Academic Year/course: 2022/23

68951 - Complementary Training in Information and Comunications Technology

Syllabus Information

Academic Year: 2022/23

Subject: 68951 - Complementary Training in Information and Comunications Technology

Faculty / School: 326 - Escuela Universitaria Politécnica de Teruel

Degree: 614 - Master's in Innovation and Entrepreneurship in Health and Wellbeing Technologies

ECTS: 6.0

Year: 1

Semester: First semester

Subject Type: ENG/Complementos de Formación

Module:

1. General information

1.1. Aims of the course

This course provides the students with the suitable additional training needed for those who aim to study this Master's Degree without a previous formation in Information and Communications Technologies. The main goal of the course is that the students achieve the suitable level of competences in the fields of programming, computer networks and computer-human interaction, all of them competences that will be needed in other courser of this Master's Degree.

These approaches and objectives are aligned with some of the Sustainable Development Goals, SDG, of the 2030 Agenda (https://www.un.org/sustainabledevelopment/es/) and certain specific goals, in such a way that the acquisition of the Learning outcomes of the subject provides training and competence to the student to contribute to a certain extent to their achievement:

? Goal 3: Ensure healthy lives and promote well-being for all at all ages.

Target 3.4 By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being.

Target 3.d Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks.

? Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.

Target 4.4 By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship.

? Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.

Target 8.6 By 2020, substantially reduce the proportion of youth not in employment, education or training.

? Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.

Target 9.5 Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending.

1.2. Context and importance of this course in the degree

The Complementary Training in Information and Comunications Technology is one of the two course of complementary training than can be found in this Master's Degree, together with the one about industrial technologies. In both cases, the idea is to complement the previous formation of the student so that he/she starts with the competences needed in the remaining courses of the study.

1.3. Recommendations to take this course

There are not previous requirements for taking this course, as this is a course of complementary training for those students without a previous base on Information and Communications Technologies.

2. Learning goals

2.1. Competences

After passing the course, the student will be more competent for...

- Acquiring and understanding knowledge that provides a basis for being original in the development and/or application of ideas, specially in a research context.

- Applying the new knowledge acquired and the ability for solving problems in new environments framed into wider (or multidisciplinary) contexts related with the area of study.

- Having learning abilities for keeping on studying in an autonomous way.

- Understanding and connecting the basic foundings of Information and Communications Technologies related to programming, networks and interfaces.

2.2. Learning goals

The student will have to show the following skills in order to pass the course...

- He/she develops middle-sized programs in a modular or object-oriented way, providing them with robustness.

- He/she develops correct recursive and iterative algorithms.

- He/she develops object-oriented programs that incorporate graphical user interfaces, handle events or may access databases or distributed resources.

- He/she knows and applies the features, functionality and structure of computer networks and the Internet.

- He/she knows the relationship between the computer and the interaction and peripherals for the interaction.

- He/she knows models, paradigms and techniques for prototyping interfaces, and techniques of design and evaluation in Human-Computer Interaction.

- He/she knows specific and advanced interfaces and interfaces for mobile environments.

- He/she knows about the different user-centered methodologies for the development, evaluation and management of applications and systems that guarantee accesibility and usability.

2.3. Importance of learning goals

Regarding the goals referred to programming, this is a basical aspect, not only for a Computing professional, but for potentially any professional that will work with computerized systems. Regarding the part about networks, any professional of the technological area must know the basical features of communication networks. Lastly, regarding human-computer interaction, health is such a person-centered discipline that professional that work on it must pay a special attention on how to deal with people.

3. Assessment (1st and 2nd call)

3.1. Assessment tasks (description of tasks, marking system and assessment criteria)

The student will have to prove that he/she has achieved the learning goals by means of the following tasks:

The marks of the both calls of the course will be calculated in the following way:

- Assignments (60% of the final mark). During the course, some assignments will have to be carried out by the students. If they do not fulfill all of them, then the student will have to carry out a practical exam to pass this part of the course.

- Exam (40% of the final mark). It is a theoretical-practical exam about the whole course. It will be need to obtain a mark of 4 to pass the course. If the mark is lower than 4, then the final mark of the course will be the minimum between the weighted average of the two parts and the mark of the exam.

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

The methodology followed in this course is oriented towards the achievement of the learning objectives. It is based on participation and the active role of the student favors the development of communication and decision-making skills. A wide range of teaching and learning tasks are implemented, such as lectures, assignments, autonomous work, and virtual tutorials.

Students are expected to participate actively in the class throughout the semester.

Classroom materials will be available via Moodle. These include a repository of the lecture notes used in class, the course syllabus, as well as other course-specific learning materials, including a discussion forum.

4.2. Learning tasks

- Lectures: The teacher explains the course contents and solves representative applied problems.

- Assignments. Students will complete assignments, problems and exercises related to concepts seen in lectures. Assignments will be submitted so as to be discussed and analyzed.

- Autonomous work. Students are expected to study theory, solve problems, prepare sessions, and take exams.

- Virtual tutorials. Teacher?s office hours allow students to solve questions and discuss unclear course contents. It is advisable to come with clear and specific questions.

4.3. Syllabus

- Object-oriented programming.

- Network architecture and protocols.

- Human-computer interaction: paradigms and peripherals.

- Accesibility and system adaptation.

4.4. Course planning and calendar

Further information concerning the timetable, classroom, office hours, assessment dates and other details regarding this course will be provided on the first day of class or please refer to the EUPT website (http://eupt.unizar.es)

4.5. Bibliography and recommended resources

http://psfunizar10.unizar.es/br13/egAsignaturas.php?codigo=68951