



HELSINGIN YLIOPISTO
HELSINGFORS UNIVERSITET
UNIVERSITY OF HELSINKI

E-learning Forest Departments Faculty of Agriculture and Forestry

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Outline of the presentation

- n E-learning support structure
- n E-learning at the Faculty of Agriculture and Forestry
- n Case examples



Educational Centre for ICT

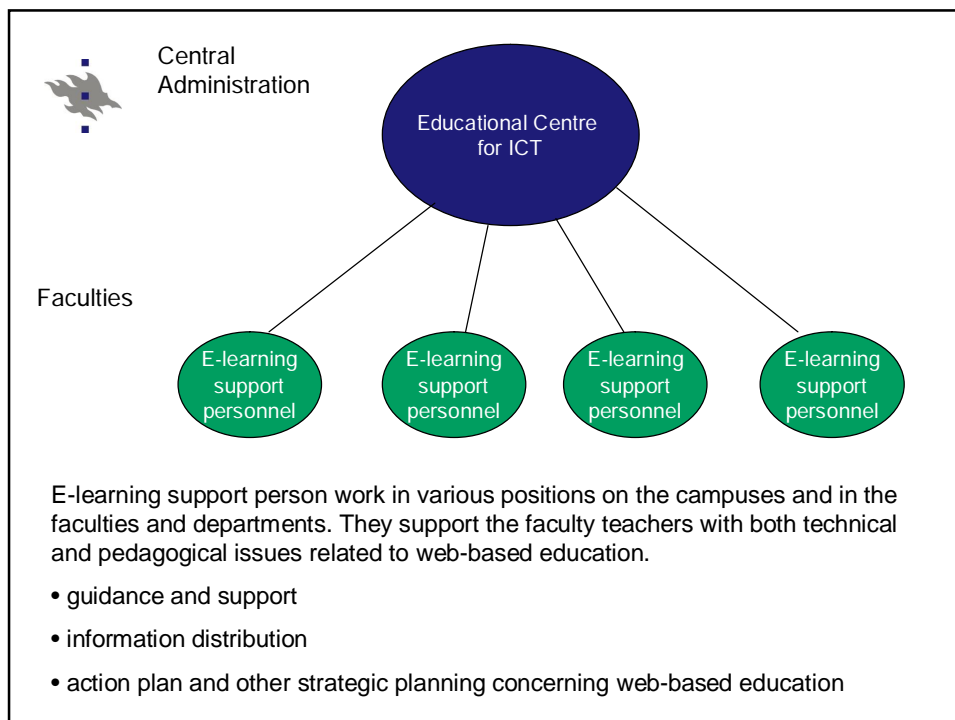
- n The Educational Centre for ICT (Information and Communication Technologies) offers support for the University teaching personnel in the pedagogical use of tools and services for e-learning.
- n Provides services, guidance, information and training
- n Services:
 - n Web-based learning environments: Blackboard and Moodle
 - n Apumatti publishing tool
 - n Electronic form tool
 - n Wiki (Confluence)
 - n Blogs (Word Press Multi User)



Other Web-based services

- n Alma = intranet
- n WebOodi = student and study register
 - n course enrolment
 - n course feedback
 - n personal study plan
- n Adobe Connect Pro = online web-conferencing tool

- n Web-pages



Faculty of Agriculture and Forestry

n Faculty consists of 9 departments, 18 disciplines and has over 3200 students, of which 600 are graduates.

n Departments:

- n Department of Agrotechnology
- n Department of Animal Science
- n Department of Applied Biology
- n Department of Applied Chemistry and Microbiology
- n Department of Economics and Management
- n Department of Food Technology
- n Department of Forest Ecology
 - Viikki Tropical Resources Institute
- n Department of Forest Economics
- n Department of Forest Resource Management



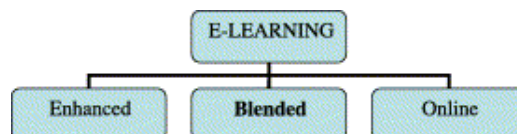
Subjects

- n Department of Forest Ecology (21)
 - n Forest ecology
 - n Biotechnology
- n Department of Forest Economics (25)
 - n Forest economics
 - n Forest products marketing
- n Department of Forest Resource Management (21)
 - n Forest resource science and technology
- n Independent Master's degree programmes
 - n Master's Degree Programme in Forest Sciences and Business
 - n Master's Degree Programme in Forestry and Environmental Engineering



Blended learning

- n At its simplest, blended learning is the thoughtful integration of classroom face-to-face learning experiences with online learning experiences.
- n The real test of blended learning is the effective integration of the two main components (face-to-face and Internet technology) such that we are not just adding on to the existing dominant approach or method.
- n [doi:10.1016/j.iheduc.2004.02.001](https://doi.org/10.1016/j.iheduc.2004.02.001) (Garrison & Kanuka, 2004.)





Students

- Face-to-face contacts with teachers are appreciated
- Value flexibility, alternative options
- ICT-skills
 - ICT Driving Licence is part of all Bachelor's degrees.
 - The ICT Driving Licence (3 ECTS) is a course shared by all the faculties of the University of Helsinki.
 - The goal of the course is to make sure that each new student from all of the 11 faculties will have the necessary ICT (Information and Communication Technology) skills for their studies.
 - Web-based learning environment: [Moodle](#)



F2F

F2F

F2F

F2F

Course enrolment
Study guide

Course materials
Timetables
Communication

Assignments
submissions and
feedback

Evaluation
Course feedback



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Blended GIS studies Model the Work of a Forest Expert

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GIS curriculum comprising different blended learning schemes

n A geographic information system (GIS), captures, stores, analyzes, manages, and presents data that refers to or is linked to location.

n **Basic level courses (every year)**

- n GIS1 – Mapinfo basics *
(distance option)
- n GIS2 – GPS (satellite navigation) *
- n GIS3 – Remote sensing 1
(distance option)
- n GIS4 – ArcGIS course *
(distance option)

n **Advanced level courses**

- n GIS10 – Geostatistics and modelling
- n GIS11 – Applied GIS analysis *
- n GIS12 – Remote sensing 2
(distance option)
- n GIS13 – GIS in logistics and business*
- n GIS14 – Environmental GIS *
- n GIS15 – WebGIS (Mapserver) *
- n MINV12 – Special topics of remote sensing and inventory *

* Taught also in English



The research-based blended learning at DFRM

- n Self-test and individual essay assignment in Blackboard
- n Structured web-discussions
- n Hands-on exercises in computer labs
- n Automatic evaluation and feedback of map exercises
- n Individual and group-based GPS-exercises
- n Computer exams taken simultaneously in classroom, or more flexibly, in ExamAquarium evaluation system
- n Video lectures
- n Virtual learning cafes in an online conference system



Key points forming the philosophy behind the research-based blended learning

1. Stimulating students towards a critical and networked way of problem solving: the researcher's way of working
2. Offering students real-life problems to be solved in a safe, guided and creative atmosphere
3. Blending features of the lecture room, distance learning and mobile learning
4. Meaningful blend of evaluation methods in course structures
5. The blended learning environment serves the ultimate objective of practising and becoming critical experts

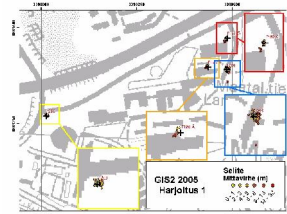
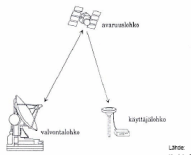


Sample: GIS2 – GPS in agriculture and forestry

- n The basic course involves:
 - n Introduction to Satellite position systems
 - n Use of different GPS-devices & software
 - n GPS-based data acquisition, in theory and in practice.
 - n Applications in the fields of agriculture and forestry.
 - Lectures (web / at the classroom)
 - Personal exercises
 - Guided web discussions
 - Researchlike way of working, sharing of interstudent expertise
 - Electronic feedback system



GPS (Global Positioning System)



Sample: MINV12 Advanced remote sensing; 3D mensuration of the forests

- n Aims to introduce students with the newest methods and applications of remote sensing applicable for forest inventory, on-going research in RS
- n small-scale research project
- n Begins with week-long study period - the students are oriented to a research project via lectures and exercises.
- n Projects dealing with tree-, plot- or compartment-level RS
- n Data collected in projects is used as research material
- n Research reports / presentations, reports are later elaborated into research publications by teachers
- n Web discussion carried out in the open newsgroup environment, tutors are available for consultation via web almost real-time, electronic feedback system



Findings and conclusions Feedback of the Web-based teaching

- n Students' feedback from 2003-2007 of research-based blended learning
- n Students gave thanks for concrete hands-on practising
 - à When "invisible", the blend is ok J
- n Assistant-counselling was needed, both live and online
 - à Blended learning calls for teacher commitment as well
- n Depending student's current life and study situation
 - à Remotely carried out web tasks suits students arriving from other departments or minor degree students having part-time or full-time jobs.
 - à Significance of the local tuition is emphasized by the major subject students



International MSc programs in the field of GIS and forest sciences – University of Helsinki

- n MSc program in geoinformatics (GIMP)
<http://www.helsinki.fi/geography/gimp/>
 - n Targeted in geoinformatics applications in natural resource assessment and management, environmental conservation and geographical analysis.
- n MSc program in Forest Science and Business (MScFB)
<http://www.helsinki.fi/mscfb/>
 - n Covers a wide range of topics relevant to a sustainable forest sector:
 - n Structure and dynamics of natural and managed boreal forests, and wetland ecology, forest ecosystem - atmosphere relations
 - n Management research such as forest mensuration, planning, GIS, wood procurement, logistics, and wood material properties.
 - n Forest economics related to management and forest policy, forest products marketing.
 - n Research related to tropical forestry and developing countries.