# Systems and Networks (with workshop - The use of office automation tools)

## Prof. Daniele Tessera

***COURSE AIMS AND INTENDED LEARNING OUTCOMES***

The course aims to explore the architecture of the Internet, the main protocols for the distribution of multimedia contents, and the most relevant cryptographic techniques for the management of communication security and integrity. Furthermore, it aims to help students develop their knowledge of office automation skills, so that they can create, post, and share contents online. Finally, it aims to analyse the principles at the basis of interfacing, and the use of databases

***COURSE CONTENT***

An introduction to the architecture of the Internet, with a focus on the TCP/IP protocol and its impact on content distribution.

Online multimedia applications: the main features and the architecture of video streaming services, with a focus on real-time protocols.

Communication security: confidentiality, integrity, and authentication.

The main symmetric-key and public-key encryption techniques, and their applications. The management of author’s rights for digital documents: DRM and watermarking.

Office automation software: word processors, spreadsheets, presentations, computer drawing, and data collection modules.

An introduction to the use of databases.

The course content will be the same for all students, regardless of class attendance. All the lectures – together with the presentations used in class and the audio/video comments made by the lecturer – will be made available online (distance learning mode). In addition, students will have the possibility to contact and/or meet the lecturer for further clarifications (either face-to-face or online).

***READING LIST***

Lecture notes, course packs, and online teaching material.

Presentations based on the topics explained during the course, with audio/video comments made by the lecturer (distance learning mode).

Further information on the textbook of reference will be made available at the beginning of the course.

For an in-depth analysis of the topics explained during the course:

*Reti di calcolatori ed internet. Un approccio top-down*. J.F. Kurose e K.W. Ross. Pearson, 2013, sixth edition.

***TEACHING METHOD***

Frontal lectures in class and practical activities (guided by the lecturer) in the laboratory.

***ASSESSMENT METHOD AND CRITERIA***

Written test (with open-ended questions) followed by an oral exam.

The written test will determine 20/30 of the final mark.

The oral exam will determine 8/30 of the final mark.

In addition, during the workshop of the course, students will have the possibility to work on short projects (that must be previously approved by the lecturer). These activities will allow them to increase their final mark of up to 2 points.

***NOTES AND PREREQUISITES***

In addition, students will have to attend the ‘Use of office automation tools’workshop held by Dr. Tommaso Tosi (tommaso.tosi13@unicatt.it).

Further information can be found on the lecturer's webpage at http://docenti.unicatt.it/web/searchByName.do?language=ENG or on the Faculty notice board.

**The use of office automation tools (workshop)**

Dr. Tommaso Tosi

***COURSE AIMS AND INTENDED LEARNING OUTCOMES***

The course aims to present the tools for the creation of documents, presentations, spreadsheets for data analysis/processing, using Microsoft Office, and explore image editing through the use of opensource software.

***COURSE CONTENT***

* Excel: an introduction to the use of spreadsheets, formatting, functions, search functions, graphs, charts, and pivot tables. An introduction to data crawling and the analysis/cleansing of online data.
* PowerPoint: The key principles and concepts for the preparation of presentations.
* Word: An introduction to the use of Word, with a focus on styles, references, collaboration tools, and template creation.
* Graphics: the difference between Raster and Vector graphics. Raster graphics editing (using the free software GIMP), and vector graphics editing (using Inkskape).
* Cloud tools: Google Docs and Google Forms (surveys and questionnaires).

***READING LIST***

Students will have to study the teaching material that will be made available in class.

***TEACHING METHOD***

Frontal lectures and practical activities (guided by the lecturer)

Non-attending students will have to study the teaching material that will be made available on Blackboard.

***ASSESSMENT METHOD AND CRITERIA***

Written assignment, to be defined with the lecturer.

***NOTES AND PREREQUISITES***

There are no prerequisites for attending the course.

Further information can be found on the lecturer's webpage at http://docenti.unicatt.it/web/searchByName.do?language=ENG or on the Faculty notice board.