

International Master Programme in Free Software: a higher education experience

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www.uoc.edu

Outline

1. Precedents, motivation and objectives
2. Academic programme
3. Convergence to MoLOS and the EHES
4. Final remarks

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Introducing the UOC

- University degrees, distance learning (e-learning) based on the Internet (virtual campus)
- First semester: Fall 1995
- 19 officially approved degrees, an unofficial (own) degree, several postgraduate courses, master degrees and a PhD program
- More than 35000 students
- Computing and Multimedia Department: 4 officially approved degrees (2 Technical Computer Engineering, Technical Engineering in Telecommunications and Computer Engineering) with approximately 6000 students
- Postgraduate students (master degrees, postgraduate degrees and specialization degrees) and an unofficial degree (Multimedia graduate)
- Student profile: adult (above 25 years old), employed, with a family and with little available time to study

Precedents of the master programme

- Platform GNU/Linux used in the practical activities of Operating Systems and Networking subjects since 1997.
- Virtual tutored lab to support the students (installation problems, modem set up, etc.)
- Usage of free software applications in several subjects of the official degrees:
 - ◆ Dev-C++/GCC (programming)
 - ◆ MySQL, TOAD (databases)
 - ◆ GnuPG (security)
 - ◆ Eclipse (software engineering)
 - ◆ Apache, Tomcat (computer networks, e-commerce)
 - ◆ OpenOffice (document exchange)
- A FS CD and a GNU/Linux CD (Knoppix) are distributed to the students.
- Postgraduate programme in GNU/Linux since November 2001.

Other initiatives

- Adaptation of the virtual campus, web portal of the UOC, virtual library, and other services to free browsers (e.g. Mozilla)
- Usage of multi-platform formats (PDF, HTML, RTF, plain text) for document exchange
- Development of a metadistribution of GNU/Linux adapted to the UOC students (within the Hispalinux metadistros project)
- Search for free alternatives to proprietary programs currently on use in the official degrees
- The UOC's virtual campus is going to be released under the GPL license!

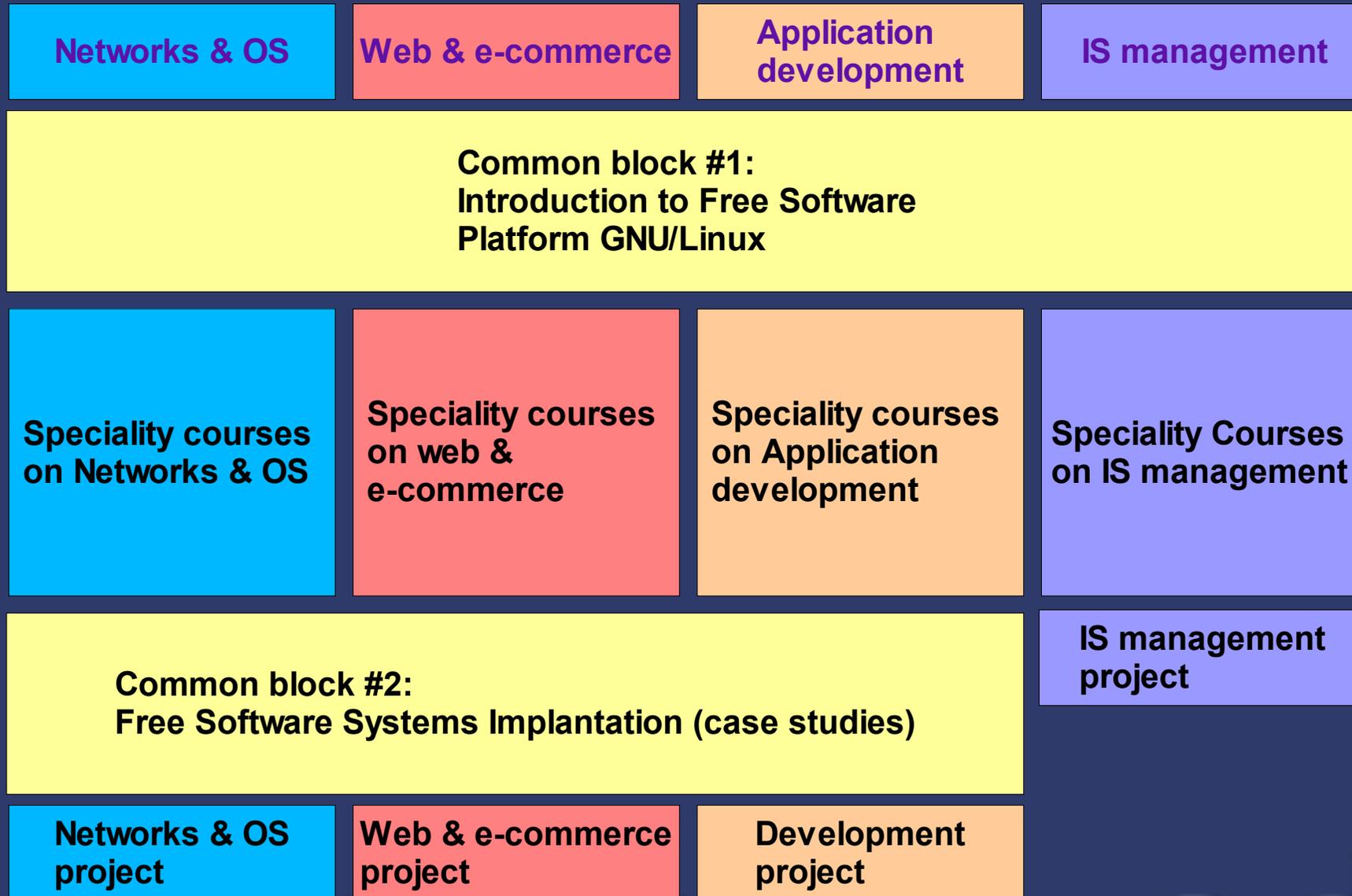
Why a master programme in FS?

- Increasing request for qualified professionals in FS technologies.
- Our students (who are employed) feel quite satisfied with the use of GNU/Linux and other FS applications in the official degrees.
- Several lecturers in the Computing and Multimedia Department believe in FS and encourage its promotion and dissemination.
- IT professionals do not usually have enough time to become self-taught in FS technologies (web sites, forums, papers, books, etc.)
- This master programme offers guided/tutored teaching, materials written by experts and different itineraries according to the students needs or preferences.
- The students of the master programme can help promote and disseminate FS.

Programme design

- Different itineraries according to professional profiles:
 - ◆ Networks and Operating Systems administrator
 - ◆ Web and e-commerce administrator
 - ◆ Applications developer
 - ◆ Information Systems management in a free software environment

Programme design



Scientific advising council

- A scientific council integrated by recognised experts of different fields has been constituted in order to:
 - ◆ Watch over the quality of the master's contents and design.
 - ◆ Take into account sound opinions of different members of the FS community.
 - ◆ Contribute to the promotion, dissemination and development of FS projects.
 - ◆ Take into account viewpoints coming from different cultures and environments.
 - ◆ Make the master programme internationally known to gather students from various origins.

Scientific advising council

- Members:

- ◆ Manuel Castells, president (UOC)
- ◆ Vinton Cerf (WorldCom)
- ◆ Marcelo D'Elia Branco (software libre project, Brazil)
- ◆ Juantomás García (Hispalinux)
- ◆ Jesús M. González Barahona (Univ. Rey Juan Carlos)
- ◆ Pekka Himanen (University of California at Berkeley)
- ◆ Miguel de Icaza (Ximian/Novell)
- ◆ Òscar del Pozo (Softcatalà)
- ◆ Pam Samuelson (University of California at Berkeley)

- ◆ Rafael Macau, secretariat (UOC)
- ◆ Jordi Mas, secretariat (UOC/Ximian/Softcatalà)
- ◆ David Megías, secretariat (UOC)

Return to the FS community

- All the didactic materials are published under a free license (GFDL) so that they can be widely used, modified, extended, edited, etc.
- A bibliographic corpus on FS (in Spanish and Catalan) is being created.
- The final projects and developments carried out within this programme are published using free licenses.

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Programme courses

International Master in Free Software

Itinerary #1

**Networks and
Operating Systems
Administrator**

Itinerary #2

**Web and
E-commerce
Administrator**

Itinerary #3

**Application
Developer**

Itinerary #4

**Information
Systems
Management**

Introduction to Free Software

Basic GNU/Linux Operating System

Advanced Administration
of the GNU/Linux OS

Advanced Administration
of the GNU/Linux OS

Advanced Administration
of the GNU/Linux OS

Legal Aspects
and Exploitation

Computer Networks

Web Development

Introduction to
Software Development

Advanced Aspects of
Software Development

Utilities and Tools

Advanced Networking:
Security Issues

Database Systems

Free Software
Engineering

Implantation

Networks and OS
Project

Web
Project

Development
Project

IS Management
Project

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Convergence to MoLOS and the EHES

- This master programme has been chosen by the Catalan Council as a pilot experience for its adaptation to the EHES.
- The programme credits have been recomputed according to the ECTS basis.
- We have rearranged the programme in a 30 + 30 + 30 ECTS structure:
 - ◆ 30 ECTS in **5 core (mandatory) courses**, with 6 ECTS each.
 - ◆ 30 ECTS in **5 elective courses**, with 6 ECTS each (the student can choose among 8 different courses).
 - ◆ 30 ECTS in **practicum + master's thesis**.

Convergence to MoLOS and the EHES

The new proposal consists of 90 ECTS in two years:

	Semester #1	Semester #2												
First year	<table border="1"><tr><td>Core</td><td>Core</td></tr><tr><td>Core</td><td>Elec</td></tr><tr><td colspan="2">24 ECTS</td></tr></table>	Core	Core	Core	Elec	24 ECTS		<table border="1"><tr><td>Core</td><td></td></tr><tr><td>Elec</td><td>Elec</td></tr><tr><td colspan="2">18 ECTS</td></tr></table>	Core		Elec	Elec	18 ECTS	
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Convergence to MoLOS and the EHES

- Core courses:
 - ◆ Introduction to free software
 - ◆ Basic GNU/Linux operating system
 - ◆ Advanced administration of GNU/Linux
 - ◆ Legal aspects and exploitation of free software
 - ◆ Case studies

Convergence to MoLOS and the EHES

- Elective courses:
 - ◆ Utilities and tools
 - ◆ Computer networking
 - ◆ Advanced networking: security issues
 - ◆ Web development
 - ◆ Databases
 - ◆ Introduction to software development
 - ◆ Advanced programming
 - ◆ Software engineering in free software environments

Convergence to MoLOS and the EHES

- Possible courses:
 - ◆ The economy of free software
 - ◆ Network administration
 - ◆ Ethical and social aspects
 - ◆ ...

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Final remarks

- About 90 students enrolled in the first edition of the master programme (started on November the 17th, 2003).
- 260 students have registered in aggregate (four editions).
- A consultant lecturer (tutor) for each virtual classroom supports the learning process and programmes the evaluation activities.
- The didactic materials of these courses are published under the GFDL and are available at the portal www.uoc.edu:

<http://www.uoc.edu/masters/softwarelibre/esp/materiales.html>

Final remarks

- The first few students graduated in July 2004 (Postgrad in IS Management in FS environments).
- The first few students with a Master diploma will graduate in July 2005.
- Some Latin American students are granted by the Spanish “Fundación Carolina” each year.
- We are also in contact with different Latin American universities (from Mexico and Colombia) which are interested in offering this programme.

Presentation written using:



Thank you!!!