Opasraportti

(2007 - 2008)

Tutkintorakenteisiin kuulumattomat opintokokonaisuudet ja -jaksot

747605S: Basic aspects of protein crystallographic methods, 3 op
740144P: Biochemical Methodologies I, 8 op
740365A: Biochemical Methodologies II, 8 op
747602S: Biochemistry of protein folding, 2,5 op
747603S: Bioinformatics, 2,5 op
740148P: Biomolecules, 5 op
740143P: Biomolecules for Biochemists, 8 op
740147P: Biomolecules for Bioscientists, 8 op
740362A: Cellular Biology, 6 op
740366A: Cellular Communication, 6 op
744618S: Dissertation, 18 op
740376A: Essay (B.Sc. thesis), 10 op
740372A: Final Examination, 6 op
747693S: Final examination in protein science and biotechnology, 9 op
740369A: Immunobiology, 3 op
747604S: Introduction to biocomputing, 3 op
740672S: Maturity test (M.Sc. degree), 0 op
740146P: Metabolism I, 6 op
740149P: Metabolism I, 4 op
740375A: Metabolism II, 4 op
740367A: Metabolism II, 6 op
740363A: Microbiology, 6 op
740374A: Microbiology, 3 op
740361A: Molecular Biology I, 8 op
740373A: Molecular Biology I, 4 op
740072Y: Orientation, 1 op
744617S: Orientation to research work, 0 - 20 op
740145P: Physical Biochemistry, 6 op
740371A: Physiological Biochemistry, 4 op
747691S: Pro gradu experimental work in protein science and biotechnology, 28 op
747692S: Pro gradu thesis in protein science and biotechnology, 20 op
740364A: Protein Chemistry I, 8 op
747601S: Protein production and analysis, 8 op
740368A: Radiation and Safety, 5 op
744609S: Structural enzymology, 2,5 op
744619S: Systems biology, 4 op
740074Y: Tutoring/confidental posts, 1,5 op

Opintojaksojen kuvaukset

Tutkintorakenteisiin kuulumattomien opintokokonaisuuksien ja -jaksojen kuvaukset

747605S: Basic aspects of protein crystallographic methods, 3 op

Opiskelumuoto: Advanced Studies
Laji: Course
Vastuuyksikkö: Department of Biochemistry
Arvostelu: 1 - 5, pass, fail
Opettajat: Wierenga Rikkert
Opintokohteen kielet: English
Leikkaavuudet:

744615S Basic aspects of protein crystallographic methods 3.0 op

ECTS Credits:
3 credits
Contents:
The course will describe the principles of x-ray diffraction theory. It will focus on aspects used in the field of protein crystallography including following topics: Crystallisation of proteins, symmetry properties of crystals, X-ray sources and detectors, the diffraction pattern and the reciprocal lattice, the phase problem, isomorphous differences and the MIR-method, anomalous differences and the MAD-method.
Learning activities and teaching methods:
20 h lectures and seminars
Person responsible:
Rik Wierenga

740144P: Biochemical Methodologies I, 8 op

Opiskelumuoto: Basic Studies
Laji: Course
Vastuuyksikkö: Department of Biochemistry
Arvostelu: 1 - 5, pass, fail
Opettajat: Jari Heikkinen
Opintokohteen kielet: Finnish
Leikkaavuudet:

ay740153P Basic biochemistry 2: Methods (OPEN UNI) 2.0 op
740151P Biochemical methodologies I 10.0 op
740117P Basic methods in biochemistry 4.0 op
740136P Laboratory course in basic methods of biochemistry 3.0 op

Voidaan suorittaa useasti: Kyllä

Ei opintojaksokuvauksia.

740365A: Biochemical Methodologies II, 8 op

Opiskelumuoto: Intermediate Studies
Laji: Course
Vastuuyksikkö: Department of Biochemistry
Arvostelu: 1 - 5, pass, fail
Opettajat: Ulrich Bergmann
Opintokohteen kielet: English

Leikkaavuudet:

747608S Biochemical methodologies II 8.0 op

ECTS Credits:
8 credits
Contents:
This module covers more advanced methodologies used in practical biochemistry. Methodologies covered include principles and practice of fluorescence spectroscopy, amino acid analysis, amino acid sequencing, circular dichroism, mass spectrometry 2D-PAGE, native PAGE, surface plasmon resonance, micro-calorimetry, micro-array technology, immunoprecipitation, isoelectric focusing, urea-gel electrophoresis, western-blotting, hybridisation, gas chromatography and capillary electrophoresis. Attendance is compulsory.
Learning activities and teaching methods:
120 h lab., including pre-lab lectures plus exercises 2. kl
Person responsible:
Ulrich Bergmann

747602S: Biochemistry of protein folding, 2,5 op

Voimassaolo: - 31.05.2011

Opiskelumuoto: Advanced Studies

Laji: Course

Vastuuyksikkö: Department of Biochemistry

Arvostelu: 1 - 5, pass, fail

Opettajat: Lloyd Ruddock

Opintokohteen kielet: English

Leikkaavuudet:

747611S Biochemistry of protein folding 3.0 op

ECTS Credits:
2,5 credits
Contents:
This module provides an introduction to protein folding in vivo. Topics covered include protein folding and quality control in the endoplasmic reticulum, mechanisms regulating protein folding including the unfolded protein response, the catalysis of native disulphide bond formation, the biochemistry of molecular chaperones and the role of molecular chaperones and protein folding catalysts in other cellular events. The module is assessed based on a report prepared on individual topics and on participation in the seminars.
Learning activities and teaching methods:
16 contact hours of lectures and seminars
Person responsible:
Lloyd Ruddock

747603S: Bioinformatics, 2,5 op

Opiskelumuoto: Advanced Studies

Laji: Course

Vastuuyksikkö: Department of Biochemistry

Arvostelu: 1 - 5, pass, fail

Opettajat: Ari-Pekka Kvist

Opintokohteen kielet: English

ECTS Credits:
2,5 credits
Contents:

This course indroduces basic consepts and methodology in bioinformatic research. Basic computational methods of DNA and protein handling and database searches are introduced. Other methods may include joining database and proteomic searches and evolutionary views of biocomputing. After this course a student has insight of basic methodology of bioinformatics.
Learning activities and teaching methods:
14 contact hours of lectures and practicals
Person responsible:
Ari-Pekka Kvist

740148P: Biomolecules, 5 op

Opiskelumuoto: Basic Studies
Laji: Course
Vastuuyksikkö: Department of Biochemistry
Arvostelu: 1 - 5, pass, fail
Opettajat: Lloyd Ruddock
Opintokohteen kielet: English
Leikkaavuudet:

ay740157P	Basic biochemistry 1: Biomolecules (OPEN UNI)	4.0 op
ay740152P	Basic biochemistry 1: Biomolecules (OPEN UNI)	5.0 op
740143P	Biomolecules for Biochemists	8.0 op
740147P	Biomolecules for Bioscientists	8.0 op

ECTS Credits:
5 credits
Contents:
This module provides an overview of biochemistry, outlining the forces involved in biomolecule structure and the chemical structures and properties of polynucleic acids, proteins, carbohydrates and lipids. There will also be an introduction to prebiotic evolution and a student debate on this subject. The module is arranged into lectures, workshops, a student debate. All of the exercises are in English. Both a final examination and continuous assessment will count towards the final mark and attendance of some parts is compulsory.
Learning activities and teaching methods:
30 h lu, plus exercises 1. sl – 1. kl
Recommended or required reading:
Mathews, van Holde & Ahern: Biochemistry, (3rd edition) , published by Addison Wesley Longman, Inc. or equivalent
Person responsible:
Lloyd Ruddock
Other information:
This module is the same as Biomolcules for Biochemists except that it contains no practical component.

740143P: Biomolecules for Biochemists, 8 op

Opiskelumuoto: Basic Studies
Laji: Course
Vastuuyksikkö: Department of Biochemistry
Arvostelu: 1 - 5, pass, fail
Opettajat: Lloyd Ruddock
Opintokohteen kielet: English
Leikkaavuudet:

ay740157P	Basic biochemistry 1: Biomolecules (OPEN UNI)	4.0 op
ay740152P	Basic biochemistry 1: Biomolecules (OPEN UNI)	5.0 op
740147P	Biomolecules for Bioscientists	8.0 op
740148P	Biomolecules	5.0 op

ECTS Credits:
8 credits
Contents:
This module provides an overview of biochemistry, outlining the forces involved in biomolecule structure and the chemical structures and properties of polynucleic acids, proteins, carbohydrates and lipids. There will also be an introduction to prebiotic evolution and a student debate on this subject. The module is arranged into lectures, workshops, a student debate and laboratory work. All of the exercises are in English. Both a final examination and continuous assessment will count towards the final mark and attendance of some parts is compulsory.
Learning activities and teaching methods:
30 h lu, 48 h lab., plus exercises 1. sl – 1. kl
Recommended or required reading:
Mathews, van Holde & Ahern: Biochemistry, (3rd edition), published by Addison Wesley Longman, Inc. or equivalent.
Person responsible:
Lloyd Ruddock

740147P: Biomolecules for Bioscientists, 8 op

Opiskelumuoto: Basic Studies

Laji: Course

Vastuuyksikkö: Department of Biochemistry

Arvostelu: 1 - 5, pass, fail

Opettajat: Lloyd Ruddock

Opintokohteen kielet: English

Leikkaavuudet:

ay740157P	Basic biochemistry 1: Biomolecules (OPEN UNI)	4.0 op
ay740152P	Basic biochemistry 1: Biomolecules (OPEN UNI)	5.0 op
740143P	Biomolecules for Biochemists	8.0 op
740148P	Biomolecules	5.0 op

ECTS Credits:
8 credits
Contents:
This module provides an overview of biochemistry, outlining the forces involved in biomolecule structure and the chemical structures and properties of polynucleic acids, proteins, carbohydrates and lipids. There will also be an introduction to prebiotic evolution and a student debate on this subject. The module is arranged into lectures, workshops, a student debate and laboratory work. All of the exercises are in English. Both a final examination and continuous assessment will count towards the final mark and attendance of some parts is compulsory.
Learning activities and teaching methods:
30 h lu, 48 h lab., plus exercises 1. sl – 1. kl
Recommended or required reading:
Mathews, van Holde & Ahern: Biochemistry, (3rd edition), published by Addison Wesley Longman, Inc. or equivalent
Person responsible:
Lloyd Ruddock
Other information:
This module is the same as Biomolecules for Biochemists except that there is the option for some of the exercises to be in Finnish.

740362A: Cellular Biology, 6 op

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Department of Biochemistry

Arvostelu: 1 - 5, pass, fail

Opettajat: Sakari Kellokumpu

Opintokohteen kielet: Finnish

Leikkaavuudet:

740323A Cell culture course 3.0 op
744610S Advanced course for cell biology 3.0 op

Ei opintojaksokuvauksia.

740366A: Cellular Communication, 6 op

Opiskelumuoto: Intermediate Studies
Laji: Course
Vastuuyksikkö: Department of Biochemistry
Arvostelu: 1 - 5, pass, fail
Opettajat: Sakari Kellokumpu
Opintokohteen kielet: English

Ei opintojaksokuvauksia.

744618S: Dissertation, 18 op

Opiskelumuoto: Advanced Studies
Laji: Course
Vastuuyksikkö: Department of Biochemistry
Arvostelu: 1 - 5, pass, fail
Opettajat: Lloyd Ruddock
Opintokohteen kielet: English
Leikkaavuudet:

744631S Dissertation 15.0 op

ECTS Credits:
18 credits
Contents:
This module is based around the student producing an extensive, in-depth literature report in the style of a scientific review. Students are responsible for finding a suitable supervisor for their dissertation with whom they will discuss the scientific background and relevant literature. Students are strongly encouraged to meet with their supervisor weekly to discuss progress and ideas and to resolve problems. A one-page outline of the dissertation subject area, including details of the supervisor (who need not be from the University of Oulu), must be approved by the module convener before starting this module. While the dissertation subject can be closely linked with the Pro Gradu project subject, students are advised that having distinct topics fro these two modules will look better on their CV
Learning activities and teaching methods:
480 hours of student work
Person responsible:
Lloyd Ruddock

740376A: Essay (B.Sc. thesis), 10 op

Opiskelumuoto: Intermediate Studies
Laji: Course
Vastuuyksikkö: Department of Biochemistry
Arvostelu: 1 - 5, pass, fail
Opettajat: Tuomo Glumoff
Opintokohteen kielet: Finnish

Ei opintojaksokuvauksia.

740372A: Final Examination, 6 op

Opiskelumuoto: Intermediate Studies
Laji: Course
Vastuuyksikkö: Department of Biochemistry
Arvostelu: 1 - 5, pass, fail
Opettajat: Lloyd Ruddock
Opintokohteen kielet: English

ECTS Credits:
6 credits
Contents:
This examination will test the ability of students to integrate knowledge from the core biochemistry modules they have taken dur-ing their BSc. It will include questions covering the material from Biomolecules for Biochemists, Biokemian menetelmät I, Physi-cal biochemistry, Aineenvahdunta I, Molekyylibiologia I, Solun biologia, Mikrobiologia, Protein Chemistry I, Biochemical method-ologies II, Solujen kommunikaatio and Aineenvaihdunta II. The questions will require an understanding of the basic principles of biochemistry and each will be based on subject specific material from at least two modules.
Learning activities and teaching methods:
Toteutus Student self-study
Person responsible:
Conveners from the core modules coordinated by Lloyd Ruddock

747693S: Final examination in protein science and biotechnology, 9 op

Opiskelumuoto: Advanced Studies
Laji: Course
Vastuuyksikkö: Department of Biochemistry
Arvostelu: 1 - 5, pass, fail
Opettajat: Lloyd Ruddock
Opintokohteen kielet: English

ECTS Credits:
9 credits
Person responsible:
Lloyd Ruddock

740369A: Immunobiology, 3 op

Voimassaolo: - 31.07.2009
Opiskelumuoto: Intermediate Studies
Laji: Course
Vastuuyksikkö: Department of Biochemistry
Arvostelu: 1 - 5, pass, fail
Opettajat: Surcel, Heljä-Marja Irmeli
Opintokohteen kielet: Finnish
Leikkaavuudet:

741661S Immunobiology 3.0 op

Ei opintojaksokuvauksia.

747604S: Introduction to biocomputing, 3 op

Opiskelumuoto: Advanced Studies
Laji: Course
Vastuuyksikkö: Department of Biochemistry
Arvostelu: 1 - 5, pass, fail
Opettajat: André Juffer
Opintokohteen kielet: English

ECTS Credits:
3 credits
Contents:
An overview is given of commonly employed techniques of biocomputing to study the structural, dynamical, functional and thermodynamical properties of proteins and membranes and their interaction with other molecules. This will include a overview of computer simulation techniques such as molecular dynamics, Monte Carlo and Langevin (stochastic, Brownian) dynamics, but also concepts of continuum electrostatics, statistical thermodynamics, protein modeling techniques, protein-ligand affinity calculations and the computer simulation of the protein folding process and enzyme action. In addition, some topics in the field of Bioinformatics are discussed as well and certain commonly employed protein modeling software is introduced.
Learning activities and teaching methods:
20 h lectures, student tasks
Person responsible:
Andre Juffer

740672S: Maturity test (M.Sc. degree), 0 op

Opiskelumuoto: Advanced Studies
Laji: Course
Vastuuyksikkö: Department of Biochemistry
Arvostelu: 1 - 5, pass, fail
Opintokohteen kielet: Finnish

Ei opintojaksokuvauksia.

740146P: Metabolism I, 6 op

Opiskelumuoto: Basic Studies
Laji: Course
Vastuuyksikkö: Department of Biochemistry
Arvostelu: 1 - 5, pass, fail
Opettajat: Tuomo Glumoff
Opintokohteen kielet: Finnish
Leikkaavuudet:

ay740158P	Basic biochemistry 3: Metabolis (OPEN UNI)	4.0 op
ay740154P	Basic biochemistry 3: Metabolis (OPEN UNI)	3.0 op
740149P	Metabolism I	4.0 op

Ei opintojaksokuvauksia.

740149P: Metabolism I, 4 op

Opiskelumuoto: Basic Studies
Laji: Course

Vastuuyksikkö: Department of Biochemistry
Arvostelu: 1 - 5, pass, fail
Opettajat: Tuomo Glumoff
Opintokohteen kielet: Finnish
Leikkaavuudet:

ay740158P	Basic biochemistry 3: Metabolis (OPEN UNI)	4.0 op
ay740154P	Basic biochemistry 3: Metabolis (OPEN UNI)	3.0 op
740146P	Metabolism I	6.0 op

Ei opintojaksokuvauksia.

740375A: Metabolism II, 4 op

Voimassaolo: - 31.07.2012
Opiskelumuoto: Intermediate Studies
Laji: Course
Vastuuyksikkö: Department of Biochemistry
Arvostelu: 1 - 5, pass, fail
Opettajat: Tuomo Glumoff
Opintokohteen kielet: Finnish
Leikkaavuudet:

740367A	Metabolism II	6.0 op

Ei opintojaksokuvauksia.

740367A: Metabolism II, 6 op

Opiskelumuoto: Intermediate Studies
Laji: Course
Vastuuyksikkö: Department of Biochemistry
Arvostelu: 1 - 5, pass, fail
Opettajat: Tuomo Glumoff
Opintokohteen kielet: Finnish
Leikkaavuudet:

740375A	Metabolism II	4.0 op

Ei opintojaksokuvauksia.

740363A: Microbiology, 6 op

Opiskelumuoto: Intermediate Studies
Laji: Course
Vastuuyksikkö: Department of Biochemistry
Arvostelu: 1 - 5, pass, fail
Opintokohteen kielet: Finnish
Leikkaavuudet:

740374A	Microbiology	3.0 op
740322A	Microbiology	3.0 op
740324A	Laboratory course in microbiology	3.0 op

Ei opintojaksokuvauksia.

740374A: Microbiology, 3 op

Opiskelumuoto: Intermediate Studies
Laji: Course
Vastuuyksikkö: Department of Biochemistry
Arvostelu: 1 - 5, pass, fail
Opintokohteen kielet: Finnish
Leikkaavuudet:

740363A	Microbiology	6.0 op
740322A	Microbiology	3.0 op

Ei opintojaksokuvauksia.

740361A: Molecular Biology I, 8 op

Opiskelumuoto: Intermediate Studies
Laji: Course
Vastuuyksikkö: Department of Biochemistry
Arvostelu: 1 - 5, pass, fail
Opintokohteen kielet: Finnish
Leikkaavuudet:

740373A	Molecular Biology I	4.0 op
740318A	Molecular Biology	4.0 op
740337A	Laboratory Course in Molecular Biology	3.0 op

Ei opintojaksokuvauksia.

740373A: Molecular Biology I, 4 op

Opiskelumuoto: Intermediate Studies
Laji: Course
Vastuuyksikkö: Department of Biochemistry
Arvostelu: 1 - 5, pass, fail
Opintokohteen kielet: Finnish
Leikkaavuudet:

740361A	Molecular Biology I	8.0 op
740318A	Molecular Biology	4.0 op

Ei opintojaksokuvauksia.

740072Y: Orientation, 1 op

Opiskelumuoto: General Studies
Laji: Course
Vastuuyksikkö: Department of Biochemistry
Arvostelu: 1 - 5, pass, fail
Opettajat: Jari Heikkinen
Opintokohteen kielet: Finnish

Leikkaavuudet:

740076Y Orientation 2.0 op

Ei opintojaksokuvauksia.

744617S: Orientation to research work, 0 - 20 op

Opiskelumuoto: Advanced Studies
Laji: Practical training
Vastuuyksikkö: Department of Biochemistry
Arvostelu: 1 - 5, pass, fail
Opettajat: Jari Heikkinen
Opintokohteen kielet: English
Voidaan suorittaa useasti: Kyllä

ECTS Credits:
12 - 18 credits
Contents:
This module provides an introduction to research work via the active integration of students into research groups and/or via one to two week advanced practical courses. The integration into groups can be either full-time or part-time research work, with 1.5op being awarded for each full-time week equivalent worked. A maximum of 6op can be awarded for working in one research group. The research groups do not need to be in the Department of Biochemistry, University of Oulu, but advance permission should be sought if the research group is not part of the University of Oulu.
Person responsible:
Jari Heikkinen

740145P: Physical Biochemistry, 6 op

Opiskelumuoto: Basic Studies
Laji: Course
Vastuuyksikkö: Department of Biochemistry
Arvostelu: 1 - 5, pass, fail
Opettajat: André Juffer
Opintokohteen kielet: English

ECTS Credits:
6 credits
Contents:
This module will cover the concepts of thermodynamics and their application to biochemical systems plus chemical and enzymatic kinetics. Topics covered will include:
Concepts of thermodynam-ics: First, Second and Third Law of Thermodynamics. Heat. Work. Enthalpy. Entropy, Gibbs and Helmholtz free energy, Chemical potential, Chemical potential of a solute, Free energy and equilibrium.
Applications of thermodynamics: Chemical reactions, Protein-ligand association, Acids, bases and pH regulation, Acid-dissociation constants, introduction to thermodynamics of protein folding.
Chemical kinetics: Basic chemical reactions and single step reactions, Applications of chemical kinetics to multistep reactions, Catalysis and enzyme kinetics.
Attendance of some parts of the course is compulsory.
Learning activities and teaching methods:
24 h lect, 8 h lab., plus exercises 1. kl
Recommended or required reading:
Price et al., Principles and problems in physical chemistry for biochemists, Third edition, Oxford University Press, Oxford, 2001
Person responsible:
Anre Juffer

740371A: Physiological Biochemistry, 4 op

Opiskelumuoto: Intermediate Studies
Laji: Course
Vastuuyksikkö: Department of Biochemistry
Arvostelu: 1 - 5, pass, fail
Opettajat: Kalervo Hiltunen
Opintokohteen oppimateriaali:
Murray, R.K., , 2006
Opintokohteen kielet: English
Leikkaavuudet:

742627S Physiological biochemistry 4.0 op

Ei opintojaksokuvauksia.

747691S: Pro gradu experimental work in protein science and biotechnology, 28 op

Opiskelumuoto: Advanced Studies
Laji: Practical training
Vastuuyksikkö: Department of Biochemistry
Arvostelu: 1 - 5, pass, fail
Opettajat: Lloyd Ruddock
Opintokohteen kielet: English

ECTS Credits:
28 credits
Contents:
This module provides an extensive, 6 month, project in a research group. The experimental work can be started after 30 op of Master studies have been completed. Students are responsible for finding a suitable research group in which they wish to undertake the Pro Gradu work. Students should produce a short (typically 2 page) study plan detailing the proposed content of their Pro Gradu work, supervisor(s) and start date which must be approved before they start work. The Pro Gradu thesis is based only on the work done during the first 6 months of work by the student on the project, except in cases of mitigating circumstances. The work may be un-dertaken in the research groups of department of Biochemistry or in any other suitable research group in Finland or abroad.
Person responsible:
Lloyd Ruddock

747692S: Pro gradu thesis in protein science and biotechnology, 20 op

Opiskelumuoto: Advanced Studies
Laji: Diploma thesis
Vastuuyksikkö: Department of Biochemistry
Arvostelu: A,B,N,C,M,EX,L
Opettajat: Tuomo Glumoff
Opintokohteen kielet: English

ECTS Credits:
20 credits
Contents:
The Pro gradu thesis (typically around 50-60 pages long) is based on the experimental work undertaken by the student and the contextualization of the research and the results based on the published literature in the field. For detailed instructions see http:/www.biochem.oulu.fi/.

740364A: Protein Chemistry I, 8 op

Opiskelumuoto: Intermediate Studies
Laji: Course
Vastuuyksikkö: Department of Biochemistry
Arvostelu: 1 - 5, pass, fail
Opettajat: Lloyd Ruddock
Opintokohteen kielet: English

Ei opintojaksokuvauksia.

747601S: Protein production and analysis, 8 op

Opiskelumuoto: Advanced Studies
Laji: Course
Vastuuyksikkö: Department of Biochemistry
Arvostelu: 1 - 5, pass, fail
Opettajat: Lloyd Ruddock
Opintokohteen kielet: English
Leikkaavuudet:

747618S	Protein production and analysis	10.0 op

ECTS Credits:
8 credits
Contents:
This module provides an overview of recombinant protein production and analysis. Topics covered include an overview of DNA technology, PCR, cloning, mutagenesis, protein production, purification, enzyme catalysis, protein structure analysis, basic proteomics and mass spectrometry. This course covers some of the material taught in Protein Chemistry I (740364A) and Molekyylibiologia I (740361A) and therefore cannot be taken by students who have either of these modules.
Learning activities and teaching methods:
30 contact hours of lectures and seminars, 80 hours of lab
Person responsible:
Lloyd Ruddock
Other information:
Timing Autumn yr1 Previous studies A BSc in biochemisty or a closely related subject.

740368A: Radiation and Safety, 5 op

Opiskelumuoto: Intermediate Studies
Laji: Course
Vastuuyksikkö: Department of Biochemistry
Arvostelu: 1 - 5, pass, fail
Opettajat: Jari Heikkinen
Opintokohteen kielet: Finnish
Leikkaavuudet:

740320A	Radiochemistry and Radiation Safety	4.5 op
740339A	Laboratory course in isotope techniques	1.5 op

Ei opintojaksokuvauksia.

744609S: Structural enzymology, 2,5 op

Voimassaolo: - 31.07.2008
Opiskelumuoto: Advanced Studies

Laji: Course

Vastuuyksikkö: Department of Biochemistry

Arvostelu: 1 - 5, pass, fail

Opettajat: Wierenga Rikkert

Opintokohteen kielet: Finnish

ECTS Credits:
2,5 credits
Contents:
General and specific aspects of the reaction mechanism of several well studied enzymes will be discussed. It will include the serine proteases (such as chymotrypsine and trypsine). The following topics will be addressed: Chemical catalysis, forces stabilizing the enzyme-ligand interaction, structural properties of proteins, enzyme kinetics, crystallization of proteins, general aspects of enzyme catalysed reactions, reaction mechanisms of serine proteases. The course is aimed at biochemistry and chemistry students.
Learning activities and teaching methods:
14 h lectures
Recommended or required reading:
Fersht, A.: Structure and mechanism in protein science (2nd edition) 1999
Person responsible:
Rik Wierenga

744619S: Systems biology, 4 op

Opiskelumuoto: Advanced Studies

Laji: Course

Vastuuyksikkö: Department of Biochemistry

Arvostelu: 1 - 5, pass, fail

Opettajat: Tuomo Glumoff

Opintokohteen kielet: English

ECTS Credits:
4 credits
Contents:
The module aims to give a holistic picture of the cell as a system, which can be studied by the systems theory. Cells contain numerous complex structures that interact with each other to form complex interaction networks such that when taken together they form a new whole, which cannot be understood by just investigating the parts. Principles of the systems theory and its applicability to biosciences as well as methods to collect and assemble biological/biochemical information for systems analysis will be introduced. Experimental and bioinformatics approaches to quantify cell contents as well as to understand biochemical phenomena as molecular assemblies forming parts of logical and informational modules will also be discussed.
Learning activities and teaching methods:
The module consists of 30 h of lectures, discussions and exercises. Each student will acquaint themself with a case study and present it to others.
Person responsible:
Tuomo Glumoff

740074Y: Tutoring/confidental posts, 1,5 op

Opiskelumuoto: General Studies

Laji: Course

Vastuuyksikkö: Department of Biochemistry

Arvostelu: 1 - 5, pass, fail

Opettajat: Jari Heikkinen

Opintokohteen kielet: Finnish

Ei opintojaksokuvauksia.