MGA 678 Computer Supported Collaborative Work (5 ECTS, 135h), fall 2019 (17 weeks)

Instructor: **Dr. Panagiotis Kosmas –** pk.kosmas@idmaster.eu

Contact Details: Special online "office hours" will be set up for group and individual mentoring and those will be conducted through google hangout/chat. Otherwise, you can also send your requests/questions regarding this course to pk.kosmas@idmaster.eu

Course objectives:
The goal of this course is to provide the students with the theoretical knowledge and practical skills on understanding the social, cultural and organizational context of technologies, knowledge and skills that will help in the design and re-design of technologies for learning purposes. The focus of this course will be the Computer Supported Collaborative Learning (CSCL). Students will be working on the investigation of how we can design applications/ technologies/ devices to be implemented or used in different collaborative learning settings.

Course content: Introduction; CSCW meaning: Computer Supported Collaborative Learning (CSCL), Collaboration, Participation & Communication; Collaborative Learning Theories: Vygotsky's sociocultural theory; Characteristics of Collaborative Learning; Case Studies & Application Areas: Mobile Technologies, VR Technologies, Embodied Learning technologies.

Learning Outcomes:
Upon successful completion of the course, students will be able to:

(a) Understand the meaning of Collaborative Learning
(b) Understand the broad ideas and issues related to collaboration using technology
(c) Explore the added value of the technology in Collaborative Learning environments
(d) Observe and understand group behavior, culture and dynamics
(e) Clarify the relationship between Interaction Design and Learning
(f) Employ specific research methods to understand the strengths or challenges of collaborative learning
(g) Identify factors that may influence the success of a system for collaborative learning
(h) Practice experimental fieldwork to assess the appropriateness of particular technologies in a given setting/context

Workload: In order to successfully conclude this course, students are required to do both individual and group-based activities. Theoretical topics are presented as short modules through google classroom and other forms of synchronous and asynchronous communication. Work is divided into three parts: work on individual assignments (approximately 20 hours), work on literature (approximately 35 hours), work on group project (approximately 60 hours), and participation and reflection (20 hours).

Assessment: The exam grade consists of the following components: individual assignments (30%), group project assignment (60%), and overall participation (10%).
Final mark will be on a 0-10 scale in increments of 0.5 points. Passing grade is 5 out of 10.

Expected individual work activities: It is possible to receive 30 points for two individual assignments (15 points each) and will be based on the readings.

- Individual Assignment 1: CSCW and CSCL: Similarities – differences - possibilities
- Individual Assignment 2: Interaction Design in CSCL

Expected group work activities:
It is possible to receive 60 points for the group assignments.
The group project is structured in four parts.

- Group Assignment – Part I: a design plan /identify the design problem (max 10 points)
- Group Assignment – Part II: Analyze a collaborative practice and the use of collaborative technologies – review of previous studies. (max 10 points)
- Group Assignment – Part III: A conceptual design of a collaborative technology (max 20 points)
- Group Assignment – Part IV: final report and presentation (max 10 points)
- Peer evaluation (max 10 points)

If students have contributed a significantly different amount of time to the group project the instructor may raise or lower the points.

Late submissions are NOT accepted. Please be on time with your assignments!

Assessment criteria: Grades will be based on these criteria:
91–100% of the work is done — excellent: outstanding work with only few minor errors.
81–90% of the work is done — very good: above average work but with some minor errors.
71–80% of the work is done — good: generally good work with a number of notable errors.
61–70% of the work is done — satisfactory: reasonable work but with significant shortcomings.
50–60% of the work is done — sufficient: passable performance meeting the minimum criteria.
49% or less of the work is done — fail: more work is required before the credit can be awarded.

Technology needed to perform this course: Basic knowledge of computers and use of Google Applications.

Synchronous activities: The delivery of the course will be primarily asynchronous with discussions taking place mainly through the google classroom platform. In addition though, there will be set times for short synchronous sessions (either text chat or voice chat through google hangouts). In each session we will discuss acquired knowledge, provide feedback and/or mentor students. The times and days of these synchronous sessions will be decided and announced early in the semester.

Sessions	Topic/Materials	Tasks/Assignments	Technology
Session 1: (21/08 - 03/09)	Induction session: Getting familiar with the course environments and technologies **Material**: Course pedagogical script	**Assignments:** 1. Read course Pedagogical script 2. Explore course Resources	Google applications
Session 2: (04/09 - 17/09)	Introduction to CSCW and CSCL **Material**: 1. Grudin, J. (1994). Computer-supported cooperative work: History and focus. *Computer, 27* (5), 19-26. 2. Stahl G. (2013) Theories of Collaborative Cognition: Foundations for CSCL and CSCW Together. In: Goggins S., Jahnke I., Wulf V. (eds) *Computer-Supported Collaborative Learning at the Workplace.* Computer-Supported Collaborative Learning Series, vol 14. Springer, Boston, MA 3. Other resources on google classroom	The main aims of this session are to: • Understand the meaning of CSCW and CSCL • Explain the difference between CSCW and CSCL • Identify the basic characteristics of both research areas • Outline the different forms of collaboration for learning purposes **Individual Assignment 1 (due on 14/9)**	Google Hangout and classroom
Session 3: (18/09 - 01/10)	Major themes and theories in CSCL **Material**: 1. Dillenbourg P. (1999) What do you mean by collaborative learning?. In P. Dillenbourg (Ed) *Collaborative-learning: Cognitive and Computational Approaches*. (pp.1-19). Oxford: Elsevier 2. Dillenbourg, P. & Fischer, F. (2007). Basics of Computer-Supported Collaborative Learning. *Zeitschrift für Berufs- und*	Read the resources on google classroom **Group Assignment – Part I (due on 30/9)**	Google Hangout and classroom

	Wirtschaftspädagogik. 21, pp. 111-130. 3. Other resources on google classroom		
Session 4: (02/10 - 15/10)	Interaction Design in CSCL **Material**: 1. Vatrapu, R., Suthers, D., & Medina, R. (2008). Usability, sociability, and learnability: A CSCL design evaluation framework. In *Proceedings of the 16th international conference on computers in education* (ICCE 2008). 2. Resources on google classroom	• The role of Interaction Design in CSCL • Designing for CSCL environments • Examples **Individual Assignment 2 (due on 12/10)**	Google Hangout and classroom
Session 5: (16/10 - 29/10)	Case Studies and Application Areas I **Material**: 1. Hernández-Leo, D, Villasclaras-Fernández, E. D., Asensio-Pérez, J. I, Dimitriadis, Y., Jorrín-Abellán, I. M., Ruiz-Requies, I., & Rubia-Avi, B. (2006). COLLAGE: A collaborative Learning Design editor based on patterns. *Educational Technology & Society, 9* (1), 58-71. 2. Looi, C. K., So, H. J., Toh, Y., & Chen, W. (2011). The Singapore experience: Synergy of national policy, classroom practice and design research. International Journal of *Computer-Supported Collaborative Learning, 6*(1), 9-37.	• Previous work in the area • Successful examples • Implementation of ID for different CSCL environments • Authentic and non-authentic CSCL environments **Group Assignment – Part II (due on 27/10)**	Google Hangout and classroom
Reflection Week: (30/10 - 05/11)	Reading and Reflection Week Individual and Group mentoring		Google Hangout and classroom

Session 6: (06/11 - 19/11)	Case Studies and Application Areas II **Material**: 1. Martínez-Monés, A., Dimitriadis, Y., & Harrer, A. (2008). Interaction-aware design for learning applications reflections from the CSCL field. In 2008 *Eighth IEEE International Conference on Advanced Learning Technologies* (pp. 539-541). IEEE. 2. Tesoriero R., Fardoun H.M., Awada H. (2017). Chat-Based Application to Support CSCL Activities. In: Meiselwitz G. (eds) *Social Computing and Social Media. Applications and Analytics.* SCSM 2017. Lecture Notes in Computer Science, vol 10283. Springer, Cham 3. Resources on google classroom	• Previous work in the area • Successful examples • Implementation of ID for different CSCL environments • Authentic and non-authentic CSCL environments **Group Assignment – Part III (due on 17/11)**	Google Hangout and classroom
Session 7: (20/11 - 03/12)	Collaborative Learning environments with technology **Material**: Resources on google classroom	• Possibilities for further research • Future directions • The added value of technological applications for CSCL **Group Assignment – Part IV (due on 09/12)**	Google Hangout and classroom
Session 8: (04/12 - 17/12)	Presentation of the final projects	Group project presentations	Google presentation and documents

References – Readings

- Hernández-Leo, D, Villasclaras-Fernández, E. D., Asensio-Pérez, J. I, Dimitriadis, Y., Jorrín-Abellán, I. M., Ruiz-Requies, I., & Rubia-Avi, B. (2006). COLLAGE: A collaborative Learning Design editor based on patterns. *Educational Technology & Society, 9* (1), 58-71.

- Dillenbourg, P. & Fischer, F. (2007). Basics of Computer-Supported Collaborative Learning. *Zeitschrift für Berufs- und Wirtschaftspädagogik. 21*, pp. 111-130.

- Grudin, J., & Poltrock, S. E. (1997). Computer-supported cooperative work and groupware. *Advances in computers, 45*, 269-320. - [only sections 1 & 2 pages 3-7]

- Grudin, J. (1994). Computer-supported cooperative work: History and focus. *Computer, 27* (5), 19-26.

- Kumar, V. S. (1996, April). Computer-supported collaborative learning: issues for research. In *Eighth annual graduate symposium on Computer Science*, University of Saskatchewan

- Kreijns, K., & Kirschner, P. A. (2004). Designing sociable CSCL environments. In *What we know about CSCL* (pp. 221-243). Springer, Dordrecht.

- Tesoriero R., Fardoun H.M., Awada H. (2017). Chat-Based Application to Support CSCL Activities. In: Meiselwitz G. (eds) S*ocial Computing and Social Media. Applications and Analytics.* SCSM 2017. Lecture Notes in Computer Science, vol 10283. Springer, Cham

- Martínez-Monés, A., Dimitriadis, Y., & Harrer, A. (2008). Interaction-aware design for learning applications reflections from the CSCL field. In 2008 *Eighth IEEE International Conference on Advanced Learning Technologies* (pp. 539-541). IEEE.

- Stahl G. (2013) Theories of Collaborative Cognition: Foundations for CSCL and CSCW Together. In: Goggins S., Jahnke I., Wulf V. (eds) *Computer-Supported Collaborative Learning at the Workplace.* Computer-Supported Collaborative Learning Series, vol 14. Springer, Boston, MA

- Chen, J., Wang, M., Kirschner, P. A., & Tsai, C. C. (2018). The role of collaboration, computer use, learning environments, and supporting strategies in CSCL: A meta-analysis. *Review of Educational Research, 88*(6), 799-843.

- Looi, C. K., So, H. J., Toh, Y., & Chen, W. (2011). The Singapore experience: Synergy of national policy, classroom practice and design research. *International Journal of Computer-Supported Collaborative Learning, 6*(1), 9-37

- Vatrapu, R., Suthers, D., & Medina, R. (2008). Usability, sociability, and learnability: A CSCL design evaluation framework. In *Proceedings of the 16th international conference on computers in education* (ICCE 2008).

- Dillenbourg P. (1999) What do you mean by collaborative learning?. In P. Dillenbourg (Ed) *Collaborative-learning: Cognitive and Computational Approaches.* (pp.1-19). Oxford: Elsevier