

Opasraportti

FSci - Courses for exchange students, Biology (2020 - 2021)

University's new study guide for academic year 2020-2021 is published at <https://opas.peppi oulu.fi>.

The study guide includes information on degrees, curriculums, courses and course timetables. Course registrations are still done in Oodi.

If you have questions on information in the study guide, please contact the study field's Academic Affairs Service Team <https://www oulu.fi/forstudents/faculty-study-affairs>.

Courses in English for exchange students at the Field of Biology

This Course Catalogue lists courses taught in English that are available for exchange students at the Field of Biology, Faculty of Science, during academic year 2020-21.

When preparing your study plan please use the information provided under the **Courses** tab in this catalogue. Read carefully the information of each course you wish to take (language of instruction, target group, course content, timing, preceding studies, additional information etc.).

For information on the exchange application process please see www oulu.fi/university/studentexchange. All exchange applicants must submit their exchange application through SoleMOVE by the deadline given, proposed study plan is attached to the on-line application.

Accepted exchange students are required to register to all courses. Course registration takes place once you have received your University of Oulu login information, this takes place close to the start of your exchange period. When registering you will be able to find detailed information on teaching and schedule under the **Instruction** tab.

Teaching periods for 2020-21

Autumn term 2020

Period 1: Sept 1 - Oct 25, 2020

Period 2: Oct 26 – Dec 18, 2020

Spring term 2021

Period 3: Jan 5 – March 14, 2021

Period 4: March 15 – May 9, 2021

For arrival and orientation dates see www oulu.fi/university/studentexchange/academic-calender

Any questions on courses at the Field of Biology, Faculty of Science, should be addressed to:

Outi Kivelä
study.science(at) oulu.fi

Further information on application process and services for incoming exchange students:
www oulu.fi/university/studentexchange or international.office(at) oulu.fi

Tutkintorakenteisiin kuulumattomat opintokokonaisuudet ja -jaksot

757619S: Advanced course in bioinformatics, 5 op
 751366A: Animal behaviour, 5 op
 757313A: Basics in population genetics, 5 op
 757314A: Basics of bioinformatics, 5 op
 900013Y: Beginners' Finnish Course 1, 3 op
 900053Y: Beginners' Finnish Course 2, 5 op
 750349A: Examinations on optional topics in biology, 2 - 10 op
 755324A: Functional animal ecology, 5 op
 755335A: Identification of animals, invertebrates, 4 op
 755334A: Identification of animals, vertebrates, 4 op
 756355A: Identification of plant species, brief, 3 op
 756354A: Identification of plant species, extensive, 5 op
 900016Y: Intermediate Finnish Course 2, 5 op
 756650S: Introduction to molecular ecology, 5 op
 756351A: Introduction to population ecology, 5 op
 750629S: Kaamos symposium, 2 - 4 op
 755325A: Methods in ecology I, 5 op
 755329A: Methods in ecology II, 5 op
 757620S: Methods in genomics and genomics evolution, 5 op
 757311A: Molecular methods I, 5 op
 750399A: Optional examinations in environmental protection, 2 - 6 op
 756344A: Plant ecology, 5 op
 756627S: Plant hormones, 5 op
 750613S: Research training, 2 - 15 op
 900027Y: Special Course in Finnish: Writing Skills, 3 op
 900017Y: Survival Finnish, 2 op
 756649S: Symbiosis, 5 op
 750318A: Thursday seminar in biology, 2 op
 755328A: Wildlife management and game animal ecology, 5 op

Opintojaksojen kuvaukset

Tutkintorakenteisiin kuulumattomien opintokokonaisuuksien ja -jaksojen kuvaukset

757619S: Advanced course in bioinformatics, 5 op

Voimassaolo: 01.08.2015 -

Opiskelumuoto: Advanced Studies

Laji: Course

Vastuuyksikkö: Field of Biology

Arvostelu: 1 - 5, pass, fail

Opettajat: Jenni Harmoinen

Opintokohteen kielet: Finnish

Leikkaavuudet:

753629S Advanced course in bioinformatics 4.0 op

ECTS Credits:

5 ECTS credits / 133 hours of work.

Language of instruction:

English.

Timing:

M.Sc. 2nd spring. Odd years.

Learning outcomes:

The main objective of this course is to learn to utilize modern genetic sequencing data. The exact content will depend on the varying teachers expertise and could include for example demographic inference based on DNA sequencing data, analysis of gene expression based on RNA sequencing data or population genetic analyses of reduced representation sequencing data. Students will learn sequencing data quality control, filtering, processing and manipulation as well as utilizing the supercomputing resources and parallelization.

Contents:

During the course, students will manipulate an example data set to provide a comprehensive experience of contemporary bioinformatics. They will gain familiarity with the command terminal and basic LINUX commands. This course builds on Basics of bioinformatics (757314A) and complements the theory learnt in Introduction to population genetics (757313A) and Introduction to molecular ecology (756650S). Lectures provide the core understanding of the main steps and principals behind data analyses, but the core content will be practical experience of handling and analysing large data sets.

Mode of delivery:

Face-to-face teaching, Moodle.

Learning activities and teaching methods:

Contact hours: 12 hrs lectures, 20 hrs computer exercises, 101 hr independent study. Continuous assessment (coursework) and a final exam.

Target group:

Bioscience and Ecology M.Sc.

Prerequisites and co-requisites:

Basics of bioinformatics (757314A) or equivalent knowledge, Introduction to population genetics (757313A), Molecular evolution (757312A).

Recommended optional programme components:

-

Recommended or required reading:

-

Assessment methods and criteria:

Continuous assessment, learning diary and project report.

Grading:

Numerical grading scale 0 – 5, where 0 = fail.

Person responsible:

Dr. Lumi Viljakainen.

Working life cooperation:

No.

Other information:

-

751366A: Animal behaviour, 5 op

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Field of Biology

Arvostelu: 1 - 5, pass, fail

Opintokohteen oppimateriaali:

Krebs, John R. , , 1993

Viitala, Jussi , , 2005

Opintokohteen kielet: Finnish

ECTS Credits:

5 ECTS credits / 133 hours of work.

Language of instruction:

English.

Timing:

B.Sc. 3rd spring or M.Sc. 1st spring ECOz.

Learning outcomes:

Gain an understanding of the principles of animal behaviour in the context of evolutionary ecology. Introduction to relevant international and national studies on animal behavior.

Contents:

The course is planned for third year students. It gives an overview of modern behavioural ecology, with the emphasis on animal sociality and interactions within and between species. The topics include sexual selection, sexuality, parental care, co-operation and learning. In addition, the lectures cover species interaction, such as predation and predation avoidance. Further examples on applied animal behaviour research and ethology are provided. Participation in lectures, group work and seminars is compulsory. Student report / learning diary (in Finnish or English), covering each week's lectures, will be collected online (Optima interface).

Mode of delivery:

Face-to-face teaching.

Learning activities and teaching methods:

36 h lectures, group work, seminars, exam (voluntary).

Target group:

B.Sc. degree optional to ECO, M.Sc. degree compulsory to ECOz.

Prerequisites and co-requisites:

No.

Recommended optional programme components:

-

Recommended or required reading:

Davis, NB, Krebs, JR, & West, SA N.B. (2012) An Introduction to Behavioural Ecology, 4th ed, Wiley-Blackwell.

The availability of the literature can be checked from [this link](#)

Assessment methods and criteria:

(evaluation) Learning diaries and voluntary exam.

Grading:

Numerical grading scale 0 – 5, where 0 = fail.

Person responsible:

FT Olli Loukola.

Working life cooperation:

No.

Other information:

-

757313A: Basics in population genetics, 5 op

Voimassaolo: 01.08.2015 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Field of Biology

Arvostelu: 1 - 5, pass, fail

Opintokohteen kielet: Finnish

Leikkaavuudet:

753314A Basics in population genetics 8.0 op

ECTS Credits:

5 cr / 133 hours of work.

Language of instruction:

English.

Timing:

B.Sc. 2nd spring BSc, M.Sc. 1st spring, ECOGENgen 1st spring, genetics: compulsory in M.Sc. degree.

Learning outcomes:

Student can explain the fundamental population genetics concepts and models and basics in phylogenetics, and is able to apply these in analysis of data.

Contents:

Fundamentals of population genetics (genetic variation, inbreeding, genetic drift, effective population size, mutation, selection, population structure, gene flow), phylogenetic methods and phylogeography.

Mode of delivery:

Face-to-face teaching.

Learning activities and teaching methods:

22 h lectures, 16 h exercises + 4 h seminar, take-home exam, independent studying.

Target group:

B.Sc. 2nd spring BSc, M.Sc. 1st spring, ECOGENgen 1st spring, genetics: compulsory in M.Sc. degree.

Prerequisites and co-requisites:

Concepts of genetics (757109P) and Experimental course in general genetics (757110P) or equivalent knowledge and Molecular evolution (757312A).

Recommended optional programme components:

Compulsory prerequisite for courses Advanced course in bioinformatics (757619S) and DNA analysis in population genetics (757618S). Recommended prerequisite for course Quantitative genetics (805338A).

Recommended or required reading:

Hamilton, M. B. 2009: Population genetics, Wiley-Blackwell.

The availability of the literature can be checked from [this link](#).

Assessment methods and criteria:

Take-home exam, problem solving, laboratory and computer exercise, seminar.

Read more about [assessment criteria](#) at the University of Oulu webpage.

Grading:

Numerical grading scale 0 – 5, where 0 = fail.

Person responsible:

Doc. Lumi Viljakainen.

Working life cooperation:

No.

Other information:

Note that Basics in population genetics and Introduction to Molecular ecology courses are alternative; students cannot get credits from both.

757314A: Basics of bioinformatics, 5 op

Voimassaolo: 01.08.2015 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Field of Biology

Arvostelu: 1 - 5, pass, fail

Opettajat: Lumi Viljakainen

Opintokohteen kielet: Finnish

Leikkaavuudet:

750340A Basics of bioinformatics 3.0 op

ECTS Credits:

5 ECTS credits / 133 hours of work.

Language of instruction:

English.

Timing:

B.Sc. studies, 3rd autumn.

Learning outcomes:

After the course the student can explain and is able to use the basic methods to analyse nucleotide and protein sequences. Student learns how to use various databases, can explain the principles of the analytic methods, is able to take up a critical attitude towards the used methods and gets a good background for applying new methods that are developed continuously.

Contents:

Searching DNA and protein sequences and information connected to the sequences from various databases, genome structure and sequence-based gene prediction and annotation, sequence alignment, introduction to next-generation sequencing techniques.

Mode of delivery:

Face-to-face teaching.

Learning activities and teaching methods:

12 h lectures, 6 h seminar, 20 h exercises, independent work.

Target group:

BT: compulsory, recommended for all biologists. Suitable also for biochemists.

Prerequisites and co-requisites:

Concepts of genetics (757109P) or equivalent knowledge, also Molecular evolution (757312A) is recommended.

Recommended optional programme components:

-

Recommended or required reading:

Pevsner, J. 2015: Bioinformatics and functional genomics, Wiley-Blackwell.

The availability of the literature can be checked from [this link](#).

Assessment methods and criteria:

Take-home exam, exercises, seminar presentation, independent work and student activity.

Read more about [assessment criteria](#) at the University of Oulu webpage.

Grading:

Numerical grading scale 0 – 5, where 0 = fail.

Person responsible:

Doc. Lumi Viljakainen.

Working life cooperation:

No.

Other information:

-

900013Y: Beginners' Finnish Course 1, 3 op

Voimassaolo: 01.08.1995 -

Opiskelumuoto: Language and Communication Studies

Laji: Course

Vastuuyksikkö: Languages and Communication

Arvostelu: 1 - 5, pass, fail

Opintokohteen kielet: Finnish

Leikkaavuudet:

ay900013Y Beginners' Finnish Course 1 (OPEN UNI) 2.0 op

Proficiency level:

A1 (target level A1.2)

Status:

The course is intended for the international students in every faculty of Oulu University.

Required proficiency level:

A1.1, Completion of the Survival Finnish course (900017Y) or the equivalent language skills.

ECTS Credits:

3 ECTS credits

Language of instruction:

As much Finnish as possible; English will be used as a help language.

Timing:

-

Learning outcomes:

By the end of the course the student can understand and use some familiar and common everyday expressions relating to her/himself and everyday situations. S/he can interact in a simple way provided the other person talks slowly and clearly and is willing to help. The student is able to read short simple texts and messages dealing with familiar topics. S/he also deepens her/his understanding of the Finnish language and communication styles.

Contents:

This is lower elementary course which aims to help students to learn communication skills in ordinary everyday situations. During the course, students broaden their vocabulary and knowledge of grammar and principles of pronunciation. They also practise to understand easy Finnish talk about everyday subjects, and reading and writing short and simple texts/messages.

The topics and communicative situations covered in the course are: talking about oneself, one's family, studies and

daily routines, as well as asking about these things from other person; expressing opinions; food, drink and transactions in the grocery; accommodation and describing it; colours and adjectives.

The structures studied are: verb types, basics of the change of the consonants k, p and t in verbs and nouns, basics of the partitive and genitive cases, possessive structure, some declension types for nouns (word types) and the basics of the local cases.

Mode of delivery:

Contact teaching and guided self study

Learning activities and teaching methods:

Lessons 2 times a week (26 h, including the final exam) and guided self study (55 h)

Target group:

International degree and post-graduate degree students, exchange students and the staff members of the University.

Prerequisites and co-requisites:

Completion of the Survival Finnish Course

Recommended optional programme components:

-

Recommended or required reading:

Kuparinen, K. & Tapaninen, T. Oma suomi 1 (chapter 2 - 5)

Assessment methods and criteria:

Regular and active participation in the weekly lessons (twice a week), homework assignments and written exam at the end of the course will be observed in assessment.

Read more about [assessment criteria](#) at the University of Oulu webpage.

Grading:

Grading scale is 1-5.

Person responsible:

Anne Koskela

Working life cooperation:

-

Other information:

Sign-up in WebOodi or Tuudo. The course will start right after the Survival Finnish course.

900053Y: Beginners' Finnish Course 2, 5 op

Voimassaolo: 01.08.1995 -

Opiskelumuoto: Language and Communication Studies

Laji: Course

Vastuuyksikkö: Languages and Communication

Arvostelu: 1 - 5, pass, fail

Opintokohteen kielet: Finnish

Leikkaavuudet:

ay900053Y Beginners' Finnish Course 2 (OPEN UNI) 4.0 op

Proficiency level:

A1.3

Status:

International degree and post-graduate degree students, exchange students and the staff members of the University.

Students of the Oulu University of Applied Sciences (OAMK) students and OAMK's international and exchange students may also participate to this cross-institutional study. The quota principle is as follows: at least two OAMK students in a course and if there are more places, they are filled according to the queuing principle.

See more information for OAMK students <https://www oulu fi/forstudents/crossinstitutionalstudy>.

Required proficiency level:

A1.2, completion of the Beginners' Finnish course 1 (900013Y) or the equivalent language skills.

ECTS Credits:

5 ECTS credits

Language of instruction:

As much Finnish as possible; English will be used as a help language.

Timing:

Learning outcomes:

By the end of the course the student can understand and use some very common everyday expressions and sentences. S/he can communicate in easy and routine tasks requiring a simple and direct exchange of information on familiar everyday matters. The student understands different kinds of short texts. S/he can for example locate important information in them. In addition, s/he has acquired more detailed knowledge of the language and culture.

Contents:

This is a post-elementary course. During the course students learn more about communication in ordinary everyday situations in Finnish. They also extend their vocabulary and knowledge of grammar. Students practise understanding simple Finnish talk and short texts.

The topics and communicative situations covered in the course are: talking about weather, carrying out transactions in clothing stores and at the doctor's, asking about location, asking for help/favours, expressing how you are feeling, writing an invitation and email; talking about past, describing people and things; seasons, the names of the months, travelling, vehicles, body parts, adjectives, food, drink and parties.

The structures studied are: the local cases, more about the change of the consonants k, p and t, more declension types for nouns (word types), nominative plural (basic form plural), basics of the imperfect (past tense of verbs), basics of the object cases, some postposition structures, some sentence types (predicative and necessity sentences).

Mode of delivery:

Contact teaching and guided self study

Learning activities and teaching methods:

Lessons 2 times a week (52 h, including the tests) and guided self study (83 h)

Target group:

International degree and post-graduate degree students, exchange students and the staff members of the University.

Students of the Oulu University of Applied Sciences (OAMK) students and OAMK's international and exchange students may also participate to this cross-institutional study. The quota principle is as follows: at least two OAMK students in a course and if there are more places, they are filled according to the queuing principle.

See more information for OAMK students <https://www oulu fi/forstudents/crossinstitutionalstudy>.

Prerequisites and co-requisites:

Completion of the Beginners' Finnish Course 1 or the equivalent language skills.

Recommended optional programme components:

-

Recommended or required reading:

Kuparinen, K. & Tapaninen, T. Oma suomi 1 (chapters 6 - 10)

Assessment methods and criteria:

Regular and active participation in the weekly lessons (twice a week), homework assignments and tests will be taken into consideration in the assessment.

Read more about [assessment criteria](#) at the University of Oulu webpage.

Grading:

Grading scale is 1-5.

Person responsible:

Arja Haapakoski

Working life cooperation:

-

Other information:

Sign-up in WebOodi or Tuudo. Staff members in staff training portal.

750349A: Examinations on optional topics in biology, 2 - 10 op

Voimassaolo: 01.08.2015 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Field of Biology

Arvostelu: 1 - 5, pass, fail

Opintokohteen kielet: Finnish

Leikkaavuudet:

751354A	Examinations on optional topics	2.0 op
752352A	Examination in optional topics	2.0 op
753351A	Examinations on optional topics	2.0 op

ECTS Credits:

2-10 ECTS credits / 53-267 hours of work.

Language of instruction:

Depends on the book.

Timing:

B.Sc. degree 2.-3. year or M.Sc. degree 1.-2. year.

Learning outcomes:

Student independently concerns him/herself to special issues in biology.

Contents:

Examinations on books, which are not compulsory in any other course unit.

Mode of delivery:

Independent studying: book exam.

Learning activities and teaching methods:

Book exam in Examinarium.

Target group:

-

Prerequisites and co-requisites:

No.

Recommended optional programme components:

-

Recommended or required reading:

Literature chosen in agreement with the responsible teacher.

Assessment methods and criteria:

Book exam in Examinarium.

Read more about [assessment criteria](#) at the University of Oulu webpage.

Grading:

Numerical grading scale 0 – 5, where 0 = fail.

Person responsible:

Prof. Timo Muotka (ECOa), Doc. Anna Liisa Ruotsalainen (ECOb), Doc. Seppo Rytönen (ECOa), Assoc. Prof. Heikki Helanterä (BSg) and Prof. Hely Häggman (BSb).

Working life cooperation:

-

Other information:

-

755324A: Functional animal ecology, 5 op

Voimassaolo: 01.08.2015 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Field of Biology

Arvostelu: 1 - 5, pass, fail

Opettajat: Seppo Rytönen

Opintokohteen kielet: Finnish

Leikkaavuudet:

751378A	Functional animal ecology	6.0 op
---------	---------------------------	--------

ECTS Credits:

5 ECTS credits / 133 hours of work.

Language of instruction:

Lectures in Finnish, exercises in Finnish / English.

Timing:

B.Sc. 2nd spring or M.Sc. 1st spring. NNE.

Learning outcomes:

The aim of the course is to understand the relationship between morphology and function by the means of general ecomorphological model. The student will get both theoretical and practical basics for ecomorphological (and general scientific) research procedures: scientific hypothesizing, sampling, data analysis and reporting and interpreting the results.

Contents:

The course focuses on the relationship between phenotype and function, especially the correlation between animal morphology and behaviour. The course consists of two parts: A) Lectures in Finnish. However, articles about each subject are available for foreign students, including ecomorphological models and correlations, measurement error, allometry, fluctuating asymmetry and phylogenetic analyses. B) Exercises consisting of miniature studies, field and laboratory work, and seminar. The results of the mini studies, in form of PowerPoint presentations, are presented in the seminar. Before the exercises, students write a home essay (or take an exam).

Mode of delivery:

Face-to-face teaching.

Learning activities and teaching methods:

12 h lectures, 40 h exercises, seminar and essay (or exam).

Target group:

Recommended for ecology students.

Prerequisites and co-requisites:

Recommended Evolution, systematics and morphology of animals, practicals (750374A), Introduction to statistics 5 cr (806118P) and A second course in statistics 5 cr (806119P).

Recommended optional programme components:

-

Recommended or required reading:

-

Assessment methods and criteria:

Essay or exam.

Read more about [assessment criteria](#) at the University of Oulu webpage.

Grading:

Numerical grading scale 0 – 5, where 0 = fail.

Person responsible:

Doc. Seppo Rytönen.

Working life cooperation:

No.

Other information:

-

755335A: Identification of animals, invertebrates, 4 op

Voimassaolo: 01.08.2019 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Field of Biology

Arvostelu: 1 - 5, pass, fail

Opettajat: Marko Mutanen

Opintokohteen kielet: Finnish

ECTS Credits:

4 ECTS credits / 106 hours of work.

Language of instruction:

Finnish / English.

Timing:

B.Sc. 1st spring.

Learning outcomes:

The primary goal is to learn identifying higher taxa of invertebrate animals with help of representative specimen samples. The focus is on taxa that occur in northern Europe. Basics of species' ecology and classification of organisms.

Contents:

During the spring semester (16 h lectures in Finnish, 16 h exercises, exam) the invertebrate taxa (mostly superfamily or family level) occurring in northern Europe are studied using specimen samples.

Mode of delivery:

Face-to-face teaching.

Learning activities and teaching methods:

16 h lectures in Finnish, 16 h exercises, self-learning, exam.

Target group:

ECOGEN.

Prerequisites and co-requisites:

No.

Recommended optional programme components:

This course is a requisite for attending the Terrestrial animals field course (755322A) and the Aquatic ecology field course (755321A).

Recommended or required reading:

Check course Moodle pages.

Assessment methods and criteria:

Identification exam.

Read more about assessment criteria at the University of Oulu webpage.

Grading:

Numerical grading scale 0 – 5, where 0 = fail.

Person responsible:

Doc. Marko Mutanen.

Working life cooperation:

No.

Other information:

-

755334A: Identification of animals, vertebrates, 4 op

Voimassaolo: 01.08.2019 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Field of Biology

Arvostelu: 1 - 5, pass, fail

Opettajat: Kari Koivula

Opintokohteen kielet: Finnish

Leikkaavuudet:

755333A Identification of animals 6.0 op

ECTS Credits:

4 ECTS credits / 106 hours of work.

Language of instruction:

Finnish / English.

Timing:

B.Sc. 1st autumn.

Learning outcomes:

Main goal is to learn to identify Finnish animal species (vertebrate) from museum samples.

Contents:

During the autumn semester (9 h lectures in Finnish, 16 h exercises based on museum samples, exam).

Mode of delivery:

Face-to-face teaching.

Learning activities and teaching methods:

14 h lectures in Finnish, 14 h exercises, one exercise group with English lectures, self-learning, exam.

Target group:

ECOGEN.

Prerequisites and co-requisites:

No.

Recommended optional programme components:

This course is needed for attending courses Terrestrial animals field course (755322A) and Aquatic ecology field course (755321A).

Recommended or required reading:

Check course Moodle pages.

Assessment methods and criteria:

Species exam.

Read more about assessment criteria at the University of Oulu webpage.

Grading:

Numerical grading scale 0 – 5, where 0 = fail.

Person responsible:

Doc. Kari Koivula.

Working life cooperation:

No.

Other information:

-

756355A: Identification of plant species, brief, 3 op

Voimassaolo: 01.08.2017 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Field of Biology

Arvostelu: 1 - 5, pass, fail

Opettajat: Anna Ruotsalainen

Opintokohteen kielet: Finnish

Leikkaavuudet:

756342A Identification of plant species 3.0 op

ECTS Credits:

3 ECTS credits / 80 hours of work.

Language of instruction:

Finnish / English.

Timing:

BSc 1st autumn.

Learning outcomes:

Student is able to identify most common boreal plant species in herbarium specimens.

Contents:

Demonstrations and/or independent stud of ca. 350 vascular plants, mosses and lichens in the boreal vegetation zone. In the identification exam student has to know specimens scientific name and family in latin.

Mode of delivery:

Face-to-face teaching.

Learning activities and teaching methods:

16 h demonstrations and learning from the herbarium samples. 350 plant species. In the identification exam student has to know specimens scientific name and family in latin.

Target group:

BSc degree, BS: compulsory 3 cr.

Prerequisites and co-requisites:

No.

Recommended optional programme components:

-

Recommended or required reading:

Booklet Hanhela, P. & Halonen, P. 1995: Plant Identification.

The availability of the literature can be checked from [this link](#).

Assessment methods and criteria:

Two species identification subexams (756355A-01 and 756355A-02) 3 cr with the help of handout.

Read more about [assessment criteria](#) at the University of Oulu webpage.

Grading:

Numerical grading scale 0 – 5, where 0 = fail.

Person responsible:

Doc. Anna Liisa Ruotsalainen.

Working life cooperation:

No.

Other information:

-

756354A: Identification of plant species, extensive, 5 op

Voimassaolo: 01.08.2017 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Field of Biology

Arvostelu: 1 - 5, pass, fail

Opettajat: Anna Ruotsalainen

Opintokohteen kielet: Finnish

ECTS Credits:

5 ECTS credits / 133 hours of work.

Language of instruction:

Finnish / English.

Timing:

BSc 1st autumn.

Learning outcomes:

Student is able to identify most common boreal plant species in herbarium specimens.

Contents:

Demonstrations and/or independent stud of ca. 350 vascular plants, mosses and lichens in the boreal vegetation zone. In the identification exam student has to know specimens scientific name and family in latin.

Mode of delivery:

Face-to-face teaching.

Learning activities and teaching methods:

16 h demonstrations and learning from the herbarium samples. 350 plant species. In the identification exam student has to know specimens scientific name and family in latin.

Target group:

BSc degree: ECO and TEA 5 cr compulsory.

Prerequisites and co-requisites:

No.

Recommended optional programme components:

Course done as 5 cr (756654S) is prerequisite for the Plant ecology field course (756643S) and for the advanced plant species identification courses (752608S and 752625S).

Recommended or required reading:

Booklet Hanhela, P. & Halonen, P. 1995: Plant Identification.

The availability of the literature can be checked from [this link](#).

Assessment methods and criteria:

Two species identification subexams (756354A-01 and 756354A-02). 5 cr without the course handout.

Read more about [assessment criteria](#) at the University of Oulu webpage.

Grading:

Numerical grading scale 0 – 5, where 0 = fail.

Person responsible:

Doc. Anna Liisa Ruotsalainen.

Working life cooperation:

No.

Other information:

-

900016Y: Intermediate Finnish Course 2, 5 op

Voimassaolo: 01.08.1995 -

Opiskelumuoto: Language and Communication Studies

Laji: Course

Vastuuyksikkö: Languages and Communication

Arvostelu: 1 - 5, pass, fail

Opintokohteen kielet: Finnish

Proficiency level:

A2.2

Status:

The course is intended for the international students in every faculty at the University of Oulu. Also students of the Oulu University of Applied Sciences (OAMK) may also participate to this cross-institutional study. See courses, student quota and applying for OAMK students <https://www oulu.fi/forstudents/crossinstitutionalstudy>.

Required proficiency level:

A2.1, Completion of the Intermediate Finnish course 1 (900015Y) or the equivalent language skills.

ECTS Credits:

5 ECTS credits

Language of instruction:

Finnish

Timing:

-

Learning outcomes:

By the end of the course the student can communicate in various informal situations in Finnish. The student understands the main points of messages and talk around her/him. S/he can produce simple connected text on topics which are familiar or of personal interest and describe experiences and also report heard content to others.

Contents:

The course is an upper intermediate course. During the course students learn the necessary written and oral skills to be able to cope in informal situations arising during everyday life, work and study. In the course, students practise understanding more Finnish talk and written texts, and finding information and talking about it to other people. In the classes the main stress is on oral exercises and group work.

The topics and communicative situations covered in the course are: transactions e.g. in clothes shops and on the phone, Finnish small talk, reacting in different situations, information and facts about Finnish celebrations and features of colloquial/spoken language.

The structures studied are: the perfect and pluperfect, revision of all the verb tenses, comparison of adjectives, conditional, more about the plural declension of nouns (particularly the plural partitive case), more about object and predicative cases, the passive imperfect.

Mode of delivery:

Contact teaching and guided self-study

Learning activities and teaching methods:

Lessons (52 h, including the tests) and guided self-study (83 h).

Target group:

International degree and post-graduate degree students, exchange students and the staff members of the University.

Students of the Oulu University of Applied Sciences (OAMK) students and OAMK's international and exchange students may also participate to this cross-institutional study. The quota principle is as follows: at least two OAMK students in a course and if there are more places, they are filled according to the queuing principle.

See more information <https://www oulu.fi/forstudents/crossinstitutionalstudy>.

Prerequisites and co-requisites:

Completion of the Intermediate Finnish Course 1 or equivalent skills

Recommended optional programme components:

-

Recommended or required reading:

Gehring, S. & Heinzmann, S.: **Suomen mestari 2 (chapters 6 - 8)**.

Assessment methods and criteria:

Regular and active participation in the weekly lessons (twice a week), homework assignments and the tests will be taken into consideration in the assessment.

Read more about [assessment criteria](#) at the University of Oulu webpage.

Grading:

Grading scale is 1-5.

Person responsible:

Anne Koskela

Working life cooperation:

-

Other information:

Sign-up in WebOodi or Tuudo.

756650S: Introduction to molecular ecology, 5 op

Voimassaolo: 01.08.2015 -

Opiskelumuoto: Advanced Studies

Laji: Course

Vastuuyksikkö: Field of Biology

Arvostelu: 1 - 5, pass, fail

Opettajat: Lumi Viljakainen, Kvist, Laura Irmeli

Opintokohteen kielet: English

Leikkaavuudet:

750645S Molecular ecology 2.0 op

ECTS Credits:

5 ECTS credits / 133 hours of work.

Language of instruction:

English.

Timing:

B.Sc. 2nd spring or M.Sc. 1st spring, ECOGEN ECO and BS.

Learning outcomes:

This course introduces genetic theories, basics of phylogenetics and usage of molecular biology methods in ecology. The aim is that students know the basic methodology, can apply them into variety of genetic and ecological questions and is familiar with basics of population genetics and phylogenetics in order to be able to analyze and interpret genetic data.

Contents:

Basics of population genetics (variation, effective population size, bottlenecks, population structure, gene flow), relationships between molecular and adaptive variation, phylogenetic methods and phylogeography. Usage of molecular methods for identification of species, sex and individuals, behavioural ecology (mating systems, cooperation, mating success) and conservation.

Mode of delivery:

Face-to-face teaching.

Learning activities and teaching methods:

22 h lectures, 36 h exercises (laboratory and computer exercises), seminar, final exam.

Target group:

M.Sc. degree: 1st spring ECO optional, ECOGEN eco 1st spring compulsory.

Prerequisites and co-requisites:

Concepts of genetics (757109P) and Experimental course in general genetics (757110P) or equivalent knowledge.

Recommended optional programme components:

ECO: Basics in population ecology (756351A) and Advanced population ecology (755637S).

Recommended or required reading:

Beebee, T and Rowe G. 2004 or 2008. An introduction to molecular ecology. Oxford University Press.

The availability of the literature can be checked from [this link](#).

Assessment methods and criteria:

Final exam and seminar.

Read more about [assessment criteria](#) at the University of Oulu webpage.

Grading:

Numerical grading scale 0 – 5, where 0 = fail.

Person responsible:

Doc. Laura Kvist.

Working life cooperation:

No.

Other information:

Note that Introduction to Molecular ecology and Introduction to population genetics courses are alternative; students cannot get credits from both.

756351A: Introduction to population ecology, 5 op

Voimassaolo: 01.08.2015 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Field of Biology

Arvostelu: 1 - 5, pass, fail

Opettajat: Kvist, Laura Irmeli

Opintokohteen kielet: Finnish

Leikkaavuudet:

- 755336A Population ecology 10.0 op
756323A Population biology of plants 5.0 op

ECTS Credits:

5 ECTS credits / 133 hours of work.

Language of instruction:

Finnish / English.

Timing:

B.Sc. 3rd autumn.

Learning outcomes:

Basic skills in methods of population biology.

Contents:

Demography and life history strategies with emphasis on dynamics of structured populations in space and time, with an emphasis on conservation biology. Usage of matrix models to calculate basic population parameters and analyze population viability. Metapopulation dynamics and ecological and evolutionary genetics and interactions between populations and their environment are addressed. In exercises, dynamics of populations are analysed with matrix models and simulation programs.

Mode of delivery:

Face-to-face teaching.

Learning activities and teaching methods:

32 h lectures, 18 h computer exercises, seminar.

Target group:

ECO: compulsory.

Prerequisites and co-requisites:

No.

Recommended optional programme components:

-

Recommended or required reading:

Silvertown & Charlesworth 2001: Introduction to Plant Population Biology (4 th edition), Blackwell Science.
The availability of the literature can be checked from [this link](#).

Assessment methods and criteria:

Exam.

Read more about [assessment criteria](#) at the University of Oulu webpage.

Grading:

1-5 / Fail

Numerical grading scale 0 – 5, where 0 = fail.

Person responsible:

Doc. Laura Kvist

Working life cooperation:

No.

Other information:

-

750629S: Kaamos symposium, 2 - 4 op

Opiskelumuoto: Advanced Studies

Laji: Course

Vastuuyksikkö: Field of Biology

Arvostelu: 1 - 5, pass, fail

Opettajat: Muotka, Timo Tapani

Opintokohteen kielet: English

Voidaan suorittaa useasti: Kyllä

ECTS Credits:

2-4 ECTS credits / 53-107 hours of work.

Language of instruction:

English.

Timing:

M.Sc. and Ph.D. autumn.

Learning outcomes:

Students get acquainted to preparing, presenting and evaluating a scientific oral presentation.

Contents:

The Kaamos Symposium consisting of presenting current research projects is held every year at the end of autumn period. Through presenting their research work and projects and obtaining feedback from the audience (students and the staff of the department) post graduate students gain experience in holding a scientific presentation.

Mode of delivery:

Face-to-face teaching.

Learning activities and teaching methods:

Presentation (talk) and participation to whole symposium = 2 cr (PhD students, 750929J)

Participation to whole symposium and 5 summaries of presentations = 2 cr (master and bachelor students, 750629S or 750629A, summaries are to be sent to the responsible teacher by email)

poster = 0.5 cr (PhD students, 750929J)

Target group:

Undergraduate biology students (2 cr) and postgraduate biology students (2-4 cr).

Prerequisites and co-requisites:

No.

Recommended optional programme components:

-

Recommended or required reading:

Abstract book.

Assessment methods and criteria:

Presentation or reports.

Read more about [assessment criteria](#) at the University of Oulu webpage.

Grading:

Pass / Fail.

Person responsible:

Prof. Timo Muotka and Dr. Laura Kvist

Working life cooperation:

No.

Other information:

-

755325A: Methods in ecology I, 5 op

Voimassaolo: 01.08.2015 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Field of Biology

Arvostelu: 1 - 5, pass, fail

Opettajat: Seppo Rytönen, Kari Koivula

Opintokohteen kielet: Finnish

Leikkaavuudet:

750347A Ecological methods I 6.0 op

ECTS Credits:

5 ECTS credits / 133 hours of work.

Language of instruction:

Finnish / English.

Timing:

B.Sc. 3rd autumn, ECOGEN 1st autumn.

Learning outcomes:

Students are familiar to scientific method and can recognize scientific information from pseudo-scientific and other descriptions and explanations of surrounding world. Students have learned to assess the uncertainty of information and can also evaluate the quality of information with respect to its theoretical and applied value. Students also learn to build a valid theoretical or empirical strategy to solve scientific problems.

Contents:

The aim of the course is to introduce the students in scientific modes of argumentation and research methods in modern ecology. Both the empirical and theoretical methods and their relationship in theory formation are discussed. Hypothesis testing; observational method, experimental method and comparative method are the empirical methods introduced. Autumn period ends in a seminar where scientific publications are analysed.

Mode of delivery:

Face-to-face teaching.

Learning activities and teaching methods:

Lectures, seminar, exercises and exam.

Target group:

Compulsory to ECO.

Prerequisites and co-requisites:

No.

Recommended optional programme components:

-

Recommended or required reading:

See course wiki pages.

Assessment methods and criteria:

Exam.

Read more about [assessment criteria](#) at the University of Oulu webpage.

Grading:

Numeerinen arviointiasteikko 0 – 5, missä 0 = hylätty.

Person responsible:

Doc. Kari Koivula and Doc. Seppo Rytönen.

Working life cooperation:

No.

Other information:

-

755329A: Methods in ecology II, 5 op

Voimassaolo: 01.08.2015 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Field of Biology

Arvostelu: 1 - 5, pass, fail

Opettajat: Seppo Rytönen

Opintokohteen kielet: Finnish

Leikkaavuudet:

750647S Methods in ecology II 7.0 op

ECTS Credits:

5 ECTS credits / 133 hours of work.

Language of instruction:

Lectures Finnish / English, exercises also in English.

Timing:

Finnish B.Sc. 3rd spring, ECOGEN ECO 1st spring.

Learning outcomes:

The aim of the course is to learn in practice how to apply scientific method in ecological research. The student learns how to select appropriate methods for different ecological problems, and a toolkit for study design and data analysis.

Contents:

Continuation to course Ecological methods I 5cr (755325A, 755625S). This course focuses on applying the scientific method in ecological research. The course consists mainly of computer exercises in the following subjects: sampling, sample size determination, experimental design and statistical analysis esp. analysis of variance, comparative methods (independent contrasts - analysis), multivariate methods (cluster analysis, ordination) and meta-analysis. Also other current issues can be included.

Mode of delivery:

Face-to-face teaching.

Learning activities and teaching methods:

Lectures 8 h, 40 h exercises, independent work and exam.

Target group:

ECO: compulsory and ECOGEN ECO compulsory.

Prerequisites and co-requisites:

Course Ecological methods I 5 cr (755325A). Recommended: Introduction to Statistics 5 cr (806118P) and A second course in statistics 5 cr (806119P).

Recommended optional programme components:

-

Recommended or required reading:

Reading package at course Moodle pages.

Assessment methods and criteria:

Exam.

Read more about [assessment criteria](#) at the University of Oulu webpage.

Grading:

Numerical grading scale 0 – 5, where 0 = fail.

Person responsible:

Doc. Seppo Rytönen and Doc. Kari Koivula.

Working life cooperation:

No.

Other information:

-

757620S: Methods in genomics and genomics evolution, 5 op

Voimassaolo: 01.08.2015 -

Opiskelumuoto: Advanced Studies

Laji: Course

Vastuuyksikkö: Field of Biology

Arvostelu: 1 - 5, pass, fail

Opettajat: Heikki Helanterä

Opintokohteen kielet: Finnish

Leikkaavuudet:

753612S Methods in genomics and genomics evolution 6.0 op

ECTS Credits:

5 ECTS credits / 133 hours of work.

Language of instruction:

Finnish / English.

Timing:

M.Sc. 1st autumn.

Learning outcomes:

Student knows focal features of genomes, their evolution and research methods.

Contents:

Genome structure and content, gene expression, comparative genomics, recombination and the evolutionary factors influencing these. Basics of the methods and their applicability to empirical studies especially in evolutionary questions.

Mode of delivery:

Face-to-face teaching.

Learning activities and teaching methods:

20 h lectures, 20 h seminars, independent work 93 h, home exam, seminars and writing assignments.

Target group:

BSg.

Prerequisites and co-requisites:

Concepts of genetics 5 cr (757109P), Experimental course in general genetics 5 cr (757110P) and Basics in population genetics 5 cr (757313A).

Recommended optional programme components:

-

Recommended or required reading:

Recent review and case study articles.

Assessment methods and criteria:

Seminars, writing assignments and student activity are graded, and a home exam.
Read more about [assessment criteria](#) at the University of Oulu webpage.

Grading:

Numerical grading scale 0 – 5, where 0 = fail.

Person responsible:

Assoc. Prof. Heikki Helanterä.

Working life cooperation:

No.

Other information:

-

757311A: Molecular methods I, 5 op

Voimassaolo: 01.08.2015 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Field of Biology

Arvostelu: 1 - 5, pass, fail

Opettajat: Lumi Viljakainen

Opintokohteen kielet: Finnish

Leikkaavuudet:

750364A Molecular methods I 4.0 op

ECTS Credits:

5 ECTS credits / 133 hours of work.

Language of instruction:

Finnish / English.

Timing:

BS: B.Sc. 2nd autumn, ECOGEN 1st autumn.

Learning outcomes:

Student can isolate DNA, estimate the quality and measure the quantity of DNA, amplify DNA fragments using polymerase chain reaction, design PCR primers, clone and sequence DNA. The student is able to evaluate the results and optimize the methods.

Contents:

Isolation of genomic DNA, amplification of DNA by PCR, primer design, DNA sequencing molecular cloning, analysis of DNA-sequence and writing scientific report.

Mode of delivery:

Face-to-face teaching.

Learning activities and teaching methods:

48 h laboratory work including demonstrations, 50 h independent work including homework and writing report.

Target group:

Compulsory to BSc and ECOGEN, suitable for ECO students who are interested in population and evolutionary ecology.

Prerequisites and co-requisites:

Concepts of genetics (757110P) or equivalent knowledge.

Recommended optional programme components:

-

Recommended or required reading:

-

Assessment methods and criteria:

Report.

Read more about [assessment criteria](#) at the University of Oulu webpage.

Grading:

Numerical grading scale 0 – 5, where 0 = fail.

Person responsible:

Doc. Lumi Viljakainen.

Working life cooperation:

No.

Other information:

750399A: Optional examinations in environmental protection, 2 - 6 op

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Field of Biology

Arvostelu: 1 - 5, pass, fail

Opettajat: Anna Ruotsalainen, Seppo Rytönen, Muotka, Timo Tapani

Opintokohteen kielet: Finnish

Voidaan suorittaa useasti: Kyllä

ECTS Credits:

2-6 ECTS credits / 53-160 hours of work. About 100 pages / 1 ECTS credit.

Language of instruction:

Most books are in English.

Timing:

B.Sc. or M.Sc. degree.

Learning outcomes:

To understand environmental protection in global context.

Contents:

Depends on the book.

Mode of delivery:

Face-to-face teaching.

Learning activities and teaching methods:

Three times per both semesters. Exam days are announced in Tuudo.

Target group:

Biology, geography, geology, environmental engineering , exchange students.

Prerequisites and co-requisites:

No.

Recommended optional programme components:

-

Recommended or required reading:

Gaston & Spicer (2004) Biodiversity – an introduction. Blackwell Publishing, 191p; Lockwood et al. (2007) Invasion Ecology, Blackwell Publishing, 304 p; ACIA (2005) Arctic Climate Impact Assessment, Cambridge University Press, 1042 p.; Dincer et al. (2013) Causes, Impacts and Solutions to Global Warming, Springer, 1183 p.

Assessment methods and criteria:

Exam.

Read more about [assessment criteria](#) at the University of Oulu webpage.

Grading:

Numerical grading scale 0 – 5, where 0 = fail.

Person responsible:

Prof. Timo Muotka, Doc. Seppo Rytönen ja Doc. Annu Ruotsalainen.

Working life cooperation:

No.

Other information:

Student has to consult about the selected literature before exam.

756344A: Plant ecology, 5 op

Voimassaolo: 01.08.2015 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Field of Biology

Arvostelu: 1 - 5, pass, fail

Opintokohteen kielet: Finnish

Leikkaavuudet:

752300A Plant ecology 7.0 op

ECTS Credits:

5 cr / 133 hours of work.

Language of instruction:

Lectures Finnish, Exercises Finnish / English.

Timing:

B.Sc. 2nd autumn. ECOGEN 1st autumn.

Learning outcomes:

Student will get basic knowledge how plants adapt to different environmental factors.

Contents:

The main subject of this course is the heterogeneity of environment and the capacity of plants to adapt flexibly to different light and nutrient conditions. For carbon economy the main questions are variation in photosynthetic potential, extrinsic factors which restrict the photosynthesis and the structural and physiological adaptations to different light conditions. Nutrient economy is not only dependent on the soil of the habitat but also on the capacity of plant to change the ions from the surface of soil particles. Symbiosis has a great importance on nutrient economy of boreal plants. The balance between benefits and costs defines whether the symbiosis with the nitrogen fixation bacteria or with mycorrhizal fungi is beneficial for the plant or not. There is competition between plants for soil nutrients and for light. How is it possible that plants competing for the same basic nutrients can live in the same habitat? Isn't the niche theory valid for plants?

Mode of delivery:

Face-to-face teaching.

Learning activities and teaching methods:

(1) Book exam. (2) 22 h demonstrations and exercises in field and laboratory (basic methods in plant ecology and laboratory work) and 4 h final seminars. International students will compensate lectures by reading book Ridge, I. 2002: Plants, Oxford Univ. Press.

Target group:

Compulsory to ECO.

Prerequisites and co-requisites:

Basics of ecology (750124P) and Plant ecology field course (756343A) or equivalent knowledge.

Recommended optional programme components:

-

Recommended or required reading:

Ridge, I. 2002: Plants, Oxford Univ. Press..

The availability of the literature can be checked from [this link](#).

Assessment methods and criteria:

Lecture Book exam (final grade), laboratory diary and seminar presentation (both accepted/rejected).

Read more about [assessment criteria](#) at the University of Oulu webpage.

Grading:

Numerical grading scale 0 – 5, where 0 = fail.

Person responsible:

Doc. Annamari Markkola.

Working life cooperation:

No.

Other information:

-

756627S: Plant hormones, 5 op

Opiskelumuoto: Advanced Studies

Laji: Course

Vastuuyksikkö: Field of Biology

Arvostelu: 1 - 5, pass, fail

Opettajat: Häggman, Hely Margaretha

Opintokohteen oppimateriaali:

Taiz, Lincoln, , 2006

Opintokohteen kielet: Finnish

ECTS Credits:

5 ECTS credits / 133 hours of work.

Language of instruction:

Finnish / English.

Timing:

M.Sc. 1 st or 2 nd spring, (arranged if resources allow).

Learning outcomes:

The students will assess the plant hormone action, understand hormone interactions and the significance of the hormone balance as well as the molecular mechanisms.

Contents:

Plant hormones are signalling molecules with profound effects on growth and development at trace quantities. Until quite recently plant development was considered to be regulated by auxins, gibberellins, cytokinins, ethylene and abscisic acid. New analytical and molecular methods have evidenced new plant hormone receptors and signalling pathways. During the lectures the mode of action of the hormones and the latest literature is used to gain the most recent view of the topic.

Mode of delivery:

Face-to-face teaching.

Learning activities and teaching methods:

20 h and exam.

Target group:

Suitable for BSb and ecophysicologists.

Prerequisites and co-requisites:

Basics of functional plant biology lectures and exercises (752345A, 756341A).

Recommended optional programme components:

-

Recommended or required reading:

Moodle pages. Chapters concerning plant hormones from Taiz, L. et al. 2015. Plant Physiology and Development. 6 e. 761 p. Sinauer Associates, Inc. ISBN- 9781605352558 and literature given in the lectures.

The availability of the literature can be checked from [this link](#).

Assessment methods and criteria:

Exam.

Read more about [assessment criteria](#) at the University of Oulu webpage.

Grading:

Numerical grading scale 0 – 5, where 0 = fail.

Person responsible:

Prof. Hely Häggman and Doc. Anna Maria Pirttilä.

Working life cooperation:

No.

Other information:

-

750613S: Research training, 2 - 15 op

Opiskelumuoto: Advanced Studies

Laji: Practical training

Vastuuyksikkö: Field of Biology

Arvostelu: 1 - 5, pass, fail

Opintokohteen kielet: Finnish

Voidaan suorittaa useasti: Kyllä

ECTS Credits:

1-14 ECTS credits / 27-405 hours of work.

Language of instruction:

Finnish / English.

Timing:

M.Sc. degree.

Learning outcomes:

Student applies the education given knowledge and skills in working life to gain hands-on experience.

Contents:

Work on special projects in the different biology research groups at the department or elsewhere or independent project work including field and/or laboratory work or work at the biological stations. The work is not included to other study modules in biology.

Mode of delivery:

Face-to-face teaching.

Learning activities and teaching methods:

The topic and the study plan have to be agreed on in advance (registration form). The student has to keep diary and prepare a report on the work.

Target group:

-

Prerequisites and co-requisites:

No.

Recommended optional programme components:

-

Recommended or required reading:

-

Assessment methods and criteria:

Report.

Read more about [assessment criteria](#) at the University of Oulu webpage.

Grading:

Pass / Fail.

Person responsible:

Doc. Seppo Rytönen (ECO), Assoc. Prof. Heikki Helanterä and Prof. Hely Häggman (BS).

Working life cooperation:

Yes. Participating to biology project gives working life skills.

Other information:

-

900027Y: Special Course in Finnish: Writing Skills, 3 op

Voimassaolo: 01.08.1995 -

Opiskelumuoto: Language and Communication Studies

Laji: Course

Vastuuyksikkö: Languages and Communication

Arvostelu: 1 - 5, pass, fail

Opintokohteen kielet: Finnish

Proficiency level:

B1/B2, according to the Common European Framework.

Status:

Course is intended for the international students in every faculty at the University of Oulu.

Students of the Oulu University of Applied Sciences (OAMK) students and OAMK's international and exchange students may also participate to this cross-institutional study. The quota principle is as follows: at least two OAMK students in a course and if there are more places, they are filled according to the queuing principle. See more information <https://www oulu fi/forstudents/crossinstitutionalstudy>.

Required proficiency level:

A2.2 Completion of the Finnish for Advanced Students (900020Y) or the equivalent language skills.

ECTS Credits:

3 ECTS credits

Language of instruction:

Finnish

Timing:

-

Learning outcomes:

By the end of the course the student can write coherent and detailed descriptions and summaries about various matters. S/he is able to summarize text and justify his/her own statements of opinions. In addition, the student knows the steps of the writing process and understands the significance of a text's function and target audience. S/he can also differentiate between formal and informal writing styles.

Contents:

During the course students develop their writing skills in Finnish and are guided in the drafting of different text types and documents needed in studies and work. In the course students learn how to write informal and formal letters, an argument-essay, a summary, a job application and a report.

Mode of delivery:

One contact lesson at the beginning of the course and guided independent studying using online

Learning activities and teaching methods:

The course will be held online using a Moodle environment.

Target group:

Course is intended for the international students in every faculty at the University of Oulu.

Students of the Oulu University of Applied Sciences (OAMK) students and OAMK's international and exchange students may also participate to this cross-institutional study. The quota principle is as follows: at least two OAMK students in a course and if there are more places, they are filled according to the queuing principle. See more information <https://www oulu.fi/forstudents/crossinstitutionalstudy>.

Prerequisites and co-requisites:

Completion of the Intermediate Finnish Course 2

Recommended optional programme components:

-

Recommended or required reading:

Web based material in Moodle.

Assessment methods and criteria:

To pass the course, the student must complete all the required writing assignments.

Read more about [assessment criteria](#) at the University of Oulu webpage.

Grading:

Grading is on a pass/fail basis.

Person responsible:

Anne Koskela

Working life cooperation:

-

Other information:

Sign-up in WebOodi or in Tuudo. Staff members in staff training portal.

900017Y: Survival Finnish, 2 op

Voimassaolo: 01.08.1995 -

Opiskelumuoto: Language and Communication Studies

Laji: Course

Vastuuyksikkö: Languages and Communication

Arvostelu: 1 - 5, pass, fail

Opintokohteen kielet: Finnish

Leikkaavuudet:

ay900017Y Survival Finnish Course (OPEN UNI) 2.0 op

Proficiency level:

A1.1

Status:

The course is intended for the international students in every faculty at the University of Oulu.

Required proficiency level:

No previous Finnish studies.

ECTS Credits:

2 ECTS cr

Language of instruction:

Finnish and English.

Timing:

-

Learning outcomes:

By the end of the course the student can understand and use some very common everyday expressions and phrases, and s/he can locate informational content in simple texts and messages. The student also knows the basic characteristics of Finnish language and Finnish communication styles.

Contents:

This is an introductory course which aims to help students to cope with the most common everyday situations in Finnish. During the course, students learn some useful everyday phrases, some general features of the vocabulary and grammar, and the main principles of pronunciation.

The topics and communicative situations covered in the course are: general information about the Finnish language, some politeness phrases (how to greet people, thank and apologize), introducing oneself, giving and

asking for basic personal information, numbers, some time expressions (how to tell and ask the time, days of the week, time of day), food, drink and asking about prices.

The structures studied are: personal pronouns and their possessive forms, forming affirmative, negative and interrogative sentences, the conjugation of some verbs, the basics of the partitive singular and some local cases for answering the 'where'-question.

Mode of delivery:

Contact teaching, on-line learning and independent work. There will be organized also one on-line group in each semester.

Learning activities and teaching methods:

Lessons 2 times a week (26 h, including the final exam) and guided self study (24 h).

Target group:

International degree and post-graduate degree students, exchange students and the staff members of the University.

Prerequisites and co-requisites:

-

Recommended optional programme components:

-

Recommended or required reading:

Will be provided during the course.

Assessment methods and criteria:

Regular and active participation in the weekly lessons (twice a week), homework assignments and written exam at the end of the course will be observed in assessment.

Read more about [assessment criteria](#) at the University of Oulu webpage.

Grading:

Grading scale is on a pass/fail basis.

Person responsible:

Arja Haapakoski

Working life cooperation:

-

Other information:

Sign-up in WebOodi or in Tuudo.

756649S: Symbiosis, 5 op

Voimassaolo: 01.08.2015 -

Opiskelumuoto: Advanced Studies

Laji: Course

Vastuuyksikkö: Field of Biology

Arvostelu: 1 - 5, pass, fail

Opettajat: Anna-Maria Pirttilä

Opintokohteen kielet: Finnish

Leikkaavuudet:

750346A Symbiosis 4.0 op

750646S Symbiosis 4.0 op

ECTS Credits:

5 ECTS credits / 133 hours of work.

Language of instruction:

Finnish / English.

Timing:

B.Sc. degree 3rd spring, M.Sc. 1. or 2nd spring, arranged if resources allow.

Learning outcomes:

The student knows the concept of symbiosis, understands the extent of diversity of symbiotic interactions both at the community and molecular level.

Contents:

Lately new forms of symbiosis have been discovered, extending the diversity of symbiotic interactions. Therefore the significance of symbiosis in biotechnology and for example in human health has increased. Various forms of symbiosis, their importance for the host and interaction at the molecular level are covered.

Mode of delivery:

Face-to-face teaching.

Learning activities and teaching methods:

30 h Lectures / laboratory work / demonstrations, seminar, essay, lecture diary.

Target group:

BS and ecophysiology students.

Prerequisites and co-requisites:

Studies in bioscience.

Recommended optional programme components:

-

Recommended or required reading:

Lecture notes.

Assessment methods and criteria:

Seminar, essay, lecture diary. Moodle: <https://moodle oulu.fi/course/view.php?id=992>

Read more about [assessment criteria](#) at the University of Oulu webpage.

Grading:

Numerical grading scale 0 – 5, where 0 = fail.

Person responsible:

Doc. Anna Maria Pirttilä.

Working life cooperation:

No.

Other information:

-

750318A: Thursday seminar in biology, 2 op

Voimassaolo: 01.08.2011 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Field of Biology

Arvostelu: 1 - 5, pass, fail

Opettajat: Heikki Helanterä

Opintokohteen kielet: English

Voidaan suorittaa useasti: Kyllä

ECTS Credits:

2 ECTS credits / 53 hours of work.

Language of instruction:

English.

Timing:

B.Sc., M.Sc. or Ph.D. degree.

Learning outcomes:

Students get knowledge about the current results and theories in biology.

Contents:

Lectures in English on current topics in biology given by guest lecturers from Finland or abroad.

Mode of delivery:

Face-to-face teaching.

Learning activities and teaching methods:

Guest lectures on Thursdays 12 am-1 pm.

Target group:

Undergraduate and postgraduate students interested in biology.

Prerequisites and co-requisites:

No.

Recommended optional programme components:

-

Recommended or required reading:

-

Assessment methods and criteria:

10 participations and 10 one page long reports. You can combine lectures from different academic terms to make the needed 10 essays.

Read more about [assessment criteria](#) at the University of Oulu webpage.

Grading:

Pass / Fail.

Person responsible:

Assoc. Prof. Heikki Helanterä.

Working life cooperation:

No.

Other information:

-

755328A: Wildlife management and game animal ecology, 5 op

Voimassaolo: 01.08.2015 -

Opiskelumuoto: Intermediate Studies

Laji: Course

Vastuuyksikkö: Field of Biology

Arvostelu: 1 - 5, pass, fail

Opettajat: Jouni Aspi, Kari Koivula

Opintokohteen kielet: Finnish

Leikkaavuudet:

751368A Wildlife management and game animal ecology 6.0 op

ECTS Credits:

5 cr / 133 hours of work.

Language of instruction:

Finnish / English.

Timing:

B.Sc. 3rd autumn or M.Sc. 1st autumn.

Learning outcomes:

After carrying out the study module the student will be able to recognize special ecological traits of the game animals and relate them to the general ecological framework. The student will be also able to appraise the basics of sustainable harvest of game animals and critically judge different wildlife management methods from the scientific point of view.

Contents:

The ecology of game species, their life histories, population dynamics and predator-prey relationships. Hunting ecology: man as predator, management of the game species. The impact of forestry on the game species' populations. Students are also introduced to wildlife management in practice and to the social aspects of wildlife-human relationship.

Mode of delivery:

Face-to-face teaching.

Learning activities and teaching methods:

24 h lectures, one-day excursion to a game breeding area, visiting lecturers from relevant research institutes and game administration, seminar with written reports and exam.

Target group:

-

Prerequisites and co-requisites:

No.

Recommended optional programme components:

-

Recommended or required reading:

-

Assessment methods and criteria:

Seminar with report and exam.

Read more about [assessment criteria](#) at the University of Oulu webpage.**Grading:**

Numerical grading scale 0 – 5, where 0 = fail.

Person responsible:

Prof. Jouni Aspi ja Doc. Kari Koivula.

Working life cooperation:

Yes.

Other information:

-