Organizational knowledge management

Academic Year: (2020 / 2021) **Review date: 06-07-2020**

Department assigned to the subject: Computer Science and Engineering Department

Coordinating teacher: SANCHEZ SEGURA, MARIA ISABEL

Type: Electives ECTS Credits : 6.0

Year : 4 Semester :

OBJECTIVES

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) Software Economics Area
4) Process Assets Engineering for the proposal of more sustainable software development projects
5) Knowledge elicitation techniques
6) Integration of the knowledge governance in the productive process
7) Knowledge governance management
8) Knowledge management at a strategic level to support software engineering activities.
9) Knowledge management at a management level to support software engineering activities.
10) 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) Business Intelligence

- 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

The detailed programme is as follows:

1- The context of the digital society. Current state of the business digitalization process.
2- The role of the computer engineer in the process of business digitalization.
3- The organizational knowledge governance as a tool to avoid the risk of failure in the business digitalization process.
4- General concepts on organizational knowledge governance
5- Mechanisms and processes to support organizational knowledge governance
6- Knowledge elicitation techniques
7- Supporting technologies - business intelligence
8- Models for assessing the level of maturity of organizational knowledge governance
9- Concepts of intellectual capital
9- Knowledge asset valuation models
10- Application case in a real project.

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 synthetize. 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 ecourage 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 continious 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 (assigments, laboratory, practicals…):	90

BASIC BIBLIOGRAPHY

- Barry Boehm Software Enginering, IEEE Computer Society, 2007
- 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

BASIC ELECTRONIC RESOURCES

- BARRY W. BOEHM . Software Engineering Economics: http://csse.usc.edu/TECHRPTS/1984/usccse84-500/usccse84-500s.pdf
- Luis Artola . Software Economics: Abstractions: http://2016.pamplonaswcraft.com/luis-artola/
- RICH MIRONOV . Talk: Four Laws of Software Economics : http://www.mironov.com/bos/
- SWEBOK: software engineering body of knowledge . Chapter 12: Software Engineering Economics: http://swebokwiki.org/Chapter_12:_Software_Engineering_Economics