processes, policy analysis and relevant research skills are required.

Attendance is compulsory.

Principles of Pharmaceutical Sciences / Pharmacochemistry

Vakcode	X_435675 (435675)
Periode	Periode 1
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	prof. dr. I.J.P. de Esch
Docent(en)	prof. dr. N.P.E. Vermeulen, prof. dr. I.J.P. de Esch
Lesmethode(n)	Hoorcollege
Niveau	400

Doel vak

General introduction into and deepening of knowledge of concepts, mechanisms and recent developments in pharmaceutical sciences and the pharmaceutical and biotech industry.

Inhoud vak

This course is designed for students with an interest in life sciences and the biotech/pharmaceutical industry but without prior education in this field. A general introduction will be given to the process of drug discovery, drug design and synthesis, drug development and drug safety assessment. Subsequently, potential drug targets, mechanisms of drug actions (including drug-receptor/enzyme) Using various drug classes, relationships between chemical structures and biological activities will be derived and illustrated. Finally, various modern developments and tools will be illustrated by recent applications in the field of drug research, medicinal chemistry and toxicology.

Onderwijsvorm

Lectures and tutorials.

Toetsvorm

Written examination, case studies and Blackboard assignments.

Literatuur

Patrick, G., An Introduction to Medicinal Chemistry 5th ed.
Oxford: Oxford University Press. 2009, ISBN: 978-0-19-969739-7

Doelgroep

3S, 3MNW, mCh, mPhys. The course is optional for mDDS students that did not follow the VU University BSc pharmaceutical sciences and these mDDS students should contact the mDDS coordinator before enrolling.

Project Computational Design and Synthesis of Drugs

Vakcode	X_432734 ()
Periode	Periode 4

Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. C. de Graaf
Examinator	dr. C. de Graaf
Docent(en)	dr. M. Wijtmans, dr. C. de Graaf, dr. D.P. Geerke
Lesmethode(n)	Hoorcollege, Practicum
Niveau	400

Doel vak

To gain insight and experience in the molecular modeling tools that enable (rational) drug design and to examine and plan efficient routes to synthesize conceived ligands.

Inhoud vak

In the post-genome era, an overwhelming amount of data describing the molecular characteristics of the targets is becoming available. For example, the structure of many proteins is being determined using X-Ray analysis and NMR techniques. Furthermore, high-throughput screening results in massive amounts of data that reveal the molecular properties of the ligands that are able to have interaction with the drug targets. In this project, several techniques that can help to translate this data into novel ligands will be discussed and applied. Specific topics include crystal structure analysis, the building of homology models, docking of ligands, calculating binding free energy and affinity of ligands for the protein, de novo structure generation, and pharmacophore modeling. These techniques generate ideas for novel compounds. Because a design that cannot be synthesized is by definition a useless design, the synthetic feasibility is a key and integral part of the design process. Therefore, it is important to be able to define a synthetic pathway for the preparation of the designed compounds. In this project, this aspect will be covered by lectures on the concept of retrosynthesis and on the incorporation of some biologically relevant moieties, such as heteroaromatic scaffolds and known affinity-increasers. An online retrosynthetic demonstration with a search engine sets the stage for a case study. For a specific design, a versatile and robust synthesis route has to be defined. A thorough literature search, in combination with detailed study of the reactions involved will result in a report that describes the suggested chemistry in detail.

Onderwijsvorm

Project basis: including lectures, tutorials, self study, assignments and group-work on a case-study.

Toetsvorm

Written examination, preparation of a report.

Vereiste voorkennis

Knowledge of basic organic chemistry.

Doelgroep

mDDS-BCCA, mDDS-CMCT, mDDS-DD&S, mDDS-DDSA, mDDS-DDTF, mDDS-C-var, mDDS-E-var, mDDS-M-var

Protein Analysis

Vakcode	X_435045 (435045)
Periode	Periode 5
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. H. Lingeman
Docent(en)	dr. H. Lingeman
Lesmethode(n)	Hoorcollege
Niveau	500

Doel vak

Providing a clear overview on the principles and techniques that can be used for the qualitative and quantitative determination of protein-type of compounds.

Inhoud vak

The qualitative and quantitative determination of protein frequently is performed by a combination of chromatographic /electrophoretic and mass spectrometric techniques. The principles of these techniques will be discussed as well as their applications. Special attention will be given to sample treatment procedures and affinity-based separation techniques. With respect to the identification of unknown biological macromolecules, the power of hyphenated techniques in combination with the various modes of mass spectrometry will be highlighted.

Onderwijsvorm

Lectures and tutorials

Toetsvorm

Oral examination.

Literatuur

Hand-outs (electronically available).

Vereiste voorkennis

Basic knowledge of biochemistry, separation sciences, spectroscopy and mass spectrometry.

Doelgroep

mCh, mDDS

Qualitative and Quantitative Research Methods

Vakcode	AM_470582 ()
Periode	Periode 1
Credits	6.0
Voertaal	Engels
Faculteit	Fac. der Aard- en Levenswetenschappen
Coördinator	dr. J.F.H. Kupper
Docent(en)	dr. H. Wels, dr. B.J. Regeer, dr. J.F.H. Kupper, dr. ir. R. Hoopman
Lesmethode(n)	Hoorcollege, Werkgroep, Computerpracticum

Doel vak

Understanding the differences between beta- and gamma research
To acquire insight and understanding of a transdisciplinary research process. This includes knowledge of the character of and need for transdisciplinary approaches, and their advantages and disadvantages
To acquire insight into various quantitative and qualitative research methods and their underlying theoretical concepts
To understand the relative strengths and weaknesses of the various research methods
To know how to interpret quantitative and qualitative findings
To acquire insight and understanding of the possibilities to integrate quantitative and qualitative research information
To be able to make an adequate transdisciplinary research design for the investigation of a specific problem.

Inhoud vak

Contemporary societies increasingly face complex social problems, like climate change, HIV/ AIDS or ethnic and religious diversity . These complex problems involve a variety of social actors: policy-makers, professionals, NGOs, industry, science and of course the public at large. Addressing such complex issues demands a transdisciplinary approach that investigates, analyzes and integrates the positions and knowledge of different actors. This course offers an (advanced) introduction to various research methods used in transdisciplinary research: questionnaires, systematic observations using all the senses, surveys and statistics, semi-structured in-depth interviews, as well as several interactive and participatory methods. These methods are commonly used in transdisciplinary research into complex problem contexts, communication, and opportunities for intervention. Strengths and weaknesses of each research method and technique will be discussed, as well as its possibility to be applied in different societal contexts. Throughout the course, you will apply theoretical knowledge about the various research methodologies in the training of different qualitative and quantitative methods, and in making a research design. In small groups, students are trained in: (1) qualitative research methods such as semi structured interviews and observation techniques, (2) quantitative research methods such as questionnaires, 3) analysis of the data, and (4) writing a transdisciplinary research design.

Onderwijsvorm

Lecture (20h), Training workshops (30h), Self-study (107h), Examination (3h).

Toetsvorm

Group assignment (50%) and exam (50%). Both parts need to be passed (6).

Literatuur

Announced on blackboard one month before course starts

Doelgroep

Compulsory course in the Master programme Management, Policy Analysis and Entrepreneurship for the Health and Life Sciences (MPA) and compulsory course within the Science communication- and Societal differentiations of Health, Life and Natural Sciences Masters programmes.

Overige informatie

Attendance of training workshops is compulsory. For further information please contact harry.wels@falw.vu.nl.

Research Project in Pharmaceuticals and Drug Discovery

Vakcode	X_437582 ()
Periode	Periode 5+6
Credits	15.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	ir. A.A. Timmer
Niveau	500

Overige informatie

This course is taught at Copenhagen University (KU)

Detailed course descriptions at KU are available from:

<http://www.farma.ku.dk/index.php/Course-catalogue/4635/0/>

Contact your master coordinator to discuss your complete VU en KU programme

Science and Communication

Vakcode	AM_470587 ()
Periode	Periode 1
Credits	6.0
Voertaal	Engels
Faculteit	Fac. der Aard- en Levenswetenschappen
Coördinator	dr. B.J. Regeer
Docent(en)	dr. B.J. Regeer, dr. J.F.H. Kupper, T. de Lange MSc, B.M. Tielemans
Lesmethode(n)	Hoorcollege, Werkgroep
Niveau	500

Doel vak

- Gain theoretical insight in the relationship between science and society,
- Gain insight in the role of science communication in this relationship,
- Acquire knowledge of different theories and models of science communication,
- Acquire knowledge of different strategies, media and activities for science communication,
- Learn how to apply theoretical concepts to real-life examples,
- Development of practical skills for science communication (e.g. writing, discussing).

Inhoud vak

Science is all around us and shapes our lives in many different ways. From the vaccines you need for travelling abroad, to the technological

devices you use on a daily basis. At the same time, society shapes the development of science and technology. Science and society influence each other continuously; they communicate. Students of Science Communication are expected to become experts in understanding and designing interaction between science and society. In order for this interaction to be fruitful and valuable for both science and society, it is important to gain in-depth knowledge about the theoretical basis of the field of science communication and understand communication processes at the core of several interfaces; e.g. the communication between scientists from different disciplines, between different sciences and their stakeholders, and between science and the public. This course provides a broad basis in the field of science communication by addressing the main areas of science communication and by discussing and challenging several core concepts within this field. Students are invited to explore some issues in greater depth and active participation in lectures and workgroups is required.

Onderwijsvorm

Lectures (22 h)

Workgroups (18 h)

Home-study for group assignments (8 h)

Home-study for individual assignments/exam (90h)

Toetsvorm

Individual assignments (30%), group assignment (10%), examination (60%).

For all parts a pass grade needs to be obtained.

Literatuur

Academic articles. Direct links to articles will be provided on BlackBoard one month before the beginning of the course.

Doelgroep

The course Science and Communication is a compulsory course for students of the Master specialisation Science Communication

(Wetenschapscommunicatie) and is a prerequisite for the internship.

Science and Communication is an optional course for students from other master programs in the health and life sciences.

Overige informatie

Guest lecturers amongst others:

A. van der Plas (TNO)

F. van Dam (CSG, Centre for Society and the Life Sciences)

Science in Dialogue

Vakcode	AM_1002 ()
Periode	Periode 2
Credits	6.0
Voertaal	Engels
Faculteit	Fac. der Aard- en Levenswetenschappen
Coördinator	dr. J.F.H. Kupper
Docent(en)	dr. J.F.H. Kupper
Lesmethode(n)	Werkgroep, Hoorcollege
Niveau	500

Doel vak

To gain knowledge and insight into:

- the basic concepts and issues in the understanding of science-society interactions, both from a philosophical and communication science perspective
- the nature and course of interpersonal and group communication processes relevant to the formal and informal dialogue between science and society
- the nature and form of dialogical science communication, aimed at mutual understanding and learning

To acquire or improve:

- the individual student's skills for effective interpersonal communication
- the individual student's skills for the design and facilitation of the science-society dialogue

Inhoud vak

This course examines the public character of scientific controversy and focuses on the communicative aspects of a fruitful science-society dialogue. At the dawn of the 21st century, science, and particularly fields that combine science and engineering such as nanotechnology and synthetic biology, holds a great promise for the progress of our societies. At the same time, these developments are controversial. They lead to a variety of concerns related to risks, benefits and wider moral issues. Nanotechnology creates materials with novel characteristics that help us, but may also contain risks for health and environment. Synthetic biology develops new biological systems that may be very useful, but radically change the nature and meaning of life. Clearly, advances in science do not always match the needs, desires and expectations of society. On the other hand, parts of society might not always appreciate the nature and scope of scientific findings. For a fruitful relationship between science and society, a constructive science-society dialogue is necessary.

This course offers advanced lectures on the basic concepts and issues of dialogical science communication: communication, learning, dialogue, understanding, controversy, democracy. A series of workshops and small group assignments presents communicative tools and spaces such as discussion games, science theatre and multimedia platforms that can be used to design and facilitate science-society interactions. Training workshops will focus on improving the students' individual communication and facilitation skills. The students' individual learning curve as a science communicator and facilitator is monitored by means of a personal development plan. The course is completed with an individual essay assignment about the sense and nonsense of the science-society dialogue.

Onderwijsvorm

Lectures (14h), Workgroups (28h), Training workshops (24h), Selfstudy, (82h), Dialogue presentations (12h)

Toetsvorm

Group assignment (50%), Take home exam (30%), Mini portfolio (20%)

Literatuur

Is announced on blackboard one month before start of the course

Doelgroep

Optional course in the MSc specialization Science Communication

Overige informatie

Independence and a cooperative attitude is expected. Attendance to training workshops is indispensable.

Science Journalism

Vakcode	AM_471014 ()
Periode	Periode 2
Credits	6.0
Voertaal	Engels
Faculteit	Fac. der Aard- en Levenswetenschappen
Coördinator	dr. J.F.H. Kupper
Docent(en)	dr. J.F.H. Kupper, W.J. Breukers MSc, dr. M.J.W. Bos
Lesmethode(n)	Hoorcollege, Werkgroep, Computerpracticum
Niveau	500

Doel vak

To acquire knowledge and insight into:

- the popularization of natural scientific knowledge and the use of different media
- the criteria for effective science journalism with respect to diverse media
- the role of science journalists in the debate about knowledge in society

To acquire skills in:

- writing popular scientific texts for different genres such as news, background and interview
- designing science communication for different media such as newspaper, radio and internet

Orientation to the professional practice of science journalism

Inhoud vak

This course teaches the basic principles of science journalism. A series of interactive lectures reviews both the practical as well as the theoretical aspects of science journalism. Topics that are discussed are the translation of science to a language that is both compelling and understandable, the role of journalism in the interaction between science and society, images of science in the media and the ethics of science journalism. The interactive lectures invite you to take your own defensible position with regard to these issues.

Guest lectures provide insight into the professional practice of science journalists. The guest speakers work as freelancer, editor or producer at diverse science media, such as newspapers (NRC, Volkskrant), magazines (NWT), internet (Noorderlicht) and radio (Labyrint).

Finally, the course trains specific skills that you need as a science journalist, such as popular writing, interviewing, conceptual analysis and program design.

Onderwijsvorm

Lectures and seminars on theory and practice of science journalism and writing skill training (36h). Considerable time is set aside for performing science journalism in assignments (108h). The assignments are assessed by lecturers and fellow students (peer-review process). Self

study (16h).

Toetsvorm

Individual exam (20%), Individual Assignments (50%, Small Group Assignments (30%)

Literatuur

Announced on Blackboard one month before start of the course

Doelgroep

All Master students with a Beta-Bachelor degree. Students taking this course as part of their C-differentiation within FALW or FEW will have precedence over other students. Students from other faculties and or universities need to get formal consent from the course co-ordinator (Frank Kupper) before enrolment.

Overige informatie

Course is taught in Dutch. More information: f.kupper@vu.nl.

Science Museology

Vakcode	AM_470590 ()
Periode	Periode 3
Credits	6.0
Voertaal	Engels
Faculteit	Fac. der Aard- en Levenswetenschappen
Coördinator	dr. B.J. Regeer
Docent(en)	dr. B.J. Regeer, drs. ir. M.G. van der Meij, T. de Lange MSc
Lesmethode(n)	Hoorcollege, Werkgroep
Niveau	500

Doel vak

- Gain insight in the role of museum exhibits in the field of science communication.
- Apply theoretical notions of science communication and science education, to conduct science communication research in museum settings.
- Apply qualitative and quantitative research methods to design, conduct, and report on a research project in museum settings.
- Apply theoretical notions of science communication, science education and exhibit design to advise on adjustments and/or development of exhibitions.

Inhoud vak

This course is about the role of science museums/centers, zoos and natural history museums in science communication. You will get familiar with theories of science communication and informal science education in museum setting, and will be introduced to different educational methods as well as styles of communication, different approaches to exhibit design & development, and different methods of research and evaluation of exhibitions.

Guest speakers give insight into their profession (1) as science communicators in museums and science centers, (2) as researchers in the field of museology, and/or (3) as professionals in developing informal science & technology learning programs.

Through several assignments you are encouraged to combine theory and practice, working step-by-step towards (part of) an exhibition (re-) design. The assignments come from museums and science centers, such as NEMO, Museon, Naturalis, Delft Science Centre, and Artis.

Onderwijsvorm

Lectures (14 h)

Workgroups (40 h)

Home-study for group assignments (64 h)

Home-study for individual assignments (32 h)

Toetsvorm

Group assignment (40%), presentations (poster and oral) (10%), and exams (take-home and written) (50%). For all the assignment, presentations and all exams a pass-grade must be obtained.

Literatuur

Academic articles. Direct links to articles will be provided on Blackboard one month before the beginning of the course.

Vereiste voorkennis

Bachelor in any of the Beta Sciences

Doelgroep

Optional course in the C-differentiations (Science Communication) of most of the two-year master programs of the FALW and FEW faculties. Master students from other universities in any scientific field are welcome as well.

Overige informatie

Guest lecturers:

E. Hamstra (Northernlight)

C. Vermeulen (Artis)

M. van der Meer (Delft Science Centre)

I. van Zeeland (Naturalis)

And possibly additional guest lecturers from NEMO, Boijmans van Beuningen, Museon, Van Gogh Museum, etc.

Scientific Writing in English

Vakcode	X_400592 (400592)
Periode	Periode 2, Periode 6
Credits	3.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	M. van den Hoorn
Lesmethode(n)	Hoorcollege, Werkcollege
Niveau	400

Doel vak

The aim of this course is to provide the writing student with the essential linguistic means for producing English academic texts which are effective, idiomatically and stylistically appropriate and grammatically correct.

Inhoud vak

The initial focus in the course lies on the form of scientific texts in the Exact Sciences:

- Abstract (or summary)
- Introduction
- Methods
- Results
- Discussion

General course outline

Introducing the topics

- Academic and technical writing in English
- The characteristics of different kinds of scientific texts
- How scientific writing is judged and assessed
- Where do you find your information and how do you present it?
- How to avoid committing plagiarism

Who am I writing for? What do I want to say?

- Your readership
- Key parts of an academic article: title, abstract, introduction, methods, results and discussion

Writing the actual article

- Paragraph and sentence construction: how do I link paragraphs together?
- Writing simple and complex sentences. Active and passive sentences.
- Argumentation : how do I put an argument? How do I frame my own opinion?

Should I use "I" or "we"?

Writing correct English

- Use of apostrophes and colons
- Word order, verb tenses, time and tense
- Avoiding mistakes typically made by Dutch writers
- Common spelling mistakes

You will be making considerable use of peer assessment: examining fellow students' written work and giving them feedback. This method provides useful insights into how a text might be improved. The process of providing someone else with feedback on their text is something that you will find very instructive.

Onderwijsvorm

The course is focused on self-tuition. The plenary sessions concentrate on the process of writing and the product of writing. Homework is part of the course. With each topic, participants work through a phased series of exercises that usually conclude with the requirement to write a short piece of text. The instructor will append extensive written remarks to this text.

Toetsvorm

There will be no examination. However, students will receive their credits only when they have participated in all classes (presence is obligatory) and also when they have handed in the assignments satisfactorily. Students will receive a 'pass' when they have finished the course.

Literatuur

For this course you need the book *Effective Scientific Writing: an advanced learner's guide to better English* (A. Bolt & W. Bruins, ISBN 978 90 8659 6171). This book can be obtained at the VU bookstore, which

is located in the VU main building. The costs are € 27,95 per book. For questions contact the Taalcentrum-VU at 020 - 598 9804.

Vereiste voorkennis

Bachelor Exact Sciences

Doelgroep

Optional for mAI, mCS, mIS, mBIO, mPDCS, mCh, mDDS, mPhys.

Signal Transduction in Health and Disease

Vakcode	X_432535 (432535)
Periode	Periode 2
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	prof. dr. M.J. Smit
Docent(en)	dr. M.J. Smit
Lesmethode(n)	Hoorcollege
Niveau	600

Doel vak

At the end of this theoretical course, the students are aware of the latest insights of cellular signal transduction in both healthy and pathological conditions.

Inhoud vak

This course will link human genetic variation (somatic and inherited mutations) to the development of disease and will focus on pathological signaling, mutant signaling proteins in disease and possible treatment of resulting disease (small compounds, biologicals, gene therapy). Modern pharmacological concepts, including constitutive receptor activity, receptor regulation, allosteric modulation and dimerization will be addressed in light of signal transduction in health and disease. A special focus will be on signal transduction resulting in pathologies such as Alzheimer, Parkinson's disease, inflammatory diseases and cancer.

Onderwijsvorm

Lectures, self-study.

Students will do a case study in groups on a receptor/protein family linked to disease. Molecular mechanisms underlying pathology will be addressed and presented.

Toetsvorm

Assignment and presentation, written exam.

Literatuur

Marks e.a., Cellular Signal Processing. Garland Sci (ISBN 0-8153-4215-2).

Papers available on Blackboard

Aanbevolen voorkennis

Bachelor Biology, Medical Biology, Pharmaceutical Sciences, Medical Natural Sciences, Biomolecular Science portal course or equivalent

Doelgroep

mBMS-BC, mDDS-BCCA, mDDS-CMCT, mDDS-DD&S, mDDS-DDSA, mDDS-DDTF, mDDS-C-var, mDDS-E-var, mDDS-M-var, mMNS-MCD, mMNS-MPy

Statistical Design of Experiments

Vakcode	X_437583 ()
Periode	Periode 2+3
Credits	7.5
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	ir. A.A. Timmer
Niveau	500

Overige informatie

This course is taught at Copenhagen University (KU)

Detailed course descriptions at KU are available from:

<http://www.farma.ku.dk/index.php/Course-catalogue/4635/0/>

Contact your master coordinator to discuss your complete VU en KU programme

Structural and computational medicinal Chemistry

Vakcode	X_437584 ()
Periode	Periode 2+3
Credits	7.5
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	ir. A.A. Timmer
Niveau	500

Overige informatie

This course is taught at Copenhagen University (KU)

Detailed course descriptions at KU are available from:

<http://www.farma.ku.dk/index.php/Course-catalogue/4635/0/>

Contact your master coordinator to discuss your complete VU en KU programme

Supramolecular Chemistry and Nanomaterials

Vakcode	X_435653 (435653)
Periode	Periode 1
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Lesmethode(n)	Hoorcollege
Niveau	400

Inhoud vak

The course description is available at
<http://studiegids.uva.nl/web/uva/sgs/en/c/211.html>

Doelgroep

mCh-MDSC, mCh-MSP, mDDS-CMCT, mDDS-DDSA, mDDS-DDTF

Overige informatie

Course registration at the UVA is compulsory at least 4 weeks before the start of the semester via <https://www.sis.uva.nl>

Synthetic Approaches in Medicinal Chemistry

Vakcode	X_435685 (435685)
Periode	Periode 2
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. M. Wijtmans
Docent(en)	prof. dr. I.J.P. de Esch, dr. M. Wijtmans
Lesmethode(n)	Hoorcollege
Niveau	500

Doel vak

To obtain detailed knowledge of vital organic reactions and synthetic strategies.

Inhoud vak

Within a medicinal chemistry context, organic synthesis continues to play a vital role because it allows perceived organic molecules to actually be prepared. A medicinal chemist with thorough knowledge of the synthetic toolbox will be able to efficiently find his/her way to a target molecule.

First, a brief recap of some synthesis principles is offered. Then, the course will focus on the most important and generally used synthetic reactions. These include reactions of nucleophilic carbon intermediates, nucleophilic substitutions, electrophilic additions to carbon-carbon multiple bonds, reductions, oxidations, cycloadditions, aromatic substitution reactions, rearrangements, and reactions of transition metals as well as of Group I and II metals. Collectively, this course delivers the synthetic knowledge necessary for efficient synthesis of organic molecules. The dynamic character of the synthetic toolbox is illustrated by the regular inclusion of important findings from very recent literature.

Onderwijsvorm

"Flipped classroom method".

This means that all lectures have been recorded (slides + audio) and need to be independently studied by the students (there are no regular classes). Rather, contact hours are used for intensive problem solving sessions.

Toetsvorm

Written examination(s).

Literatuur

Carey, F.A., Sundberg, R.J., Advanced Organic Chemistry, Part B, 5th edition.

Aanbevolen voorkennis

Knowledge of basic organic chemistry.

Doelgroep

mDDS-DD&S

Teaching Assistant

Vakcode	X_432742 ()
Periode	Ac. Jaar (september)
Credits	6.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	D.M. Vredenburg-Maasdijk MSc
Niveau	400

Teaching Assistant

Vakcode	X_432741 ()
Periode	Ac. Jaar (september)
Credits	3.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	D.M. Vredenburg-Maasdijk MSc
Niveau	400

Tutoring Students

Vakcode	X_432625 (432625)
Periode	Periode 2
Credits	3.0
Voertaal	Engels
Faculteit	Faculteit der Exacte Wetenschappen
Coördinator	dr. M. Wijtmans
Examinator	dr. M. Wijtmans
Docent(en)	dr. E.M.M. van Rens
Lesmethode(n)	Hoorcollege
Niveau	400

Doel vak

This course aims to prepare students for coaching tasks in tutorials and practical courses. Students will encounter aspects of teacher-student interaction, including several models that are involved in the coaching process.

Inhoud vak

The course contains various topics and activities. Students make an analysis of various learning aims as well as prepare, conduct and reflect on a presentation of a pre and post discussion regarding tutorials and practical courses. They will observe and interpret the application of problem solving and coaching models in tutorials and practical courses. Attention will be paid to strengths and weaknesses in models of teacher-student interaction. An important constituent is the student's analysis of his/her own pattern of communication. Topics on safety and lab journal procedures in practical courses as well as on the grading of lab reports are also included.

Onderwijsvorm

4 consecutive hours per week (seven weeks long):

- Lectures
- Simulations
- Self-study
- Group work

Toetsvorm

- An essay on the strengths and weaknesses in a model of teacher-student interaction.
- A learning report on presentations concerning predict, observe, explain in practical work.
- A written analysis on grading lab reports.
- A written feedback on the planning of and enactment in tutorials.

Literatuur

Will be provided.

Doelgroep

mCh-AS, mCh-MDSC, mCh-MSP, mCh-SES, mDDS-BCCA, mDDS-CMCT, mDDS-DD&S, mDDS-DDSA, mDDS-DDTF

Intekenprocedure

VUnet

Overige informatie

This course is compulsory for MSc students who become assistants in practical courses and tutorials in the department of Chemistry and Pharmaceutical Sciences. Moreover, the course is recommendable to any MSc student who has a general interest in educational coaching strategies and models.

Number of participants is limited to 24 (first-come, first-serve basis).

Priority is given to MSc students. If any of the 24 seats are left, the course may also be accessible to 3rd year BSc students FAR en SK with a strong interest in educational aspects (first-come, first-serve basis).

Interested BSc students should first contact Maikel Wijtmans (m.wijtmans@vu.nl).

Wetenschapscommunicatie voor Bèta-onderzoekers

Vakcode	AB_470185 ()
Periode	Periode 5
Credits	6.0
Voertaal	Nederlands
Faculteit	Fac. der Aard- en Levenswetenschappen
Coördinator	dr. J.F.H. Kupper
Docent(en)	dr. B.J. Regeer, dr. J.F.H. Kupper, C.A.C.M. Pittens MSc, drs. ir. M.G. van der Meij, R.C. van Koten MSc
Lesmethode(n)	Hoorcollege, Werkgroep
Niveau	200

Doel vak

- Introductie in het vakgebied wetenschapscommunicatie
- Verwerven van kennis en inzicht in de dynamische relatie tussen wetenschap en maatschappij
- Verwerven van inzicht in verschillende belangen en perspectieven van betrokken partijen in wetenschapscommunicatie
- Verwerven van inzicht in de rol van wetenschapscommunicatie in de relatie tussen wetenschap en maatschappij
- Verwerven van inzicht in communicatiestrategieën, doelgroepen en media in wetenschapscommunicatie
- Ontwikkeling van praktische vaardigheden voor wetenschapscommunicatie (schrijven, presenteren, discussiëren)
- Het opdoen van ervaring in een multidisciplinaire groep.

Inhoud vak

Wetenschap heeft verstrekkende gevolgen voor de maatschappij (bv. biotechnologie, neurowetenschappen, farmaceutische industrie). Maar hoe kijkt de maatschappij eigenlijk naar wetenschappelijke ontwikkelingen? Wat vindt de industrie van nieuwe wetenschappelijke inzichten? Hoe reageren maatschappelijke organisaties of het brede publiek? Deze maatschappelijke visies hebben een grote invloed op de richting die het onderzoek in de nabije toekomst gaat nemen. Daarom is communicatie over wetenschap van cruciaal belang.

In deze cursus raak je vertrouwt met een aantal modellen van wetenschapscommunicatie, het herkennen van hun toepassingen in de praktijk en de verschillende soorten publiek die men ermee kan aanspreken (populariseren voor leken, informatieoverdracht voor de industrie, faciliteren van interdisciplinair onderzoek in de wetenschap, participatie van burgers en patiënten in onderzoek). Door middel van opdrachten raak je bekend met de praktische kant van wetenschapscommunicatie, bijvoorbeeld wetenschapsjournalistiek, voorlichting, dialogen en debatten, etc. De opdrachten worden deels individueel uitgevoerd en deels in een groep.

Onderwijsvorm

Colleges 15 uur
 Zelfstudie en tentamen 70 uur
 Werkcolleges 15 uur
 Opdrachten 60 uur

Toetsvorm

Individuele toetsing bestaat uit:
 - Schriftelijk tentamen (50%)

- groepsopdrachten (25%)
- individuele opdrachten (25%)

Literatuur

Literatuur wordt aangeboden via Blackboard en een maand voor de cursus bekendgemaakt.

Doelgroep

Keuzecursus voor tweedejaars en derdejaars BSc Biomedische Wetenschappen en Biologie en BSc. Gezondheid en Leven. Ook te volgen voor de Bsc binnen Aardwetenschappen en Exacte Wetenschappen. Speciaal aanbevolen voor studenten die overwegen de C-variant (wetenschapscommunicatie) of M-variant (beleid en management) in hun masterprogramma op te nemen.

Overige informatie

We werken met enkele gastsprekers die een maand voor de cursus bekend zullen zijn.