Subject

Data in Healthcare Industry I

Year: 3 **Credits**: 3 ECTS **Language**: Spanish

Competencies

Core competences:

CB1. Students have demonstrated knowledge and understanding in an area of study that builds on the foundation of general secondary education and is usually at a level that, while relying on advanced textbooks, also includes certain elements involving cutting-edge knowledge in their field of study

General competences:

CG2. Curiosity and empathy

Specific competences:

CE1. Understand, know and apply the theories, tools and processes for capturing data sources from different types of data sources and for data warehousing.

CE5. Have and demonstrate a very deep insight into the areas of organisational management, thereby understanding the implications of data management in the various organisational domains.

Learning outcomes

RA2. Ability to ask questions, and to empathise with the problems and concerns of the people around them. This ability to listen enables the person to detect opportunities and identify the problems to be solved.

RA7. Understand, know and apply the theories, tools and processes for capturing data sources of a different type.

RA12. Have and demonstrate a very deep insight into the areas of organisational management, thereby understanding the implications of data management in the various organisational domains.

Syllabus

Image processing techniques

- Image enhancement
- Image segmentation and feature extraction

Feature transformation and predictive model building Convolutional Neural Networks
- Image feature extraction
- Transfer learning
- Predictive model building

Training activities

The training activities planned for this module are the following:

- Challenge-based learning (2 ECTS)
- Teamwork (0.25 ECTS)
- Case methodology (0.75 ECTS)

Assessment system

Assessment will be by means of the continuous assessment system, providing constant feedback to both teachers and students on the learning process throughout the academic period:

- Learning activities involving the presentation of knowledge and individual study may be assessed by means of oral and/or written tests, which will account for a maximum of 60% of the final mark.
- The training activities aimed at acquiring the practical skills of the subjects will be assessed through the completion of various activities (assignments, case studies, challenges, etc.) accounting for at least 40% of the final mark.

Details of the assessment and marking will be made explicit in the annual academic planning of the subjects, in accordance with the teachers responsible and the determining factors of

each course.

Bibliography

- Gonzalez, R.C., & Woods, R.E. (2008). Digital Image Processing. Pearson Prentice Hall
- Rangayyan, R. M. (2004). Biomedical image analysis. CRC press
- Michelucci, U. (2019). Advanced Applied Deep Learning: Convolutional Neural Networks and Object Detection. Apress.
- Le, L.; Wang, X.; Carneiro., G; Yang, L. (2019). Deep Learning and Convolutional Neural Networks for Medical Imaging and Clinical Informatics. Springer.