



Subject: Social Networks and Collaboration on the Internet (SNCI)  
Code: 32434  
Institution: Escuela Politécnica Superior, Universidad Autónoma de Madrid  
Degree: Master's program in Research and Innovation in Information and Communications Technologies (i<sup>2</sup>-ICT)  
Level: Master  
Type: Elective [Human-Centered Software Development]  
ECTS: 6

## COURSE GUIDE: Social Networks and Collaboration on the Internet (SNCI)

**Academic year:** 2017-2018

**Program:** Master's program in Research and Innovation in Information and Communications Technologies (i<sup>2</sup>-ICT)

**Center:** Escuela Politécnica Superior  
**University:** Universidad Autónoma de Madrid

**Last modified:** 2016/05/06  
**Status:** Approved 2016/05/13



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## 1. ASIGNATURA / COURSE (ID)

### Redes Sociales, Colaboración en Red Social Networks and Collaboration on the Internet (SNCI)

#### 1.1. Programa / program

Máster Universitario en Investigación e Innovación en Tecnologías de la Información y las Comunicaciones (i<sup>2</sup>-TIC)

Master in Research and Innovation in Information and Communications Technologies (i<sup>2</sup>-ICT) [Officially certified]

#### 1.2. Course code

32434

#### 1.3. Course areas

Languages and Information Systems

#### 1.4. Tipo de asignatura / Course type

Optativa [itinerario: Software centrado en el usuario]  
Elective [itinerary: Human-Centered Software Development]

#### 1.5. Semester

Second semester

#### 1.6. Credits

6 ECTS

#### 1.7. Language of instruction

The lecture notes are in English. The lectures are mostly in Spanish. Some of the lectures and seminars can be in English.



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## 1.8. Recommendations / Related subjects

Knowledge of ICT and their use on the Internet and the Web at an introductory level is useful to follow the course.

Related subjects are:

- Interacción persona-ordenador [Human-Computer Interaction (HCI)]
- Desarrollo de software dirigido por modelos [Model-Driven Software Development]
- Sistemas adaptativos y modelado de usuario [Adaptive Systems and User Modeling]
- Computación ubicua e inteligencia ambiental [Ubiquitous Computing and Ambient Intelligence]
- Recuperación de Información [Information retrieval]
- Minería Web [Web mining]

## 1.9. Lecturers

Add @uam.es to all email addresses below.

**Lectures and labs:**

**Dr. Ruth Cobos** (Coordinator)  
Departamento de Ingeniería Informática  
Escuela Politécnica Superior  
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Departamento de Ingeniería Informática  
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Web: <http://www.eps.uam.es/~ortigosa>

## 1.10. Objetivos de la asignatura / Course objectives

Esta asignatura capacita al estudiante para investigar y trabajar en los campos de aprendizaje y trabajo colaborativo asistido por ordenador (CSCL, CSCW). En ella se estudia la Web como medio para la colaboración, la llamada Web Social, considerando para ello las aportaciones de la ingeniería web y las redes sociales. Se expone y trabaja en esta asignatura con otras tecnologías que dan soporte para la colaboración, como son los dispositivos móviles y la televisión digital interactiva (iDTV).

This course prepares students to investigate and work in both collaborative learning and cooperative work fields (CSCL, CSCW). The Web as a media for collaborating is studied, i.e. the Social Web, considering the contribution of web engineering and social networks to it. Furthermore, other technologies to support collaboration are studied in this subject, such as mobile devices and interactive digital television (iDTV).

At the end of each unit, the student should be able to:

| UNIT BY UNIT SPECIFIC OBJECTIVES                           |  |
|--|--|
| <b>UNIT 1.- Introduction to group work on the Internet</b> |  |
| 1.1.   | Provide definitions and classifications of collaborative systems (groupware)                             |
| 1.2.   | Study of collaborative services  |
| 1.3.   | Know how diverse technologies and devices are used for collaboration                                     |
| <b>UNIT 2.- Collaborative Learning</b>                     |  |
| 2.1.   | Identify the most common computer-supported collaborative learning strategies: CSCL and Blended Learning |
| 2.2.   | Understand how to use the Social Web for collaborative learning  |
| 2.3.   | Provide tools and experiences for collaborative learning   |
| <b>UNIT 3.- Social Networks</b>                            |  |
| 3.1.   | Identify the main characteristics of social networks   |
| 3.2.   | Know the evolution of the main technology supporting social networks                                     |
| 3.3.   | Provide tools and experiences for social network development and analysis                                |
| <b>UNIT 4.- Groupware design</b>                           |  |
| 4.1.   | Know the main aspects of groupware systems and applications  |
| 4.2.   | Provide tools for Groupware development  |
| 4.3.   | Know about Cloud Computing   |



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|   |   |
|---|---|
| <b>UNIT 5.- The Web as a collaboration medium</b> |   |
| <b>5.1.</b>                                       | <b>Understand the need of web engineering and know its basics</b>                                     |
| <b>5.2.</b>                                       | <b>Know how to take advantage of the Social Web</b>   |
| <b>5.3.</b>                                       | <b>Understand how to work both collective intelligence and knowledge management in the Social Web</b> |

## 1.11. Course contents

1. Introduction to group work on the Internet
  - 1.1. Computer-Supported Cooperative Work (CSCW) and Groupware
  - 1.2. Definitions, classifications and examples of collaborative services
  - 1.3. Technologies and devices for supporting collaboration
2. Collaborative Learning
  - 2.1. Computer-Supported Collaborative Learning (CSCL)
  - 2.2. Blended Learning
  - 2.3. Social Learning and Learning Analytics
  - 2.4. Tools and Experiences
3. Social Networks
  - 3.1. Group formations: Team, group and community
  - 3.2. Social Networks
  - 3.3. Tools and Experiences
4. Groupware design
  - 4.1. Main aspects of groupware systems/applications
  - 4.2. Groupware development tools
  - 4.3. Cloud Computing
5. The Web as a collaboration medium
  - 5.1. The Web and web engineering
  - 5.2. Taking advantage of the Social Web (strategy, business ...)
  - 5.3. Collective intelligence and knowledge management in the Social Web

## 1.12. Course bibliography

- Aarreniemi-Jokipelto, P.: T-learning model for learning via Digital TV. In Proceedings of the 16th annual conference on innovation in education for electrical and information engineering, Lappeenranta, Finland. 2005.
- Baecker, R. et al.: Readings in Groupware and Computer-Supported Cooperative Work. San Mateo CA: Morgan Kauffmann, 1993.
- Borghoff, U., Schlichter, J. Computer-Supported Cooperative Work: Introduction to Distributed Applications. Springer, 2000.



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- Castaño C. et al. *Prácticas Educativas en Entornos Web 2.0*. Editorial Síntesis. 2008.
- Cobcroft, Rachel S., Towers, Stephen J., Smith, Judith E., & Bruns, Axel: *Mobile learning in review: Opportunities and challenges for learners, teachers, and institutions*. In *Online Learning and Teaching (OLT) Conference 2006*, 26 September 2006, Queensland University of Technology, Brisbane. 2006.
- Coleman, D. *Groupware: Collaborative Strategies for Corporate LANs and Intranets*. Prentice Hall, Upper Saddle River, NJ. 1997.
- Deek F. P., McHugh J. A.: *Computer-Supported Collaboration with Applications to Software Development*. Kluwer Academic Publishers. 2003.
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- Lytras, M.D. et al.: *Web 2.0 The Business Model*. Springer. 2008.
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- O'Reilly T. *What is Web 2.0: Design Patterns and Business Models for the next generation of software*. O'Reilly website, 30th September. O'Reilly Media Inc. 2005.
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- Yiming Y., Churchill, E.: *Agent Supported Cooperative Work (Multiagent Systems, Artificial Societies, and Simulated Organizations)*. Ediciones de la Kluwer Academic Publishers. 2003.
- Vossen, G. Hagemann, S.: *Unleashing Web 2.0: From Concepts to Creativity*. Morgan Kaufman. 2007.
- Weiss, G. *Multiagent Systems.: A Modern Approach to Distributed Artificial Intelligence*, Julio, 2000.

### 1.13. Coursework and evaluation

It is necessary to attend at least 80% of the classes and complete successfully the assignments.

The course involves lectures, weekly assignments, lab assignments, seminars, a research work presentation with discussion and a final exam.

- In the ordinary exam period, the evaluation will be made according to the following scheme



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- 60 % Exercises, lab assignments and class participation
- 40 % Report on a research/innovation topic and presentation with discussion [mandatory]

The grades of the individual parts are kept for the extraordinary exam period. This work will be part of the lab assignments.

- In case of a fail grade in the ordinary exam period, in the extraordinary exam period, the student has the opportunity to
  - Handing in all the exercises with corrections
  - Handing in a report on a research topic of the course.

The grade will be determined by

- 20 % Exercises and lab assignments [only if they are handed]
- 30 % Report on a research/innovation topic [only if the report are handed]
- 50 % Final exam [mandatory]