Scuola Superiore Sant'Anna
di Studi Universitari e di Perfezionamento

Università di Pisa

Master Degree Program /Laurea Magistrale
in
Computer Science and Networking

September 22, 2014

Start up
Academic Year 2014-15

Welcome

- This speech: a short introduction for the Master Program start up, 6th edition
- Approach, information, organization, comments, and recommendations

Information

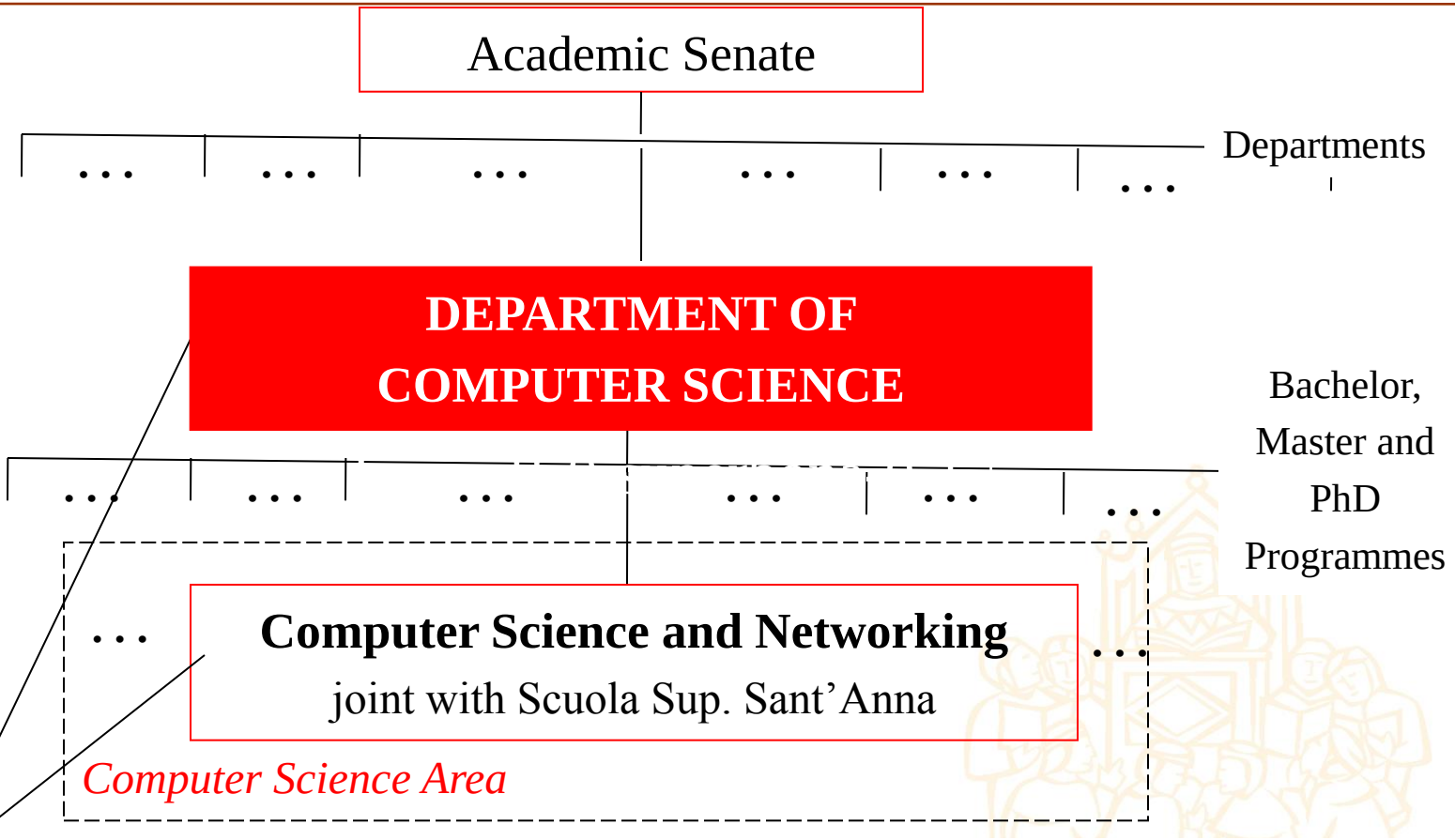
- Official page of the Master Program (WTW = MCSN)

  http://www.di.unipi.it/it/didattica/wtw-lm

  news, enrollment, persons, courses, calendar, timetable, graduation, documents and regulation, …, management, registration to exams, …

- WTW Office Secretary:
  - **Rosie Mongini** (Department of Computer Science)
  - **Claudio Manfroni** (TeCIP, Sant'Anna)
- Lecture rooms at:
  - Department of Computer Science, c/o Polo Fibonacci building C,
  - TeCIP – Scuola Sant'Anna, c/o Area Ricerca CNR,
  - Department of Electrical Engineering (2nd semester)

University of Pisa



- ***Administrative and management responsibility****: didactic plans and rules, students careers.*
- ***Sant'Anna*** *is the peer partner in the didactic and scientific management.*
- *Joint Title of Master in Computer Science and Networking.*

Structure of Master Program

1 credit (ECTS or CFU) = 25 total hours, of which 8 hours of whole class teaching

FIRST YEAR – all mandatory activities – total 57 ECTS

Algorithm Engineering	9 ECTS	2nd semester
Network Configuration and Management	9 ECTS	annual
Advanced Programming	9 ECTS	1st semester
Fundamentals of Signals, Systems and Networks	12 ECTS	annual
High Performance Computing	9 ECTS	1st semester
Teletraffic Engineering	9 ECTS	2nd semester

SECOND YEAR – total 63 ECTS

Mandatory activities:

Distributed Systems: Paradigms and Models	9 ECTS	1st semester
Software Service Engineering	9 ECTS	1st semester

4 subsidiary courses (including the so-called 'free-choice' exam) to be selected for the **2nd year** (**Study Plan**), according to recommended schemes.

Study Plan: to be presented at the end of 1st year (June 2015)

Computer Science AND Networking

- Goal: experts in ICT systems and applications for which BOTH Computer Science and Networking play a central role
- Distributed systems, distributed applications
- Optimization/improvent of networking capabilities through computer science software-hardware solutions
- Optimization/improvement of computer systems and applications through proper communication systems
- 'Programmable Networking':
  - e.g., *Software Defined Networking*
- New products in which computation and communication are strictly integrated (not at distinct 'opaque' layers)
  - Distributed heterogenous systems of fixed and mobile computers, devices, sensors and networks (how to exploit the power of every computing and communication device available in a given context)

Computer Science AND Networking

Cornerstones:

- advanced programming,
- algorithm design,
- high-performance computing,
- service-oriented architectures,
- distributed systems,
- network architectures, configuration and management,
- physical network technologies,
- performance evaluation of systems, programs and communications.

Exams regulation

- **Written**, or **oral**, or **written + oral**, or **project + oral**
- **Midterms** (intermediate tests): if sufficient rating, they can replace the written exam
  - Two official periods in 1st semester (no lectures during these days):
    - Beginning of November
    - December - end of semester
- **6** '**APPELLI**': 2 in January-February, 3 in June-July, 1 in September, if no midterms are provided
- **5** '**APPELLI**': 2 in January-February, 2 in June-July, 1 in September, if midterms are provided

Approach to this Master Program

- Research and Teaching:
  - All the teachers are internationally recognized experts in the disciplines they teach
  - Many courses have been designed explicitly and originally for this Master Program
- Main goal: high quality education and training
- Exploit the "small class" (*'numero programmato'*) feature at best
- Strict interaction students - professors

Results of 2009 – 2013 editions

Total enrolled students	*78*
% of master degree awarded w.r.t. student no.	*70.8%*
Average final score	*105.76/110*
% of master degrees with 110 or 110 cum laude	*61.8%*
Average course score from student's "questionari di valutazione" (A.Y. 2012-20133)	*3.3 (out of 4)*

Management of Master Program

Master Board (*Consiglio di Corso di Laurea*)**:**

- Current President: Prof. Marco Danelutto
- All professors and assistant researchers
- Representatives of students:
  - Marco Colucci (3rd)
  - Alessandro Lenzi (3rd)
  - Dario Balinzo (2nd)
  - Roberto Tacconelli (2nd)

Recommendation:
- choose 2 new informal representatives in 1st year class,
- **formal elections** in Spring

- Didactic Committee *(Commissione didattica)*:
  - 4 students , 4 professors

Acknowledgements

- All the actions and solutions to improve teaching, syllabus, prerequisites, and so on,

  have been always discussed and implemented with the fundamental contribution of the **students and their representatives.**

- *Since the 1st edition, their participation to the organization of this Master Program has been of invaluable importance.*

Background and prerequisites

- One of the most important results of the joint Didactic Committee has been the great **improvement of course contents** and the **regularization of prerequisites** for each course.
- Different input background of students (Computer Science / Engineering, University of Pisa / other Italian Universities / foreign Universities, …).
- Now, the strictly necessary prerequisites of **every** course are provided by other courses and/or by the initial part of the courses themselves (*no pre-courses*) and/or by recommended teaching material.
- See the official document '**MCSN student profile: requested capabilities and background**'
- **Each student is strongly recommended to individuate possible lacks and deficiencies in his/her background,**
- and to discuss such problems with the teachers.

Approach to exam management and quality of the Master Program

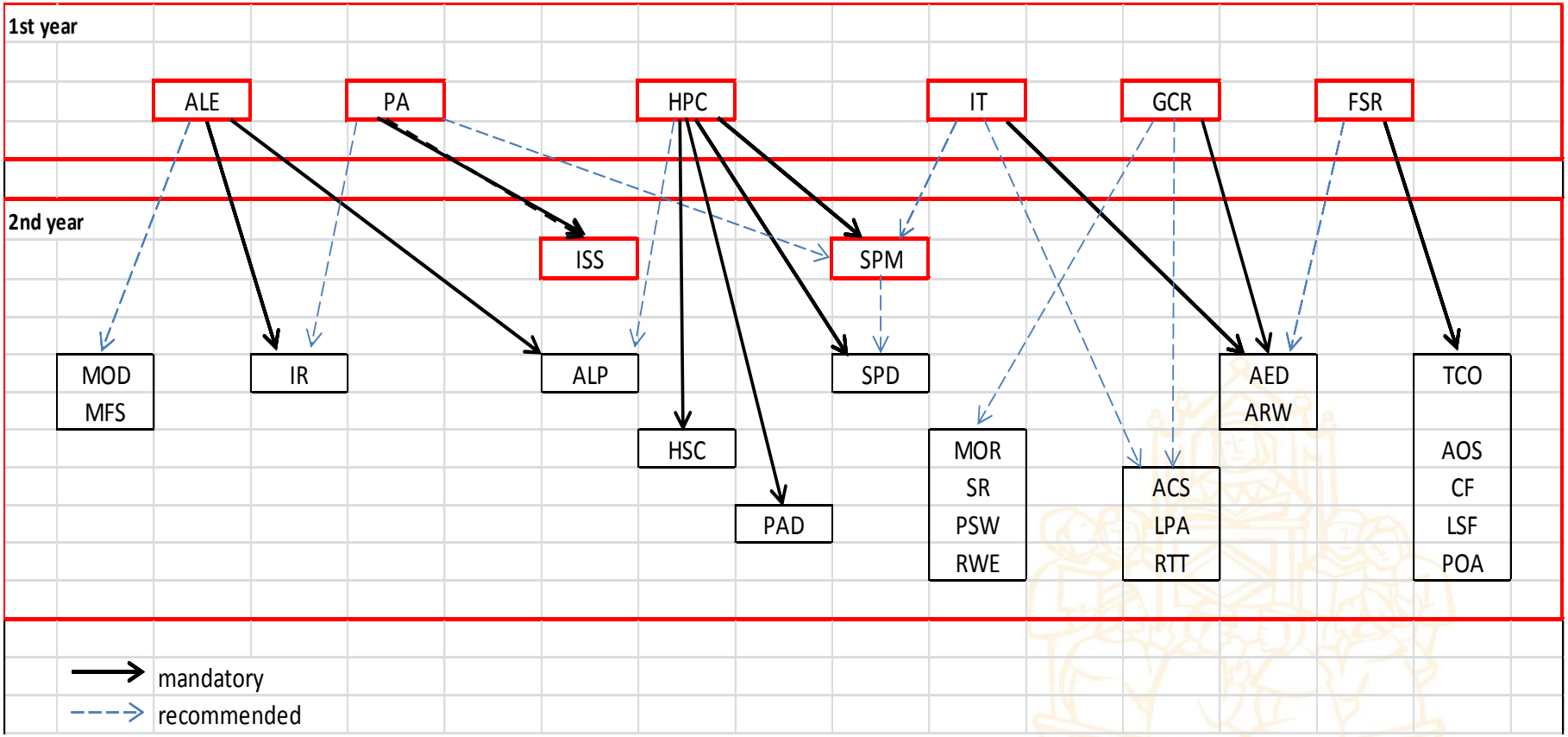
- In principle, all the exams of 1st year should be passed before the exams of the 2nd year can be taken, and the mandatory exams should precede the subsidiary ones.

- **According to the experience of the past editions, we have verified that anticipating subsidiary exams, and/or trying to postpone mandatory exams of 1st year, is very dangerous.**

- The Master Board **strongly recommends** such approach,

  + a **partial ordering** of precedences.

Partial ordering




good luck
in bocca al lupo