



Report

Survey of virtual campus and virtual university activities in Europe SOCRATES Thematic Network Enhancing Engineering Education in Europe - E4, Activity A5 - Innovative Learning and Teaching Methods

Author(s):

Lampinen, Miia; Hagström, Anders

Publication Date:

2002

Permanent Link:

<https://doi.org/10.3929/ethz-a-004523688> →

Rights / License:

[In Copyright - Non-Commercial Use Permitted](#) →

This page was generated automatically upon download from the [ETH Zurich Research Collection](#). For more information please consult the [Terms of use](#).



SOCRATES Thematic Network
**Enhancing Engineering
Education in Europe – E4**
Activity A5 – Innovative Learning and Teaching Methods

Survey of Virtual Campus and Virtual University Activities in Europe

The Thematic Network E4 is supported by the
SOCRATES II Programme of the European Commission.

This report has been prepared with the financial support of the
Swiss Federal Office for Education and Science.

ETH

Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich



Bundesamt für Bildung und Wissenschaft
Office fédéral de l'éducation et de la science
Ufficio federale dell'educazione e della scienza
Uffizi federal da scolaziun e scienza
Swiss Federal Office for Education and Science



SOCRATES Thematic Network Enhancing Engineering Education in Europe – E4

Activity A5 – Innovative Learning and Teaching Methods

Survey of Virtual Campus and Virtual University Activities in Europe

Table of Contents

Foreword.....	3	
E-learning and e-teaching at European universities.....	4	
Survey of virtual campus projects in Europe.....	5	
Analysis of the results of the virtual campus survey	7	
Individual questionnaire responses:		
Austria	Universität Innsbruck (University of Innsbruck)..... 12	
Denmark	Technical University of Denmark – DTU	16
Finland	Espoo-Vantaa Institute of Technology	20
Finland	Helsinki University of Technology	24
Germany	Universität Karlsruhe, Zentrum für Multimedia	28
Greece	Aristotle University of Thessaloniki	30
Greece	Technical University of Crete.....	34
Italy	Politecnico di Milano	38
Netherlands	Delft University of Technology.....	42
Portugal	University of Porto, Faculty of Engineering	46
Spain	Universidad Politécnica de Madrid	50
Spain	Universidad Politécnica de Valencia.....	54
Switzerland	Swiss Federal Institute of Technology Zurich.....	58

Foreword

Within the framework of Activity 5, “Innovative learning and teaching methods”, of the Socrates Thematic Network E4 – Enhancing Engineering Education in Europe, the Swiss Federal Institute of Technology Zurich (ETH Zurich) has carried out a survey of virtual campus and virtual university activities in Europe.

The primary aim of the survey is, on the one hand, to provide a snapshot overview of the developments in Europe in this rapidly evolving field. On the other hand, the survey was designed to deliver insights into the different institutional approaches to virtual campus or virtual university initiatives.

A secondary aim is to form a network of institutions with compatible aims. Cooperation with other institutions can help to create new ideas for applications for working in virtual space. A network of virtual university initiatives with shared interests could add value for all participants.

We would like to thank the Swiss Federal Office for Science and Education and ETH Zurich for supporting the work on this study.

Zurich, March 2002

Miia Lampinen & Anders Hagström

E-learning and e-teaching at European universities

Using the World Wide Web as a tool for learning and teaching at university has grown dramatically during the last decade. There are many virtual campus and virtual university projects going on, mostly focused on e-learning and virtual study. There are, however, also some broader projects, which look beyond e-learning to include the needs of researchers, services and administration.

There are several European Union initiatives related to e-learning, bringing together different education components. With its support for e-learning the European Commission seeks to mobilize the educational and cultural communities, as well as the economic and social players in Europe, in order to speed up changes in the education and training systems for Europe's move to a knowledge-based society. (European Commission 2000)

According to Scott (2001) much more has been promised in the field of virtual learning than has actually been delivered. The Internet may be faster and more far-reaching than the traditional ways of searching for information, but it does not necessarily teach the student what to search for and what to do with the information once it has been found. The virtual working tools need to be supported both technically and from the side of the department or institution, so that users can get the most out of the tools.

In 1999, Kozma presented a theoretical framework of learner activities. According to him, the learner is actively collaborating with the medium to construct knowledge. In this view, learning is seen as an active, constructive process whereby the learner strategically manages the available cognitive resources to create new knowledge. It means that technology-mediated learning should be understood as a partnership with teaching and learning. (Doherty 1998). Sangrà (2001) identifies also other relationships between students, experts and sources of information. In his view, technological networks allow a more tight interaction between these three actors. The idea is to progressively build shared knowledge and to develop abilities.

Barberà, Badia and Mominó (2000) understand interaction not as the possibility of establishing a connection between different elements of a computational or technological system. Rather, interaction is interpreted as a kind of situated socio-cultural activity, or as a relational and discursive activity, which is carried out in a virtual context and that may help, or fail to help, the student in the learning process.

Survey of virtual campus projects in Europe

The Swiss Federal Institute of Technology Zurich (ETH Zurich) has launched a strategic initiative for establishing a third, virtual campus for the university, called ETH World. ETH World will provide services in the areas of research, teaching, learning and services for the established disciplines and activities that the ETH Zurich is renowned for. ETH World is an integral part of ETH Zurich, supporting its core processes and facilitating the change in paradigm required of successful higher education in the knowledge economy. Research collaboration, e-learning, community building and information management are some of the key areas of development within ETH World.

The approach of ETH World is thus a broad conceptual framework for tools, services and facilities for students, faculty and staff. The word “campus” is used to denote the environment for the people who study, carry out research or work at the university. These elements include e learning, research activities, administrative services or other functions, i.e. complementing and supporting life on the physical university campus.

This holistic approach differs from many, if not most, virtual campus / virtual university projects, at least as they are describe to the outside. How these projects are embedded in the broader institutional framework is much less known. It was the wish to find out more about what colleagues across Europe are doing, that gave us the initiative to this inquiry.

The survey methodology

The inquiry was carried out as a questionnaire survey, the results of which are presented in this report.

The survey was limited to the partners of the Thematic Network E4, some 100 institutions and organization in engineering education across Europe. The aim could thus not be to gather statistically valid, quantitative information about European virtual campus and virtual university initiatives. However, due to the broad range of the partner institutions in the E4 network, we believe that the results give a representative picture of the *kind* of initiatives currently under way in Europe.

In a first step of the survey we approached the contact persons from the E4 partner organizations to find out if they have virtual campus, virtual university or e-learning projects in their institution, and, if yes, who the contact person is. This question was sent by email to 150 people. Seven persons immediately responded that their institutions do not have any such activities going on at the moment. A further three institutions responded that they do not have such activities going on at the moment, but that they were considering starting some in the near future.

Twenty-six institutions replied that they did have virtual campus/e-learning activities and provided a contact person. The survey questionnaire was sent to these 26 contact persons, with a sample replies for ETH World as an example. By the end of 2001, 13 answers were returned.

The survey questions

The questionnaire contained a total of eleven questions. The first question asked for background information with the purpose of clarifying the kind of organization the answer was coming.

The other questions were:

- Do you have an overall strategy plan for your virtual campus?
- What are the main emphasis areas in your project?
- Please, describe the e-learning offered at your institution.
- What are the target groups for your e-learning courses?
- What support is there for the development of e-learning?
- Do you offer electronic tools to students to support the planning and management of studies?
- How is basic ICT infrastructure addressed in the project?
- What is the role of library and information management in the project?
- What activities are related to research and the needs of researchers?
- How is community building promoted?

In this summary we analyze the answers grouped into two categories:

The main questions:

- Why universities offer e-learning?
- What are the implementations of the e-learning project?

Subsidiary questions:

- How has E-learning been understood?
- What aspects belong to the virtual campus projects?
- What are the target groups of the virtual campus projects?

Analysis of the results of the virtual campus survey

About the respondents

The respondent universities are of varied size and structure. They can be divided into three different categories:

1. Smaller universities, with less than 10 000 students. To this group also belong the answers that covered only one department of a university.
2. Medium-sized universities with between 10 000 and 15 000 students, and
3. Large universities with more than 30 000 students.

The resources of these three categories are different as are their structures for organizing virtual initiatives for students, faculty and staff.

The most common activity for universities is to offer their students virtual services, above all e-learning courses, but also other online services. Almost all respondents offer their on-campus students different kinds of online services; many also offer services for faculty and other staff members.

An interesting point in the replies was that in the groups of small and medium-sized universities e-based information management and knowledge production were mentioned, whereas in the replies of the big universities this was not the case. Electronic courseware was mentioned in every group but different learning environments, such as Blackboard or WebCT were mentioned by name in the small and medium-sized universities groups.

The questionnaire revealed that the main idea of the different projects is to support teaching, develop it and offer to the students new possibilities to mix traditional ways to study with the new technology and its possibilities.

Why universities offer e-learning

Almost all of the respondents reported that their institution, faculty or department has a strategic plan for their virtual campus project: some with clearly formulated strategies, others with plans consisting of many smaller parts instead of one overall plan.

Services for students and academic staff are the most important areas that universities want to develop. With these tools are then e-learning and e-teaching being developed.

For example the Technical University of Crete has been developing electronic toolkits and thematic portals aiming at the creation of an integrated services on e-learning.

How e-learning is understood

All respondents mentioned as one of the main objectives for virtual campus project the support of learning and teaching *on campus*. Almost all institutions also offer some courses of continuing education online.

The large universities emphasized that they offer supportive technology for virtual activities. In the medium and small size universities support is broader, e.g. support for teaching and learning for on campus students and staff members.

The answers to the question “why” are similar in all three answer groups. One common theme is knowledge management and exchange. Another is the possibility to communicate more easily internally and externally, as well as community building and creating social interaction.

Components of virtual campus / virtual university projects

The possibility to structure teaching and learning in flexible ways is considered the main benefit of online learning materials. A second important reason for the respondents is the possibility to improve teaching quality and learning habits.

Integration is mentioned in two answers: one answer mentions the integration between the different institutions, the other answer the linking together of pieces of information offering single-point access to the teaching and learning activities.

E-learning itself is understood as a tool for new kinds of teaching and learning, supported by different kind of actions. The large universities tend to see e-learning as something for developing quality. Another element mentioned only by the large universities is that virtual campus project can help to bring university and society could to each other.

The importance of relationships with other universities depends on how the virtual university project is organized. For these relationships the respondents from medium-sized university group appreciate the virtual form.

For example, the University of Karlsruhe is partner in a virtual campus project, ViKar (Virtueller Hochschulverbund Karlsruhe, Virtual University Consortium Karlsruhe) with six other universities. The idea is to offer services for all partners of the project. Together this collaboration network tries to develop multimedia material for studies; for example, they offer virtual postgraduate study possibilities in the Karlsruhe region.

The support offered depends on the size of the respondent university or faculty.

For example, the University of Innsbruck has groups for developing material for their e-learning programs.

An interesting observation is that small and medium-sized universities mention communication more often than the large universities. In their answers, for example knowledge management is mentioned, but not communication as such.

For example, the Faculty of Engineering of the University of Porto has several objectives in its project, from providing management information to enhancing internal communication procedures and supporting the educational activities.

Target groups of virtual campus projects

Almost all respondent answered that their main target group is on-campus students. Many universities also offer some continuing education courses online. A few universities focus on different target groups.

For example, the Polytechnic University of Madrid has focused its courses to the needs of Spain and Latin American countries.

The University of Innsbruck provides some services for local schools.

Students of all disciplines were most often mentioned as the main target group for e-learning courses. Staff as a target group was mentioned by in two answers: by the Aristotle University of Thessaloniki and the Technical University of Crete.

Implementations of e-learning projects

Developing teaching and learning is the main objective of all respondents. Evaluation as a part of the virtual campus projects is mentioned only by the large universities.

For example, the Polytechnic University of Valencia carries out on-going evaluation with the aim to support the teaching and research staff and to obtain as a result an improvement of student performance.

Evaluation of a course was mentioned also in medium-sized universities responses.

For example, the Delft University of Technology has an electronic course evaluation system.

The organization and structure of virtual campus projects vary with the size of the institution. According to the survey results the large and some of the medium-sized universities have set up their projects through official structures, e.g. with project groups or committees. The large universities have committees formed for the purpose to organize and supervise e-learning activities. In the smaller universities there tend to be many groups working with developing e-learning, but without a uniting organization. The interest of individual departments or persons is the most significant factor in these projects.

Several of the medium-sized and small universities mention the activation of students and staff. Support for the users belongs to every virtual campus projects. Suitable infrastructure is part of the support, which needs to be taken care of, regardless of the size of the university. The areas emphasized vary and depend on which tools and services are being seen as most important for developing the virtual campus.

Further discussion

The universities that responded to the questionnaire survey see virtual learning opportunities as important and worthy of development. What these can offer is generally valued higher than the efforts it takes to build the system.

Large universities probably have more possibilities and financial support for virtual campus activities. This can also be seen in the answers, in that the large universities offer more technical support than the smaller ones. Support for developing content is mentioned more often in the answers of the small or medium-sized universities.

Government financial support is often mentioned in the answers as an important support aspect. Questions about financial support for projects was not put directly in the survey, so this aspect is not addressed in all answers. On the other hand, some replies only describe how the financial support is organized, not mentioning any other kind of support.

The cooperation between universities is seen as important, for example, for developing the technical systems. There is no one system that is better than the others and every university has their own needs concerning the technical demands. Through cooperation the differences between various systems can be discussed, and perhaps that way the best solution for everyone's own needs can be found.

In the introduction of this analysis, some ideas were presented about where e-learning and virtual campuses are at the moment. A next phase would be to discuss how to add more value to students, faculty and staff members so that they would use and develop these virtual environments further.

As to Scott's claim that much more has been promised in the virtual learning field than has actually been delivered: how could content be generated that is more than just "nice ideas", how to create materials that really are of value to the user?

How are Sangrà's ideas being addressed by today's virtual campus projects? How, in practice, are technical networks being used to support closer interaction between students, experts and sources of information with the idea of progressively building shared knowledge and develop abilities?

Activity 5 of the Thematic Network E4, together with the Board of European Students of Technology, BEST, organized a symposium about studying in e-space and other challenges for learning. The symposium report describes initiatives undertaken in e-learning. The symposium participants found that most of the virtual universities offer services just for their registered students, or a fee needs to be paid to gain access to the materials. They also observed that the Internet is the main platform for e-learning; hardly any other tools beside Internet and e-mail systems are being used. (E4 Activity 5 & BEST 2001, p. 50.)

Synchronous, real-time initiatives have mostly been neglected; asynchronous initiatives dominate. In the symposium reports the students state that e-learning should be seen as a tool for improving face-to-face education, not to substitute it. They remind us that real-time tools are very effective when wanting to avoid cultural misunderstanding, and for improving teambuilding. (E4 Activity 5 & BEST 2001, p. 52.)

Creating and developing virtual campus initiatives is not enough. Both developers and users need to be motivated to do the work and to use the different possibilities. Virtual initiatives can support higher quality in education and research. They can also help to change the universities in the direction of future demands.

References

- Barberà E., Badia, A., and Mominó, J. M. *Teaching and learning at a distance: is it possible?* May, 2001. Available:
<http://www.uoc.es/web/eng/art/uoc/0105018/ensapren.html> (18.10.2001).
- Doherty, P. B., “Learner Control in Asynchronous Learning Environments”. ALN Magazine, 2 (2): October 1998. Available:
http://www.aln.org/alnweb/magazine/vol2_issue2/doherty.htm (12.10.2001).
- European Commission. *e-Learning – Designing tomorrow’s education*. Communication for the Commission, 24.5.2000, COM(2000) 318 final, Brussels. Available: <http://europa.eu.int/comm/education/elearning/comen.pdf> (11.12.2001)
- Sangrà A., *Present and future use of technologies in education*. Available:
<http://www.uoc.es/web/eng/art/uoc/0103002/sangra.html> (15.10.2001).
- Scott, N. G., “Computers in Education”. *IMPmagazine*, June, 2001. Available:
http://www.cisp.org/imp/june_2001/scott/06_01scott.htm (12.10.2001).
- E4 Activity 5 & BEST, “Studying in e-space and other challenges for learning”. Symposium Report, Helsinki University of Technology, Espoo, 27–30.9.2001.



E4 – Enhancing Engineering Education in Europe Activity A5, Innovative Learning and Teaching Methods

Survey of Virtual Campus and Virtual University Projects

Universität Innsbruck (University of Innsbruck)

BACKGROUND INFORMATION

1. Respondent and institution information	
Name of Institution	Universität Innsbruck [University of Innsbruck]
Name and email of contact person	Georg J. Anker georg.j.anker@uibk.ac.at
Position	Head of New Media and Learning Technologies Section, Centre for Informatics Services
Profile of the Institution	<p>The University of Innsbruck's history goes back to the year 1562. Currently the University has 7 faculties and 120 departments and clinics. Faculties: Catholic Theology, Law, Social and Economic Sciences, Medicine, Arts and Letters, Natural Sciences, Engineering and Architecture.</p> <p>Today, with almost 2,500 staff and 30,000 students, it is western Austria's largest institution of higher education and research and serves as the home university for Tyrol, Vorarlberg, South Tyrol and Liechtenstein. The University of Innsbruck has seven faculties and 120 departments and clinics, enjoys an excellent teacher-to-student ratio and successfully melds culture, nature and science, all of which provide students and instructors alike with a friendly environment in which to learn, teach and conduct research.</p> <p>The New Media and Learning Technologies Section of the Center for Informatics Services at the University of Innsbruck is a service provider helping faculty to develop course materials for flexible study programs and supporting students to get access to such programs. It also sets up and maintains services like a learning platform, streaming media and videoconferencing technology.</p> <p>Besides this it is involved in faculty development. It also provides some services for the local school sector.</p>

VIRTUAL CAMPUS ACTIVITIES

2. Do you have an overall strategy plan for your virtual campus?

The *Innsbruck Model for Flexible Study Programs* is the “philosophy” behind all virtual campus activities. It has been approved by the Senate of the university. One of the key actions to be taken is to set up a competence centre that supports faculty to develop highly professional online course materials. The New Media and Learning Technologies Section is the “nucleus” of such a competence centre.

3. What are the main emphasis areas in your project?

Flexible study programs are the framework for technology use. Such programs shall enable students to combine traditional learning with new forms of learning – e.g. by using media and technology for learning at a distance – and also by taking courses at other institutions.

Another key issue besides making study programs more flexible is to improve traditional forms of teaching by supplying supportive technology like learning platforms or communication tools on a campus wide level. Introducing such tools also has positive side effects on faculty development and the quality of teaching.

Finally, flexible study programs seem the adequate form of teaching for the “new clientele” of the university in the context of life long learning.

4. Please, describe the e-learning offered at your institution.

There are many initiatives at department level and initiatives at university level. At university level the *New Media and Learning Technology Section* (NM-Section) is the main service provider. It provides the following services:

- **E-Campus** is a learning platform available for all students and staff. Currently there are about 22.000 registered users, more than 4000 users are enrolled in about 400 courses. The software used is Blackboard, training and support is provided by the NM-Section. <http://e-campus.uibk.ac.at/>
- **Learning material production teams** help faculty to develop online course materials. Such teams consist of educational designers, web and user interface designers, graphics designers, programmers and audio and video specialists. These teams – in cooperation with faculty members who provide content – do the course building and give advice on (new media) didactics. One pilot team has produced several courses during the last six months. Up to five such teams are planned in the near future.
- **Streaming Media for teaching** (live and on demand) is available on a large-scale basis (server side). Also special streaming units (hardware and specialised personnel) are available for broadcasting and archiving live events like lectures.
- **Videoconferencing Infrastructure** (seminar room based and mobile) is available for H.320 (ISDN) and H.323 (IP) videoconferencing. The room based videoconferencing system is connected to interpreter workplaces allowing teleconferencing interpretation services.
- An **image database** will be available beginning with 2002.

5. What are the target groups for your e-learning courses?

Students in all disciplines. Some continuing education courses are also offered online. Besides, the university provides some services for institutions in the local school sector.

6. What support is there for the development of e-learning?

As mentioned above, specialised teams help faculty to develop an e-learning strategy for their courses and support faculty in producing highly professional course materials.

These teams are also involved in faculty development. Another important aspect is to provide the university with the necessary infrastructure like a campus wide learning platform, streaming media and videoconferencing infrastructure, etc.

There is also support for students using this infrastructure – e.g. a help desk.

7. Do you offer electronic tools to students to support the planning and management of studies?

There is an online course catalogue for the whole university. In Social and Economic Sciences exists a tool for electronic course enrolment, which is about being integrated with the online learning platform.

The online learning platform (e-campus) offers tools like calendar, notice board, task planner, digital drop box, communication tools, assessment manager, online gradebook, etc. These tools support both students and faculty in the planning and management of studies. If not restricted by instructors, also enrolling in (e-campus) courses can be done online.

8. How is basic ICT infrastructure addressed in the project?

The New Media and Learning Technologies Section is responsible for both, planning, setting up and maintaining the necessary central infrastructure and also for managing the learning material production teams and to support faculty development in this field. Services like maintaining hardware and system software are provided by the Centre for Informatics Services.

This approach helps to address the ICT infrastructure issue in a highly “customer centred” way.

9. What is the role of library and information management in the project?

The University Library offers university members access to a wide range of electronic information sources and a nation-wide OPAC.

In cooperation with the University Library and Libri Germany an integrated publishing project has been realized. In this project, online publications are made available on paper by using a book on demand service. Beginning with 2002 all students are invited to publish their doctorate thesis that way.

Other important projects in cooperation with the university library address digitising books.

10. What activities are related to research and the needs of researchers?

Research projects in this field are carried out mainly by departments. Examples are the evaluation of learning platforms or projects on EML (Educational Modelling Language).

11. How is community building promoted?

Community building is supported by several tools and initiatives. The **e-campus** learning platform provides students with the necessary tools to form learning communities. **iPoint** reports daily online on events and matters concerning the whole university. It's target group are students, faculty, other staff, alumni, the general public and the media.

Several departments have set up their own servers to allow students and staff to form online communities.

Besides internet or intranet based tools there are several events a year allowing e-campus users and the e-learning community to share their experiences and to discuss improvements of existing e-learning infrastructure.

Another important issue is networking and harmonizing infrastructure and policies with other local educational institutions and nearby universities like the university of Salzburg.

08.11.2001



E4 – Enhancing Engineering Education in Europe Activity A5, Innovative Learning and Teaching Methods

Survey of Virtual Campus and Virtual University Projects

Technical University of Denmark – DTU

BACKGROUND INFORMATION

1. Respondent and institution information	
Name of Institution	Technical University of Denmark – DTU
Name and email of contact person	Frede Morch, fm@dtv.dk
Position	Head of Centre – DTUs Learning Resource Centre
Profile of the Institution	<p>As a modern technological university, DTU, the Technical University of Denmark, operates at a high international level in a wide array of activities in fields such as biotechnology, communications technology, nanotechnology and development of technologies for sustainable energy. The University's research and teaching is provided by 16 institutes, a number of major independent centres established as joint ventures between DTU and companies and research institutes in the region. Like all modern universities, DTU also operates a number of transient and dynamic centres in which the driving force resides in collaboration across different fields of research and organisations.</p> <p>The University embraces most of the engineering disciplines, and trains engineers to Bachelor, Masters and PhD level. In addition, the University offers a comprehensive continuing education programme, with a number of courses taught in English. The University has 6000 students preparing for Bachelor and Masters degrees, 600 PhD students and takes 400 foreign students a year on English-taught courses. DTU also has a permanent 400 of its Danish students away on varying length courses at foreign universities.</p>

VIRTUAL CAMPUS ACTIVITIES

2. Do you have an overall strategy plan for your virtual campus?

DTU established a State-Of-The-Art virtual Campus autumn 2000, called CampusNet.
 DTUs strategy is to further develop this facility, which today serves +10.000 users with individually generated, automatically updated homepages regarding teaching and learning activities for each individual member.
 DTU has explicitly committed itself to the further development of CN in its recent development contract with the Danish Ministry of Education

3. What are the main emphasis areas in your project?

CampusNet (CN) offers a suite of synchronized and personalized services for each member

- Current update of data from the various data pools of DTU, especially data regarding studying and teaching activities.
- For each course CN offers
 - Participants
 - Calendar
 - Timetable
 - Messages
 - Conference
 - Chat
 - File sharing
 - Homepage

All these services are collected from the course-sites of each member, into one service pr. facility – e.g. one synchronised calendar, one timetable etc.

Furthermore CN offers the possibility to enrol to new courses, exams etc.

CN is accessible globally - all it requires is an Internet Access Point and a browser.

4. Please, describe the e-learning offered at your institution.

At DTU E-learning is decentralized to the 16 different institutes.

CampusNet comprises the mutual and unique gateway to the local E-learning activities, and synchronizes communication, enrolment to courses/exams, gateways to teaching material etc.

5. What are the target groups for your e-learning courses?

Regular students, academics seeking life long education components etc.

6. What support is there for the development of e-learning?

CN is supported for all members, with open phone/mail response 10.00-16.00 each day.

DTU allocates means fore further development of CN at the annual budgets.

Two centres – LRC and CDM – offer didactical and technical support for E-learning developers.

LRC: Learning Resource Centre

CDM: Centre for Engineering Educational Development

7. Do you offer electronic tools to students to support the planning and management of studies?

Yes – CN does just that as a core facility.

8. How is basic ICT infrastructure addressed in the project?

In fact the ICT of DTU comprises the backbone of CN! One of the demands to CN is that it must not generate redundant data. Therefore CN only uses data from DTUs basic ICT, such as a number of databases, e.g. project databases, databases containing staff members, teachers and students, an on line course catalogue and several other bases.

CampusNet re-use data from the bases, individualising and combining the flow into a personal homepage.

CN is prepared for other potential institutional users, as it comprises gateways to various types of basic university data pools.

DTU experiments with laptop for new students, and implementation of a Wireless LAN at Campus – all initiatives which enhances the usefulness of CN.

9. What is the role of library and information management in the project?

DTV – the Technical Knowledge Centre of DTU, has developed an advanced and comprehensive full text delivery service – see:

http://www.dtv.dk/help/dads/index_e.htm

In 2002 a Course DADS will be developed for CN, enabling the teacher to combine an individual full text service for each of his/her courses.

10. What activities are related to research and the needs of researchers?

Distance learning didactics and –technologies are research topics in the further development of CN. Furthermore CN is looking into how to improve the different services and modules of the system, e.g. the conference module, the message board, the calendar etc.

11. How is community building promoted?

One of the core qualities of CN is the fact that it knows its members, and requires an individual PW/Login procedure for access.

Hence each member HomePage in CN is individually collected and updated, so that CN becomes the single point access point regarding teaching and learning activities. At the same time, CN provides possibilities to build communities. Every member of the university can create groups and invite members to join the group. In this respect CN can be compared with other group-wise products, as a community building tool.

DTU is planning to build alumina societies based on CN for previous students, which in this way will be able to keep contact, use further education offers etc. from their university.



E4 – Enhancing Engineering Education in Europe Activity A5, Innovative Learning and Teaching Methods

Survey of Virtual Campus and Virtual University Projects

Espoo-Vantaa Institute of Technology (EVTEK)

BACKGROUND INFORMATION

1. Respondent and institution information	
Name of Institution	Espoo-Vantaa Institute of Technology (EVTEK)
Name and email of contact person	Markku Karhu, markku.karhu@evtek.fi
Position	Programme Director, Information Technology, EVTEK
Profile of the Institution	<p>Espoo-Vantaa Institute of Technology (EVTEK) (www.evtek.fi) consists of three different schools: EVTEK Institute of Technology, EVTEK Mercuria Business School and EVTEK Institute of Arts and Design. The total permanent staff of EVTEK is 500 and the total number of students about 5000. EVTEK Institute of Technology was founded in 1985 as a technical college. It was established as one of the first polytechnics in Finland in 1996.</p> <p>The study programmes in EVTEK Institute of Technology are designed in close co-operation with industry. Thus, the students receive both theoretical knowledge and practical experience in their chosen field. In the Institute of Technology there are twelve study programmes: Automation Technology, Biotechnology, Computer Engineering (English), Digital Information Provision (English), Building Services Engineering, Electronics, Land Surveying Technology, Logistics and Information Management, Surface Treatment and Materials Technology, Chemical Engineering, Computer Engineering and Media Technology.</p> <p>The total permanent staff of the EVTEK Institute of Technology is 201 and the total number of students about 3000.</p> <p>Information technology:</p> <p>The main goal of the Information Technology programme is to prepare students for engineering careers in information technology, software, electronics, computer, data and tele communications, and automation industry. The jobs range from systems, hardware and software design to consulting, product support and marketing. The programme provides a solid basis for understanding both hardware and software aspects of computer systems design and use. Data communication and measurement applications based on embedded microcomputer systems and real-time software. To support that aim, general information technology skills, are also provided.</p> <p>The programme provides R&D competence on: Software Engineering focused on Software design, Operating systems, User</p>

	<p>interfaces and Multimedia; Embedded Systems focused on Design methods, Measurement systems, Development tools; Computer Communication focused on Protocols, Local area networks, and Design and implementation.</p> <p>Some of the R&D projects are funded from public sources (Tekes, EU) and more than half of them are carried out on commission initiated by enterprises.</p> <p>http://www.evtek.fi/indexeng.html</p>
--	--

VIRTUAL CAMPUS ACTIVITIES

2. Do you have an overall strategy plan for your virtual campus?

The strategy is more a sum of individual projects and approaches than a proper wide strategy. Individual projects are: 1) learning and training complex (with Espoo City and companies)
Virtual polytechnic in Finland (consortium with 30 Finnish polytechnics)

3. What are the main emphasis areas in your project?

There are three domains where to work: platform, e-based courseware, e-based support and management. There are platform to support e-based learning but they are not yet good enough (WebCT is one but there are still room to improve it)

To develop courseware suitable for e-based learning is a huge task: on normal teaching hour requires 25 –100 hours of work to develop a good e-courseware. So far there is no resources for such an effort. E-learning and support is the easiest task.

4. Please, describe the e-learning offered at your institution.

In the IT department some courses are offered based on e-learning concept:

EVTEK is a member of Cisco Networking Academy which is world-wide consortium. Eight courses on networking are offered here (CCNA and CCNP).

<http://www.cisco.com/warp/public/779/edu/academy/>

Individual basic language courses are offered at Web.

NETPRO project (EU) is about to develop Network-based project learning platform to manage assignments for students. <http://netpro.evitech.fi/>

Network Based Joint Venture Courses on Software Production is new project under Asia IT&C programme (EU) to develop e-learning courseware. <http://www.asia-itc.org>

Virtual polytechnic concept is starting in Finland and EVTEK belongs to one group to develop a Web based course on mobile technologies.

http://www.tpu.fi/virtuaaliamk/index_eng_tiedostot/v3_document.htm

5. What are the target groups for your e-learning courses?

On-campus students in all disciplines. Some continuing courses are offered online.

6. What support is there for the development of e-learning?

Most development projects are funded from a public source (EU or national Tekes) and a part is funded by EVTEK itself.

7. Do you offer electronic tools to students to support the planning and management of studies?

Students enrol to the courses online as well as their credits and grades are visible in the system (Winha). Students can update their personal data in the system. WebCT is used a learning platform but also other platforms are used.

8. How is basic ICT infrastructure addressed in the project?

Basic infrastructure is available but not always suitable: A problem for students is access: inside campus where the LAN is available the access does not cost anything but if they want access remotely, they have to pay pretty expensive costs to operators. This limit the Web-based courses to be usable at distance.

9. What is the role of library and information management in the project?

EVTEK library offers a wide range of electronic information sources.
<http://kirjasto.edu2.evtek.fi/en/>

10. What activities are related to research and the needs of researchers?

Some similar (to virtual campus) development projects are ongoing to develop portals and to network companies (most SMEs). One project develops an extranet and its services for a consortium of companies working in the environment business <http://uverkko.evtek.fi> and another portal application for European SMEs with a title: E-Business Service Accounting Network <http://ebsan.evitech.fi/ebsan/>

11. How is community building promoted?

All such activities increase communication between partners inside and outside the campus but also between companies.



E4 – Enhancing Engineering Education in Europe Activity A5, Innovative Learning and Teaching Methods

Survey of Virtual Campus and Virtual University Projects

Helsinki University of Technology

BACKGROUND INFORMATION

1. Respondent and institution information	
Name of Institution	Helsinki University of Technology
Name and email of contact person	Anna-Kaarina Kairamo, anna-kaarina.kairamo@hut.fi
Position	Project manager, Teaching and Learning Development, HUT
Profile of the Institution	<p>Short history:</p> <p>Helsinki University of Technology (HUT) (www.hut.fi) is the oldest and largest university of technology in Finland, dating back to the nineteenth century. In 1849 the Helsinki Technical School was founded, marking the beginning of organised technical education in Finland. In 1872 the school became Helsinki Polytechnic School and in 1879 Helsinki Polytechnical Institute.</p> <p>In 1908 it was changed to Helsinki University of Technology and thus began the teaching of technology at university level in Finland. In the 1950's and 60's new premises were built to house the University of Technology in Otaniemi and the university moved from Helsinki to the neighbouring city of Espoo.</p> <p>Excerpt from Rector's review (www.hut.fi/General/review.html):</p> <p>“In our teaching, we paid particular attention to developing networked learning. HUT has played a central role in creating a national virtual university, a process that advanced during the past year to a point where we could complete a consortium agreement on virtual universities that applies to all universities in Finland. Officially, the Finnish Virtual University started in January 2001.”</p>

VIRTUAL CAMPUS ACTIVITIES

2. Do you have an overall strategy plan for your virtual campus?

The strategic plan for the HUT electronic campus was first established year 1997 and revised spring 2000. This strategy can be found in Finnish at:
<http://www.hut.fi/Yksikot/Kehittamisyksikko/stra04.html>.

In relation to the strategy a discussion paper on ICT use in teaching at HUT was prepared during spring 2000. This paper can be found (also only in Finnish) at the address:
<http://www.hut.fi/Yksikot/Opintotoimisto/Opetuki/kirjoitukset/tvtopetuskayttoTKK.html>

3. What are the main emphasis areas in your project?

HUT aims to effectively develop and use ICT based methods for knowledge production and management in all its areas of interest but especially in research. All distributed knowledge is converted to electronic format if possible.

Teaching and learning are supported using the campus network and appropriate methods and software. Teachers and students are activated to explore the possibilities of new ICT supported learning environments. Learning will become more effective and economical and less bound to time or place.

HUT invests also in the basic research in Information technology and so-operates with national and international universities and enterprises to support the product development in relevant areas.

4. Please, describe the e-learning offered at your institution.

In the graduate and post-graduate level the e-learning could be defined maybe as the ICT based methods that support the on-campus teaching. So far there are very few distance learning courses for off-campus students. There is a common course-management system which all teachers use. The same system has also a student user interface (see Question 7). In addition to that teachers use ICT tools in very different ways. A brief survey on the different ways of using ICT in teaching was conducted in January 2001 and the results can be found at:
<http://virtuaali.tkk.fi/TVT-kysely/index.html> (in Finnish).

In training for teachers and continuing education the fully web-based courses are more common than in graduate level.

5. What are the target groups for your e-learning courses?

On-campus students (for ICT supported on-campus courses), teachers and professional engineers (for web-based continuing education courses and ICT supported on-campus courses).

6. What support is there for the development of e-learning?

HUT provides training for the teachers and other personnel in adaptation on e-learning. The courses vary from software specific training to a 10 study week credits (equiv. to 15 ECTS credits) long comprehensive course. Some financial support and personal consultation is also available for people with e-learning projects. People with similar projects are also systematically brought together in order to establish inter-departmental networks and discussion forums. Also 2-4 seminars per year are arranged to inform all about the whereabouts of different projects and initiatives.

Teachers can also get support in installing and using computer programmes. No specific learning environment is chosen to be supported and people more often actually operate on “open learning environments” (i.e. combination of web-pages, email, news groups, chat, etc.).

The distributed learning centres around HUT campus highlight the special features and functions of the respective departments and laboratories in terms of organising and managing the learning centres. Issues addressed in the overall development of these centres include the facilities (equipment as well as connectivity and accessibility), possibilities for group work and workshop, and human support also via virtual means. Further research is needed in the area of support: defining the hours required (24/7?) de facto and type of support (equipment/application/content)

7. Do you offer electronic tools to students to support the planning and management of studies?

The students have their own interface to the course management system mentioned in q4. This is the way the students enrol to courses. In the same system they can also order course materials, enrol to exams and practise groups. A timetable is created according to the enrolments and students can also do long term plans by choosing courses for their own list and indicate e.g. semesters in which they are planning to take the chosen courses and decide to which “block” (major, minor) the course is going to go to.

There is also a web-site for students, which has hints and exercises related to study skills. (<http://www.hut.fi/Yksikot/Opintotoimisto/Opetuki/tehopenaali>).

8. How is basic ICT infrastructure addressed in the project?

Very little is systematically done in this matter. A situation is probably partly due to the fact that part of the infrastructure is centralised, but quite a lot of it is decentralised and is also developed and acquired faculty-wise addressing their needs.

9. What is the role of library and information management in the project?

The HUT Library offers the campus a wide range of electronic information resources acquired via consortium as well as own licence agreements. The Library has established an electronic publishing site for HUT dissertations, available at <http://lib.hut.fi/Diss>.

The metadata of other electronic publications by HUT faculty and researches is maintained by the Library via the current research information system of HUT. <http://otatrip.hut.fi/tkk/julkaisee/search.html>.

In order to ensure the student's adequate information literacy skills the Library runs courses "Searching for Scientific Information" – 1.0 study week (equiv. to 1.5 ECTS points) in the curriculum. The courses are designed for distance education purposes and promote the networked information resources. For international students the courses are available in English. <http://lib.hut.fi/Opetus/Informatiikka>.

To enhance the possibilities of geographically and time-wise independent library use the HUT Library launched its mobile services. At the moment the "library in your pocket" project takes advantage of SMS-messages but future plans include more sophisticated methods of communication as the mobile phones using advanced technologies become more common.

10. What activities are related to research and the needs of researchers?

The information needs of the virtual research university are met by the development of the electronic campus library. Close co-operation in this respect is done with the FinELib consortium to develop a researcher's portal to these information resources.



**E4 – Enhancing Engineering Education in Europe
Activity A5, Innovative Learning and Teaching Methods**

Survey of Virtual Campus and Virtual University Projects

Universität Karlsruhe, Zentrum für Multimedia

BACKGROUND INFORMATION

1. Respondent and institution information	
Name of Institution	Universität Karlsruhe, Zentrum für Multimedia
Name and email of contact person	Prof. Dr. Peter Deussen, deussen @ira.uka.de Dr. Hartmut Barthelmess, barthelmess@ira.uka.de
Position	Zentrum für Multimedia (ZeMM)
Profile of the Institution	<p>Main tasks:</p> <p>1. Project “Virtueller Hochschulverbund Karlsruhe (ViKar)” http://vikar.ira.uka.de within the framework of the program Virtuelle Hochschule Baden-Württemberg http://www.virtuelle-hochschule.de</p> <p>Goals – (For details in German see the ViKar web site):</p> <ul style="list-style-type: none"> • Virtual campus of the 6 participating universities in Karlsruhe for additional course offering for the students of these universities • Modularisation of courses • Joint seminars und colloquia over an ATM ring <p>2. Maintenance of the Learning Servers for Computer Science studies http://lernserver.ira.uka.de</p> <p>3. Support within the University of Karlsruhe for the media development plan. Regrouping all multimedia activities of the faculties within the University of Karlsruhe</p>

VIRTUAL CAMPUS ACTIVITIES

2. Do you have an overall strategy plan for your virtual campus?
See above +Transfer of course offerings into the normal activities of the institution.
3. What are the main emphasis areas in your project?
See above.
4. Please, describe the e-learning offered at your institution.
Course material for Computer Science studies at http://lernserver.ira.uka.de Recorded lectures Computer Science I, II, III: http://www.ubka.uni-karlsruhe.de/diva/video/sammlungen/
5. What are the target groups for your e-learning courses?
Students from the 6 universities cooperating within ViKar.
6. What support is there for the development of e-learning?
ViKar: Financial support during 5 years through the government of Baden-Württemberg. Other budgetary means, other projects means.
7. Do you offer electronic tools to students to support the planning and management of studies?
The ViKar Virtual Campus will integrate study guidance.
8. How is basic ICT infrastructure addressed in the project?
The learning server of the Faculty of Computer Science offers courses only on ICT topics ViKar develops materials on ICT; Mathematics; Networked Knowledge: Art – Culture– Technology.
9. What is the role of library and information management in the project?
University and Faculty libraries are integrated in the Virtual Campus.
10. What activities are related to research and the needs of researchers?
–
11. How is community building promoted?
Through support for communication.



E4 – Enhancing Engineering Education in Europe Activity A5, Innovative Learning and Teaching Methods

Survey of Virtual Campus and Virtual University Projects

Aristotle University of Thessaloniki

BACKGROUND INFORMATION

1. Respondent and institution information	
Name of Institution	Aristotle University of Thessaloniki
Name and email of contact person	Aris Avdelas, avdelas@civil.auth.gr
Position	Associate Professor, Institute of Steel Structures, Dept. of Civil Engineering
Profile of the Institution	<p>The Aristotle University (AUPh), established in 1925, consists today of 41 Departments as well as many other units, such as laboratories, study rooms, libraries, clinics, etc., which make it the largest university in the country in terms of the staff (more than 4000), the number of students (more than 70000) and the facilities offered.</p> <p>The School of Engineering of the AUPh (created in 1955) includes the Departments of: Civil Engineering (the first to be established), Architecture, Rural and Survey Engineering, Mechanical Engineering, Electrical and Computer Engineering, Chemical Engineering and the Department of Informatics Mathematics and Physics. Each Department, except for the last one, gives its own Diploma.</p>

VIRTUAL CAMPUS ACTIVITIES

2. Do you have an overall strategy plan for your virtual campus?

The Information Technology Centre Of Aristotle University of Thessaloniki, Greece, established in 1998, offers a variety of computer facilities, to the Academic Community. It runs client-server applications such as Matlab, Arcinfo, Sigmaplot, AutoCAD, Primavera through its campus distributed Andrew File System on HP-UX, Solaris and Windows NT platforms, as well as host-based applications such as Mathematica 4.0 and GCG on Solaris machines (SUN Enterprise 450 and 250). In addition all users have access to High Performance Computing facilities, currently a SGI power challenge XL with 14 R8000 CPUs and 1GB RAM shared, through ssh, ftp and X-11 servers. All these systems are heavily networked in TCP/IP over FDDI, ATM, Fast Ethernet and base Ethernet.

The University Information Technology Centre also provides technical support on computing to all university members via phone, email, or fax on working days from 9:00 to 17:00 and takes care of site licensing matters, central multi-platform backups, maintenance contracts, etc. Throughout the academic year ITC organises short-term seminars on popular software packages or the use of the University's Computer Infrastructure.

3. What are the main emphasis areas in your project?

As a part of the "Operational Project for Education & Initial Professional Training", funded by the Greek Ministry of Education and the Second Community Support Framework, many Departments have obtained financing, in an open national contest, in order to introduce innovative teaching methods and media in Higher Education. Also, in the framework of the same Project, the creation of ITC (see above) and the modernisation of the Central and Departmental Libraries (see below) have been realised.

4. Please, describe the e-learning offered at your institution.

The Telecommunications Centre of Aristotle University of Thessaloniki provides Distance-Learning services to all University members, since 1997. Modern videoconferencing equipment has been bought under the aegis of the Operational Project for Education and Early Business Orientation "Telecommunication Network ISDN, AUTh" with the cooperation of the Telecommunications Committee. The group videoconferencing systems installed can provide full duplex real time audio and video connections with remote sites. Thus, communication and cooperation among Educational Institutes or Organisations becomes easier, while the growing needs for alternative methods of education are also tackled.

AUTh provides a pioneering among Greek Universities Network of six fully equipped Distance-Learning Classrooms, which are located in the following Departments: Dept. of Electrical and Computer Engineering, Dept. of Physics, Dept. of Medicine, Observatory, "Ippokratio" University Hospital, "AHEPA" University Hospital

There is also a smaller group videoconference room in the Telecommunications Centre (Faculty of Law & Economic Sciences). The first two classrooms are equipped with a Vtel's model TC1000 (512 kbps, Quad BRI), while they are fully equipped with special peripherals. The rest of the classrooms are equipped with a PictureTel's model Venue (384 kbps, triple BRI). Apart from point-to-point connections, a Multipoint Conferencing Server (PictureTel's model, Montage) is also available, allowing up to eight simultaneous connections, with line speeds ranging from 56 to 384 kbps.

Different other projects in the Departments

5. What are the target groups for your e-learning courses?

Undergraduate, Graduate and Postgraduate students. Teaching and administration staff

6. What support is there for the development of e-learning?

Many Departments have created electronic libraries of teaching material and data bases with material and links that can be useful to their students

7. Do you offer electronic tools to students to support the planning and management of studies?

Many Departments offer online facilities for the communication of the students with their Secretariats (inscription, course selection etc).

All Departments have a homepage (usually in Greek and English, but often in other languages also-The main AUTH pages are offered in Greek, English, French, German, Italian, Spanish and Russian), where an electronic course curriculum with all the necessary information is offered.

8. How is basic ICT infrastructure addressed in the project?

Many Departments (especially in the School of Engineering) have created fully equipped computer rooms for the use of their students

9. What is the role of library and information management in the project?

As a part of the “Operational Project for Education & Initial Professional Training” funded by the Greek Ministry of Education and the Second Community Support Framework, the Project “**Modernisation of the University Library System**” has been realized. The main aim of the Project, whose second phase will start soon (as a part of the Third Community Support Framework), is the upgrading and the modernisation of the University Library System so that the University Libraries can meet the new advances in the area of Academic Libraries.

KEY OBJECTIVES

- Automation of the University Library System and formation of a university library network.
- Retrospective cataloguing of the printed material in the University Library System.
- Access to a CD-ROM Network.
- Education & Training of the Library System Personnel.
- Design of the Library System WWW Site.
- Reformation of places in the Central Library and the Departmental Libraries.
- Enrichment of Libraries with printed material (journals and books).

- Staffing of Departmental Libraries with librarians.

PERSONNEL

Fifty-eight persons, in the majority librarians, work for the Project.

The libraries of the Departments have also been funded in the framework of the same Project

10. What activities are related to research and the needs of researchers?

The Research Committee (RC) is a collective, elective body of the University, legally charged with the administration and management of the "Special Account", which operates with the aim of transferring and managing research, technological and training programmes as well as other related services which are provided by the members of the Institution. The AUTH has realised, during the 12 years of the existence of the RC, 4,500 programmes, in which over 10,000 University staff and external cooperators have participated.

The RC fully supports through its web site the research realised in the AUTH, offering online all the necessary material (forms, guidelines, etc). It also offers online access (with an access password) to the financial and administrative data of all research projects and the movement of their bank accounts. Announcements of new research projects (national and international), requests for research partners and other useful information is also posted in the site. Some of the services are also offered through mobile internet. The RC publishes also a magazine.

11. How is community building promoted?

Many Departments announce important events that may be of interest to their students and teaching staff in their web sites.



E4 – Enhancing Engineering Education in Europe Activity A5, Innovative Learning and Teaching Methods

Survey of Virtual Campus and Virtual University Projects

Technical University of Crete

BACKGROUND INFORMATION

1. Respondent and institution information	
Name of Institution	Technical University of Crete (TUC)
Name and email of contact person	Nikolaos Matsatsinis, nikos@ergasya.tuc.gr
Position	Assistant Professor, Director of Decision Support Systems Laboratory (ERGASYA) of the Production Engineering & Management Department
Profile of the Institution	<p>The Technical University of Crete was established in the city of Chania in Crete in 1977 and admitted its first students in 1984. Founded with the purpose of developing modern engineering disciplines, newly introduced in Greece, the university develops research in advanced technologies while connecting with industrial and production units of the country.</p> <p>In the T.U.C one can find the following pioneering engineering disciplines. Production Engineering & Management, Mineral Resources Engineering, Electronics & Computer Engineering, Environmental Engineering. Also 3 new departments are to be added in the near future. Architectural Engineering, Biomedical & Biotechnology Engineering, Fine Arts School.</p> <p>Almost 2200 students are studying in both under-graduate and post-graduate level, while the academic staff includes almost 120 professors, 40 technicians and 110 administrative employees</p>

VIRTUAL CAMPUS ACTIVITIES

2. Do you have an overall strategy plan for your virtual campus?

The T.U.C in the framework of EPEAEK (Operational Programs of Education & Professional Orientation) funded by the ministry of Education, has been developing electronic toolkits and thematic portals aiming at the creation of an integrated services platform on E-learning.

3. What are the main emphasis areas in your project?

The development of specialised thematic internet-based portals used for educational and research activities. The main emphasis is given on the creation and development of complete Toolkits, with which curricula and educational material can be processed electronically and then rendered accessible to its intended recipients through the use of a communications medium such as the Internet.

4. Please, describe the e-learning offered at your institution.

In the past, a number of systems have been used for the support of Tele-education, such as WebCT and others. However, as the afford mentioned Toolkits are finalized, they will be put to use in the pilot-operation of an integrated e-learning platform in the next few months. The project will offer courses in both under-graduate and post-graduate level.

5. What are the target groups for your e-learning courses?

The target groups include all under-graduate and post-graduate students as well as all academic staff of the University.

6. What support is there for the development of e-learning?

The T.U.C receives financial support from the Hellenic Ministry of Education in the framework of the afford mentioned EPEAK projects (Operational Programs of Education & Professional Orientation). In addition the University has been developing a number of related material through European Union funded projects, such as A.D.A.P.T.

7. Do you offer electronic tools to students to support the planning and management of studies?

As mentioned before, the integrated platform will include complete Toolkits developed for every kind of User. Toolkits for professors, as well as specialised toolkits for students, with which they will have the opportunity to organise their study material in a customised way, choose courses, take self-evaluating tests and so on.

8. How is basic ICT infrastructure addressed in the project?

The T.U.C is already planning the purchase of a number of powerful servers capable of undertaking the task of supporting the integrated E-learning platform. In addition the university will acquire various communications and video-conferencing material along with advanced scanning devices. The installation will be made in the Distance Learning Centre of the University, where custom-made for the purposes halls will be available.

9. What is the role of library and information management in the project?

The role of the library is fundamental in the effort. It is undergoing a full transformation in order to move on to an electronic existence. It will provide access to electronic journals, while being connected to the resources of all the libraries of Greek Universities. It will include portals, alert programs, and search engines that will connect to electronic material available by publishing houses all over the world.

10. What activities are related to research and the needs of researchers?

With the completion of the undertaken tasks to set up an integrated E-Learning platform, one of the next steps, will be the creation of Electronic Laboratories (E-Labs) which will provide fertile ground for further advancement in research and student training

11. How is community building promoted?

The internet-based communities are promoted through a number of portals available in the T.U.C network with the support of the Information Services Centre of the University. Extended mailing list systems are used to provide information transference effectively and expeditiously



E4 – Enhancing Engineering Education in Europe Activity A5, Innovative Learning and Teaching Methods

Survey of Virtual Campus and Virtual University Projects

Politecnico di Milano, Centre METID

BACKGROUND INFORMATION

1. Respondent and institution information	
Name of Institution	Politecnico di Milano, Centre METID, Metodi E Tecnologie Innovative per la Didattica
Name and email of contact person	Prof. Alberto Colorni alberto.colorni@polimi.it
Position	Professor of "Ricerca operativa" at Politecnico di Milano and Director of METID Centre
Profile of the Institution	<p>The METID Centre was established in 1996 as Politecnico di Milano academic centre.</p> <p>The METID Centre promotes and supports innovative technology instruments for university education and develops collaborative national and international projects in the within of computer science, telematic and multimedia.</p> <p>From 1997 METID has matured important experiences in distance learning field, providing online materials and services in the area of teaching, learning and research, and becoming today the most important centre for e-learning of the Politecnico di Milano with two important projects: the Online degree in Computer Engineering (the first online degree in Italy) and the Online Courses Project, an e-learning environment completely develop by METID for university teachers and students.</p>

VIRTUAL CAMPUS ACTIVITIES

2. Do you have an overall strategy plan for your virtual campus?

Our Virtual Campus is the environment for different projects, everyone with its own strategy plan structured in synchronous and asynchronous activities and teaching and learning resources and services (like the chat, the forum, etc). And just the services are the focus of our strategy: we think that for a good distance learning it's not enough to offer online contents, but it's important to unify the content delivery with services to enforce the collaboration between users (between students and between students, teachers and tutors).

3. What are the main emphasis areas in your project?

The objective of our virtual campus is to create a virtual environment for collaboration and co-operation, supporting the education activities of everyone teaching and studying at Politecnico di Milano. Technology in education has to support different teaching methods corresponding to different didactical organisations with a specific use of new instruments (one can simply put online some materials, another can prepare some videos of his lessons, another can have his lesson directly online). This is what we try to offer in our virtual campus.

4. Please, describe the e-learning offered at your institution.

In the following a few examples of e-learning projects today operating at METID Centre:

Online Degree in Information Engineering (the first Italian online degree, developed with the collaboration of Como Computer Engineering Faculty and Somedia)

Online Courses Project (online courses for support the traditional didactic for all the teachers and students of Politecnico di Milano)

SFERA Projects (online Master in Net Business Administration aimed at post-graduated students)

VIMIMS Projects (European Project for a Virtual Institute for the Modelling of Industrial Manufacturing Systems, this project is developing with four academic partners: the DEP of Politecnico di Milano, the IFA of Hanover, the LAG of Grenoble, The Sztaky of Budapest)

Formambiente (online courses about natural environment for state Italian employees)

5. What are the target groups for your e-learning courses?

University students in engineering.

Post-graduated students in all disciplines.

Continuing education courses for employees in different fields.

6. What support is there for the development of e-learning?

The Italian Education Ministry and the Politecnico di Milano management offer financial, technical and didactic support for develop e-learning projects.

European Community is another important financial supporter for e-learning projects.

In this last years also private companies offer financial and technical support for develop educational projects in information technology.

7. Do you offer electronic tools to students to support the planning and management of studies?

Yes, one of the more important project designing by METID and using our e-learning platform is the Online Courses. With this project we structure virtual environments with additional online contents, synchronous and asynchronous activities, online management services, online test and examinations, for support all our university teachers and students.

The METID Centre, in collaboration with Como Computer Engineering Faculty and Somedia, offer also the first Italian online degree in Computer Engineering.

8. How is basic ICT infrastructure addressed in the project?

The ICT infrastructure addressed in our virtual campus is an e-learning environment developing by our engineers (corsi.metid.polimi.it).

Just for the online degree in Computer Engineering Projects we have a commercial e-learning platform (www.laureaonline.it).

9. What is the role of library and information management in the project?

The METID Centre offers to all university members access to video collections (realised by our technicians) of all academic live events.

The METID Centre does not offer an organised electronic library, except for the didactic materials (lecture notes, images, simulations, videos) published on our platform.

10. What activities are related to research and the needs of researchers?

As university centre, our institute is always related to research and to researchers.

In particular the virtual campus is a project experimenting innovative research tools and innovative didactic approaches, that involves university teachers, researchers and students.

11. How is community building promoted?

The METID web site (www.metid.polimi.it) reports events and matters concerning the Centre and the university life.

The METID virtual campus promotes the community building among academic members (students, teachers, researchers, tutors) with specific services like notice board or forum, reporting daily news on campus events.

The METID staff is arranging a set of evaluative instruments to provide updated feedbacks from all the academic members and the platform users, to make a future effective dissemination of all METID virtual campus activities.



7E4 – Enhancing Engineering Education in Europe Activity A5, Innovative Learning and Teaching Methods

Survey of Virtual Campus and Virtual University Projects

Delft University of Technology

BACKGROUND INFORMATION

1. Respondent and institution information	
Name of Institution	Delft University of Technology
Name and email of contact person	J. B. J. Groot Kormelink j.b.j.grootkormelink@tudelft.nl
Position	Policy Advisor, Staff Executive Board
Profile of the Institution	<p>TU Delft was established in 1842. It is one of the 3 universities of technology in the Netherlands.</p> <p>Total number of academic staff members is about. 2500</p> <p>The total number of enrolled students is 13.000</p> <p>Around 800 persons are studying for a doctoral degree. Education is provided by 7 faculties in 16 degree programmes in all fields of engineering.</p> <p>.</p>

VIRTUAL CAMPUS ACTIVITIES

2. Do you have an overall strategy plan for your virtual campus?

Yes, the central board of the university approved in February 2000 a policy plan for the period 2000 – 2004 with respect to ICT in education

3. What are the main emphasis areas in your project? (policy plan)

- Selection of Blackboard as the central and standard electronic learning environment.
- The development of a student portal (integration of various support systems like course evaluation, electronic inscription for examinations, rosters, blackboard, professional communities). The student portal will be ready in 2003.
- Development of an adequate support structure (technical, educational) for teachers.
- Creation of a University wide ICT in education community platform .
- Implementation of high standard and ambitious ICT in education projects by Faculties

4. Please, describe the e-learning offered at your institution.

The main aim of ICT in education activities at TU Delft is to support teaching and learning of on campus students. TU Delft will not offer virtual (distance) courses for regular courses. However, DUT is also in the process of developing ‘blended’ learning for post-graduate students (life long learning).

There are many initiatives by individual staff members

In addition there are some ‘big’ projects’

- Delft Special: an integrated approach to address information needs by students
- Policy and Management: gaming, simulation, use of Blackboard in all subjects
- Informatics and Electrical Engineering: new forms of on-line (diagnostic) assessments; use of Blackboard in all subjects
- Civil Engineering: development of high quality e-learning courses for different target groups in fields in which the TU Delft is leading
- Faculty of Architecture: interaction of various disciplines (design, production, maintenance) by the use of ICT
- Digital didactics: development of a knowledge management system
- Virtual International Design teams Design (Aerospace engineering, Industrial Design).

5. What are the target groups for your e-learning courses?

On-campus students in all disciplines. Some continuing education courses will be offered partially online.

6. What support is there for the development of e-learning?

TU Delft offers technical and didactic support for faculty wishing to develop e-learning. The system Blackboard is funded by the central board (maintenance, license) . The central board has reserved an amount of around Euro 900.000 per year for the co-financing of projects mentioned under '5'. Under discussions is the development of a ICT in education laboratory Under discussion as well is the founding of ICT in education consortium with other institutes for higher education in order to develop an adequate support structure.

7. Do you offer electronic tools to students to support the planning and management of studies?

In 2001, TU Delft introduced a pilot project for electronic inscription for exams. All faculties use electronic study guides. There is also a electronic course evaluation system. Under discussion is among other things a plan for 'digital portfolio's for students. All support systems will be integrated into a student-portal. (see under '2)

8. How is basic ICT infrastructure addressed in the project?

The basis infrastructure (network) is of a high quality and will be further upgraded next year so that it is in line with the standards developed by our national organisation Surf for the 'next generation internet' Some faculties want to provide laptops for all students. All students living in student houses in Delft have or will have next year access to a Internet connection suitable for steaming video (next generation Internet) All first years students are being offered facilities like a interest free loans and software package.

9. What is the role of library and information management in the project?

The TU Delft Library (BTUD) , being also the national library for engineering, offers university members access to a wide range of electronic information sources and electronic magazines. BTUD is leading new developments in this respect in the Netherlands. All doctoral dissertations will be published electronically as from 2002 onwards.

10. What activities are related to research and the needs of researchers?

The focus is on an adequate network and ICT-tools for researchers taking into consideration the field of research. ICT and nanotechnology are main fields of research at TU Delft.

11. How is community building promoted?

The student portal (i.e the community function within Blackboard) will support community building among students and professional groups. This functionality has, however, only been recently introduced (August 2001)

In various magazines and newsletters , attention is being aid to ICT in education.

An Alumni Portal is under construction

20.11.2001



E4 – Enhancing Engineering Education in Europe Activity A5, Innovative Learning and Teaching Methods

Survey of Virtual Campus and Virtual University Projects

University of Porto, Faculty of Engineering

BACKGROUND INFORMATION

1. Respondent and institution information	
Name of Institution	University of Porto, Faculty of Engineering
Name and email of contact person	Carlos Cardoso Oliveira colive@fe.up.pt
Position	Chief Executive Officer of the GAUTI - Office for User Support on Information Technologies
Profile of the Institution	<p>Issued from the Academia Politécnica, which was founded in 1837, the Faculdade de Engenharia da Universidade do Porto (FEUP) is a leading national institution of international reputation whose achievements in research and teaching have established itself in the forefront of the universities of engineering.</p> <p>The Faculty is committed to the highest standards of education, in furtherance of its mission to advance learning and knowledge, preparing professional engineers at an international level.</p> <p>The total staff of FEUP is about 800 workers in teaching, research and administration. The total number of enrolled students is about 5,700, about 10 percent of whom are studying for post-graduate degrees. Education is provided by 6 departments in 9 undergraduate, 24 Master degree programmes and Doctoral degrees in 8 areas of engineering.</p>

VIRTUAL CAMPUS ACTIVITIES

2. Do you have an overall strategy plan for your virtual campus?

SiFEUP is the strategic project of virtual campus development in FEUP.

This award winning system (EUNIS award 2001 - www.eunis.org) started its development in 1996 and is by now the core system for all campus activities.

Several papers have been published in english about this system.

3. What are the main emphasis areas in your project?

Being a core system of all the activities in the campus, SiFEUP has several objectives, from providing management information to enhancing internal communication procedures and supporting the educational activities.

The system provides information on courses, research, people, equipment and spaces for internal use and also for dissemination and reporting activities.

It's based in the Oracle DBMS, and has a open architecture, that allows the integration with other systems, namely the Library Management System and the E-Learning System in use in the Faculty.

4. Please, describe the e-learning offered at your institution.

The main aim of e-learning at FEUP is to support teaching and learning of on campus students. We are however considering the use of e-learning or distance learning for off-campus students, under the framework of our continuous training office that provides update courses in forefront engineering areas.

There have been experiences with commercial e-learning systems, like WebCT and Luvit, and some continuous training courses have been developed. More than 10% of the 1300 courses offered in the Faculty already provide some online support, so we believe that e-learning will have a significant increase in the next years.

The Office for User Support on Information Technologies is currently developing **myFEUP** which is an web based user interface for teachers and learners that leverages the potencial of cross-linking the data available at SiFEUP for educational purposes.

5. What are the target groups for your e-learning courses?

On-campus students in all disciplines of engineering. Some continuing education courses offered online.

6. What support is there for the development of e-learning?

GAUTI, the Office for User Support on Information Technologies is responsible for providing support to the teachers for multimedia content development and also manages the e-learning system of the Faculty.

The Office has specialized human resources and multimedia equipment and provides its services to selected projects evaluated in a regular basis.

7. Do you offer electronic tools to students to support the planning and management of studies?

SiFEUP provides several tools for planning and management of educational activities. For example, students and teachers have online access to timetables, classroom information and mailing lists of courses. There is also an online reservation system for presentation equipment and workstation time. All the management level information, including grades is also available online.

8. How is basic ICT infrastructure addressed in the project?

SiFEUP development and maintenance is the responsibility of the Computing Services Centre. The Director of the Computing Services is also member of the Management Committee of the Office for User Support on Information Technologies, ensuring a strong coordination of activities.

There are several specific ICT infrastructure development projects: Wireless LAN, Extranet support, Video streaming and Public Information Systems .

9. What is the role of library and information management in the project?

The Director of the Library is a member of the Management Committee of the Office for User Support on Information Technologies.

The Library Management System is being integrated with SiFEUP and e-learning systems, mainly concerning certification, quality control and metadata issues.

The Library is also involved in Electronic Publishing activities.

10. What activities are related to research and the needs of researchers?

The SiFEUP provides several tools to support research: project information, curricula, published papers, all with search facilities integrated with the Library Information System.

11. How is community building promoted?

Community Building is still a largely unexplored area. Still, the system provides dynamic mail tools for group contact and Public Information Systems provide news and awareness to the community.



E4 – Enhancing Engineering Education in Europe Activity A5, Innovative Learning and Teaching Methods

Survey of Virtual Campus and Virtual University Projects

Universidad Politécnica de Madrid

BACKGROUND INFORMATION

1. Respondent and institution information	
Name of Institution	Universidad Politécnica de Madrid
Name and email of contact person	Marinela García Fernández marinela@upm.es
Position	SOCRATES General Co-ordinator and Director for International Affairs
Profile of the Institution	The Universidad Politécnica de Madrid (www.upm.es) is a teaching and research public institution with more than 40,000 students and offering under graduate and graduate education and training to individuals and private enterprises in both modalities: in- campus and distance learning.

VIRTUAL CAMPUS ACTIVITIES**2. Do you have an overall strategy plan for your virtual campus?**

Yes, we are thinking mainly in continuing and distance education developing online-delivery curricula for a variety of training and professional development programs specially designed for Spain and Latin American countries and needs.

3. What are the main emphasis areas in your project?

Continuing Education, especially graduate education and training for the working force from public and private areas. We offer also a wide range of distance learning services to our community such as videoconferencing, distance learning workshops and training materials.

As we mentioned above, we are also implementing a project which will give academic coverage to Latin American countries.

4. Please, describe the e-learning offered at your institution.

We have developed, specifically for Internet, two areas: Technological Seminars and Graduate Courses. Some of the topics dealt with, for instance, Health Science (Telemedicine), Information Technologies, Architecture, Software Design and others related. Please visit our website (www.gate.upm.es) for a complete listing of all of the currently offered courses.

We would like to add that the on-line courses and degrees (training and certification programs) are available in a wide variety of formats including videoconferencing, videostreaming and Internet.

5. What are the target groups for your e-learning courses?

- Under-graduate students
- Graduate students
- Working force from private and public areas

6. What support is there for the development of e-learning?

Universidad Politécnica de Madrid offers, through its "Tele-teaching Department", different kinds of support such as technical and academic advice for those teachers who are approaching this field for the first time. To do our best we can offer all kind of facilities needed in this area, both academic and technological infrastructure.

7. Do you offer electronic tools to students to support the planning and management of studies?

We do offer them using a web based on e-learning environment called “Virtual Training” that has many electronic items such as e-mail, chats, and discussion lists through our University net’s infrastructure.

8. How is basic ICT infrastructure addressed in the project?

As we said in question number 7, it is addressed through this web based on e-learning environment.

9. What is the role of library and information management in the project?

Training materials for all courses can be accessed through this above mentioned web as well as our many web-links, therefore students can easily access all the necessary information they may need to complete successfully the programme.

10. What activities are related to research and the needs of researchers?

Online consulting, experts workshop via videoconferencing, virtual team project development.

11. How is community building promoted?

As a public institution, we have the commitment to become and remain as an open teaching and research institution that is available to the general public in this country. A commitment that represents a significant dedication to changing society through the wide range of educational modalities we are offering nowadays.



E4 – Enhancing Engineering Education in Europe Activity A5, Innovative Learning and Teaching Methods

Survey of Virtual Campus and Virtual University Projects

Universidad Politécnica de Valencia

BACKGROUND INFORMATION

1. Respondent and institution information	
Name of Institution	Universidad Politécnica de Valencia
Name and email of contact person	D. Antonio Hervás Jorge ahervas@mat.upv.es; vupa@upvnet.upv.es
Position	Vicerrector del Vicerrectorado de Universidad Politécnica Abierta (Vice-Chancellor, Open Polytechnic University)
Profile of the Institution	<p>The Polytechnic University of Valencia (UPV) is a dynamic, innovative public institution dedicated to research and teaching that keeps strong bonds with the social environment in which its activities are performed and, simultaneously, has an important presence abroad.</p> <p>Our vocation for service responds to a goal and a compromise with society, providing our youth with the necessary knowledge to be integrated into society as graduates in any professional area they choose. We offer a complete system of education that provides them with technological knowledge, humanistic formation and culture.</p> <p>At the Polytechnic University of Valencia, sharing experiences is part of an educational project aiming to promote the active presence of both students and teachers in our four campus sites: Alcoy, Gandía, Játiva and Valencia. This is the reason why we keep a process of constant improvement to provide them with all the necessary equipment and services for university life.</p> <p>Today, 36500 members integrate our academic community: 34456 of these are students, 2030 are teachers and 1000, belong to the administration and services personnel. The UPV is comprised of: six Schools, three Faculties, four Technical Schools, two Higher Polytechnic Schools (Alcoy and Gandía) and four associated institutions: the Technical School of Industrial Engineering, located at the Ford motor company-Spain, the Faculty of Business Studies, Florida University Centre and MUST: Mediterranean University Centre of Science & Technology.</p> <p>Our University offers university degrees that are modern, flexible and appropriate for the scientific and technical demands of our society, and our teachers in their university departments work with full dedication and are subject to periodical assessments of teaching and research standards.</p> <p>Vice-Chancellor Office for Open University:</p> <p>In the Polytechnic University of Valencia organization chart, the Virtual University is part of the structure of the Office of the Vice-</p>

	<p>Chancellor for the Open Polytechnic University.</p> <p>The Virtual University is a project that tries to introduce New Technologies in its courses, in order to prevent time and distance as learning handicaps for those students wanting to gain the essential knowledge the obtain their University degree, PhD, or postgraduate course.</p>
--	---

VIRTUAL CAMPUS ACTIVITIES

2. Do you have an overall strategy plan for your virtual campus?

The Virtual University of the Polytechnic University of Valencia (UPV) is a project managed by the Vice-Chancellor Office for Open Polytechnic University.

The aim of this project is to develop quality and efficient education using Information and Communication New Technologies (ICT).

3. What are the main emphasis areas in your project?

The Polytechnic University of Valencia. Through its Vice Chancellor Office for Open Polytechnic University is promoting the use of New Technologies in education. Virtual University is aimed at providing the Polytechnic University of Valencia with quality on-line courses complementing its educational offer . The Virtual University covers all those technical subjects which are usually thought in this University in all its educational levels: *undergraduate, postgraduate and PhD courses.*

The Virtual University is also in charge of *developing training and supporting activities for those lecturers interested in creating On-line courses.* With these and other activities such as *quality control and course management by means of the creation of the e-Learning Platform* the process of e-learning is enriched through the Virtual University of UPV.

Links:

- **UPV:** www.upv.es
- **Vice-Chancellor Office for Open Polytechnic University:** www.vupa.upv.es

4. Please, describe the e-learning offered at your institution.

The introduction of New Technologies in the teaching and learning processes facilitates the access to those educational activities of the Polytechnic University of Valencia by preventing time and distance as learning handicaps for University students wanting to gain knowledge on those subjects they need to get their University degree, PhD or postgraduate course.

- *Undergraduate courses:* it enables students to access the necessary knowledge to get their degree.
- *PhD:* It enables to acquire specific knowledge related to obtain PhD degree.
- *Postgraduate courses:* the educational offer of lifelong learning is a response to the needs found to be essential and seen as a priority in the current socio-economic environment, after noticing the interest the professional have on these courses.

Other projects being developed by the Vice-Chancellor Office for Open University related to e-learning and Distance Education are:

- *Electronic books:* Project developed by the Vice-Chancellor Office for Open Polytechnic University along with the Vice-Chancellor Office for Academic and

Students Exchange. The aim of this project is to support the Teaching and Research Staff in the creation of interactive self-learning books oriented to their knowledge area.

- *Ongoing evaluation*: its main objective is to support the Teaching and Research Staff by means of a Platform permitting ongoing evaluation through the Internet obtaining as a result an improvement of the students performance.
- *Biodiversity Project*: Project involving the University community of UPV and the Biodiversity Foundation. This project is supported by the European Social Fund Its aim is to develop activities to train and sensitize on our environment.

According to the learning needs found in companies and professionals we are developing and creating and teaching distance courses over the Internet in order to give a response to the requirements of our socio-economic environment.

5. What are the target groups for your e-learning courses?

The students the UPV e-Learning Courses are directed to are:

- Students in their 1st and 2nd year aimed at obtaining their University degree.
- Students aiming at obtaining their PhD degree

Undergraduate and postgraduate Students and professionals who need to update their knowledge to adapt to the social and work requirements of our society.

6. What support is there for the development of e-learning?

The Polytechnic University of Valencia through its Vice Chancellor Office for Open Polytechnic University offers the Teaching and Research Staff the required technical and pedagogic support to create educational activities through the advantages of using of New Technologies. In order to get this aim we have the support of the *Teleteaching Platform and the methodological and technical and pedagogic supporting resources* to create teleteaching courses and the *demanding controls warranting* courses quality. We also develop training activities for the teaching and supporting staff with the aim of optimising this process and setting the criteria to design, teach and monitor the teaching activities in Distance Education

The Polytechnic University of Valencia offers financing support to this project and provides with the necessary Human Resources and Material through of Vice Chancellor Office for Open Polytechnic University.

7. Do you offer electronic tools to students to support the planning and management of studies?

The Virtual University of the Polytechnic University of Valencia counts with an advanced Teleteaching Platform for projects management permitting to have a control of the teaching processes developed through the Information Communication and New Technologies (ICT).

The students can access the net and make the e-learning activities:

- From the free entering computer labs available in the UPV Campus. Right now, there are 2937 PCs with access to the Internet in these labs.
- From external personal computers connected to the net, like for example the ones they have at home the students.

Apart from this, the The Virtual University of the Polytechnic University of Valencia has some author tools and computer applications which makes the teacher's creating process easier which fulfils the quality standards demanded by the UPV.

8. How is basic ICT infrastructure addressed in the project?

The *Virtual University* is an area belonging to the Vice-Chancellor Office for Open University which provides with:

- Technical and administrative staff necessary to facilitate and coordinate all the activities related to Distance Education being developed.
- Technology and Materials available for the Teaching and Research Staff.

The Departments of the UPV provide with the necessary teaching staff to contents from their knowledge areas.

9. What is the role of library and information management in the project?

In the UPV web page you can access the data base of bibliographical stocks distributed in all UPV libraries. Moreover you can also access bibliographical stocks , data base and catalogues of other libraries.

Project "*Publication of self-learning interactive books* ":

- The Vice-Chancellor Office for Open University along with the Vice-Chancellor Office for Academic and students Exchange. The aim of this project is to support the Teaching and Research Staff in the creation of interactive self-learning books oriented to its knowledge area.

10. What activities are related to research and the needs of researchers?

Through the The Virtual University of the Polytechnic University of Valencia courses we give the possibility to study those essential subjects to obtain the final degree. This degree warrants the researching capacity of the Phd student.

We will pay especial attention to The PhD courses being thought to students living in South America countries.

We will emphasize the fact that in order to create teleteaching courses we have been using some tools obtained from the research projects of the Polytechnic University of Valencia.

11. How is community building promoted?

The Vice-Chancellor Office for Open University shares its area of Virtual University with the University community.

Apart from promoting learning activities, this Vice-Chancellor Office also offers grants for those students wanting to participate in the course creation directed to the processes of learning and teaching through ICT all along with Teachers and Researchers Staff.

The Vice-Chancellor for Open University is open to different projects like the "*Biodiversity projects*" where several teachers , students, and technical staff from different Department and Services participate.

The main objective of *The Virtual University of the Polytechnic University of Valencia* is to bring together University and society, whose relation already exists thanks to ICT by making possible new ways of interaction .



**E4 – Enhancing Engineering Education in Europe
Activity A5, Innovative Learning and Teaching Methods**

Survey of Virtual Campus and Virtual University Projects

Swiss Federal Institute of Technology Zurich

BACKGROUND INFORMATION

1. Respondent and institution information	
Name of Institution	Swiss Federal Institute of Technology Zurich (ETH Zurich)
Name and email of contact person	Anders Hagström hagstroem@ethworld.ethz.ch
Position	Project Manager, ETH World
Profile of the Institution	<p>The Swiss Federal Institute of Technology Zurich (ETHZ) was established in 1854 as a polytechnic school. Until 1969 it was the only national (federal) university in Switzerland. Today it is part of the ETH domain, which is made up of the two technical universities in Zurich and Lausanne (EPFL) and four national research institutes.</p> <p>ETH Zurich has a total staff of over 7 500 working in teaching, research and administration. The total number of enrolled students is around 12 000, about 20 percent of whom are studying for a doctoral degree. Education is provided by the 17 departments in 25 degree programmes in the following main domains: engineering, natural sciences and mathematics, life sciences, and the built environment.</p> <p>ETH World</p> <p>ETH World is a strategic initiative of ETH Zurich for establishing a third, virtual campus for the university. ETH World will provide services in the areas of research, teaching, learning and services for the established disciplines and activities that the ETH Zurich is renowned for. ETH World is an integral part of ETH Zurich, supporting its core processes and facilitating the change in paradigm required of successful higher education in the knowledge economy. Research collaboration, e-learning, community building and information management are some of the key areas of development within ETH World.</p>

VIRTUAL CAMPUS ACTIVITIES

2. Do you have an overall strategy plan for your virtual campus?

ETH World is the strategic project to develop a virtual campus for ETH Zurich. Some of the developments take place within this overall project, others run in parallel with the ETH World Management Committee in a coordinating role. No written strategy for developing the Virtual Campus exists.

3. What are the main emphasis areas in your project?

ETH World is a strategic initiative to prepare ETH Zurich for the information age. Its objective is to create a universal virtual communication and cooperation platform, supporting the activities of everyone working or studying at ETH. ETH World will help to integrate the physical infrastructure and communication to form an “infostructure”. In this environment research groups and teaching and learning communities can cooperate without limitation of time or place.

ETH World also supports new processes for the management and services of the university. ETH World is being built through a growing number of individual projects, developing e-learning, research tools, information management, infrastructure elements and community building.

4. Please, describe the e-learning offered at your institution.

The main aim of e-learning at ETH Zurich is to support teaching and learning of on campus students. ETH does thus not offer integrated programs of e-learning or distance learning for off-campus students.

There are currently some 50 projects under way to develop e-learning at ETH Zurich. In the following are a few examples:

- **LearnIT@ETH** is an Internet based learning environment. Developed for a post-graduate course in urban and regional planning, the learning platform is now being applied also in other areas.
- **“Virtual Excursions”** is an interactive DVD-based e-learning system in ecology.
- The Project **ULI** (“Universitärer Lehrverbund Informatik”) is developing a virtual university for computer science students in co-operation with ten German universities.
- **arc-line** (Architecture Online, <http://arc-line.ethz.ch/>) develops a first-year course in architectural design as a web-based communication and production network. Arc-line does not replace traditional modes of teaching, but enhances them with the possibilities offered by new technology.
- **CALICE** (Computer Aided Learning In Civil Engineering, <http://www.calice.igt.ethz.ch>) is an online learning environment for second-year courses in geotechnics and the theory of structures. Lectures, exercises, simulations, quizzes and test are made available online.
- The **Chemistry Contact Network** (CCN, <http://www.cci.ethz.ch/>) aims to expand chemistry teaching to a new, virtual level by generating new teaching and learning tools, including virtual lab experiments.

5. What are the target groups for your e-learning courses?

On-campus students in all disciplines. Some continuing education courses offered online.

6. What support is there for the development of e-learning?

ETH offers financial, technical and didactic support for faculty wishing to develop e-learning. The main source of financial support is the **FILEP** program for the development of teaching. A major part of projects funded under FILEP are e-learning related.

There is also a national programme, “**Swiss Virtual Campus**” (www.virtualcampus.ch), funding the development of web-based courses involving at least three universities.

The Network for Educational Technology **NET** (www.net.ethz.ch) supports developers and users in the use of information technology and electronic media in education. The **Center for Teaching and Learning** (Didaktikzentrum, www.diz.ethz.ch), in cooperation with the University of Zurich, provides courses for faculty on the use of new media for teaching and learning.

7. Do you offer electronic tools to students to support the planning and management of studies?

In 2001, ETH introduced a pilot project for electronic inscription. With the introduction of a credit system across the university over the next few years, this system will provide central support for all students.

Focus group portals offer students and faculty central access to information for the planning and management of studies. Portals are offered for different target groups, eg. first-degree students, prospective students, professors and assistants (www.studium.ethz.ch, www.zulassung.ethz.ch and www.lehre.ethz.ch).

8. How is basic ICT infrastructure addressed in the project?

Ensuring that the ICT infrastructure corresponds to the need of learning, teaching and research is seen as vital for the success of ETH World. Coordination is ensured through the Director of the Computing Services being a member of the Management Committee.

Specific ICT infrastructure development projects within ETH World include Neptun, Wireless LAN and Video streaming.

The goal of project **Neptun** is to equip every ETH student with a laptop computer as a working tool for learning and research. Implementation started with a pilot project in four departments as of the winter semester 2001/02, to gather experiences as to how students can use their laptops.

The **Wireless LAN** project puts in place the facilities for wireless, mobile computing in lecture halls and semi-public space (student restaurants, libraries, work areas). The aim is to improve communication in different areas: lectures, seminars, meetings, or independent work.

The **Video Streaming** project (<http://www.net.ethz.ch/streaming/>) puts in place the infrastructure, through which lectures and important events can be made available over the Internet.

9. What is the role of library and information management in the project?

The ETH Library offers university members access to a wide range of electronic information sources. As a publication channel for material produced within ETH, the Library has established an electronic document server, the “**ETH E-collection**” (<http://e-collection.ethlib.ethz.ch/>). All doctoral dissertations are published electronically, but members of the ETH community can publish also other digital documents, such as lecture notes, laboratory publication series, and research and project reports.

Another Library project, **E-Pics**, will establish an online picture information system for teaching and research, offering online access to image collections (<http://www.e-pics.ethz.ch/>). The system will make use of a multimedia search engine developed within ETH World in the project “Advanced Querying and Coordination of Multimedia Information”.

10. What activities are related to research and the needs of researchers?

As the virtual campus project of a research-oriented university, ETH World places great emphasis on supporting research and the needs of researchers. Research aspects are being addressed through individual projects on the one hand, and through the development of research tools on the other hand.

Projects include the **Vireal Lab**, (<http://www.vireal.ethz.ch>) a virtual-real laboratory for research and teaching in pharmaceutical sciences. Vireal Lab will build an environment combining virtual science worlds by equipping a special room with intelligent “roomware” technology – tables, chairs and whiteboards with built-in electronic devices that provide easy access to computer and network resources.

As a step in implementing the goals of ETH World, a pilot project will start in 2002 to develop the research workplace on the virtual campus. Possible elements of this workplace will be information sharing and navigation tools and communication devices.

11. How is community building promoted?

A set of projects within ETH World aim at supporting the community building within the virtual campus and to the outside world.

“**ETH Life**” is the daily web publication of ETH Zurich. It reports daily on events at and matters concerning ETH. “ETH Life” is aimed at all members of the ETH community – students, professors, assistants, other staff, and alumni – as well as the general public and the media.

The **ETH Alumni Portal** is the entrance for former students into the virtual world of ETH Zurich. The goal is to support the networking among alumni and between them and ETH.

United Visions (<http://www.uv.ethz.ch/>) is the joint online campus television of ETH and the University of Zurich, a WebTV channel focusing on life at the two universities. It broadcasts lectures and information on research projects, but it also covers parties and events. United Visions is a student initiative, with financial and infrastructure support by the universities.

The project **metalogue** (<http://www.metalogue.ethz.ch>) carries out formative evaluation of all ETH World activities. The aim is to ensure effective dissemination and broad involvement and to provide regular feedback. Bringing in a work psychological perspective, the project will evaluate as well as influence the future design of ETH World.

08.11.2001