

Academic Year: ( 2017 / 2018 )

Review date: 04-04-2017

Department assigned to the subject: Department of Computer Science and Engineering

Coordinating teacher: SANCHEZ SEGURA, MARIA ISABEL

Type: Electives ECTS Credits : 6.0

Year : 4 Semester : 1

**COMPETENCES AND SKILLS THAT WILL BE ACQUIRED AND LEARNING RESULTS.**

Generic Competences:

- Abstraction (PO a)
- Analysis and Synthesis (PO a)
- Ability to Organise and Plan (PO b)
- Ability to solve problems (PO c, e)
- Ability to work in group (PO d)
- Ability to transfer the knowledge acquired to practical exercises (PO e)

Specific Competencies

- Cognitives (PO a, b, d, i, h, k) (CG5, CESI1, CESI6)
  - 1) General concepts about knowledge governance.
  - 2) Organizational knowledge governance
  - 3) Learning organizations
  - 4) Knowledge governance competencies for the informatics engineers
  - 5) Change management
  - 6) Organizational competencies model for knowledge governance
  - 7) Knowledge elicitation
  - 8) Knowledge reuse: mechanisms and support technologies.
  - 9) Knowledge assets valuation
  - 10) Integration of the knowledge governance in the productive process
  - 11) Knowledge governance management
  - 12) Knowledge management at a strategic level to support engineering activities.
  - 13) Knowledge management at a management level to support engineering activities.
  - 14) Knowledge management at an operative level to support product engineering activities.
- Instrumental (know-how) (PO a, b, e, k, g) (CG5, CESI1, CESI6)
  - 1) Explicit knowledge encapsulation using transferable artifacts.
  - 2) Planning of knowledge transferences mechanisms.
  - 3) Use tools to knowledge governance.
- Attitude (to be) (PO c, d, e, i) (CG5, CESI1, CESI6)
  - 1) Ability to generate new forms of knowledge encapsulation.
  - 2) Ability to design systems that allow greater accessibility to knowledge
  - 3) Concern for the preservation of knowledge to ensure its conservation and innovation.
  - 4) Leadership and coordination
  - 5) Empathy, proactivity and communication capability

**DESCRIPTION OF CONTENTS: PROGRAMME**

Main topics associated are:

Importance of knowledge management for informatics engineers, concepts about knowledge management, knowledge management mechanism, institutional levels of knowledge management, knowledge management at a strategic level focused on strategic management processes of engineering, knowledge management of management processes of engineering, knowledge management of engineering products at a operative level.

Detailed Program is presented below:

- 1) General concepts about knowledge governance.
- 2) Organizational knowledge governance
- 3) Learning organizations
- 4) Knowledge governance competencies for the informatics engineers
- 5) Leadership and coordination

- 6) Change management
- 7) Organizational competences model for knowledge governance
- 8) Knowledge elicitation
- 9) Knowledge reuse: mechanisms and support technologies.
- 10) Knowledge assets valuation
- 11) Integration of the knowledge governance in the productive process
- 12) Knowledge governance management
- 13) Knowledge management at a strategic level to support engineering activities.
- 14) Knowledge management at a management level to support engineering activities.
- 15) Knowledge management at an operative level to support product engineering activities.
- 16) Information technology for transactive memory systems in learning organizations

#### LEARNING ACTIVITIES AND METHODOLOGY

- 1) Lectures: 1 ECTS, to get the specific cognitive competences of the subject (PO a, b, c)
- 2) Practices: 1 ECTS, to get the specific instrumental and generic competences, as well as the attitude competences of the subject, such as team work, ability to put in practice the acquired knowledge, ability to plan, analyse and synthesize. Practices also are intended to develop the attitude competencies. The practice consists on a practical example of a real problem of knowledge management (PO a, b, c, d, e, k, g) (CG5, CESI1, CESI6)
- 3) Academic Work
  - a. With professor assistance: 1,5 ECTS. This work consists on conducting a project where students have to develop a knowledge management solution for a fictional institution by focusing on a specific aspect of the course. (PO a, b, c, d, e, k, g) (CG5, CESI1, CESI6)
  - b. Academic Work without professor assistance: 2 ECTS. Exercises and complementary readings. (PO a, b, c, d, e, k, g) (CG5, CESI1, CESI6)
- 4) Exam: 0,5 ECTS. The exam is intended to compliment the development of the instrumental and cognitive competencies. (PO a, c, i, h) (CG5, CESI1, CESI6)

#### ASSESSMENT SYSTEM

Practices and exams are intended to encourage learning as well as to facilitate students assessment. The assessment system includes academic activities and practices evaluation using the following criteria:

- ¿ Exam (only if a student follows the continuous evaluation): 10% (PO a, c, i, h)
- ¿ Practices: 90% (PO a, b, c, d, e, k, g)
  - o With professor assistance: 45%
  - o Without professor assistance: 45%

**% end-of-term-examination:** 10

**% of continuous assessment (assignments, laboratory, practicals...):** 90

#### BASIC BIBLIOGRAPHY

- Liebowitz J. Knowledge Management. Learning from Knowledge Engineering, CRC Press, 2001
- Schreiber et al Knowledge Engineering and Management: The CommonKADS Methodology, The MIT Press, 2000

#### ADDITIONAL BIBLIOGRAPHY

- Bransford, J.D; Brown, A.L.; Cocking, R.R. editors How people learn: brain, mind, experience and school, National Academy Press, 1999
- Davenport & Prusak Working Knowledge: How organizations manage what they know, Harvard Business School Press, 1998
- Nonaka & Takeuchi The Knowledge-Creating Company, Oxford University Press, 1995
- Schwartz D. et al Internet-Based Organizational Memory and Knowledge Management, Idea Group Publishing, 2000
- Stewart, Thomas A Intellectual capital: the new wealth of organizations, Doubleday, 1997