# uc3m Universidad Carlos III de Madrid

# Process engineering and management of hospital services

Academic Year: ( 2023 / 2024 ) Review date: 30-03-2023

Department assigned to the subject: Bioengineering Department

Coordinating teacher: ABELLA GARCIA, MONICA

Type: Compulsory ECTS Credits: 6.0

Year: 1 Semester: 2

# REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

No recommendations.

#### **OBJECTIVES**

The concepts exposed in this subject will give a global vision of the structural and administrative organization of the general services management of a hospital center, emphasizing on the figure and role of the general services manager. In addition, they will acquire the necessary knowledge about the different management systems that allow the efficient management of processes in the healthcare environment, an aspect in which the engineer will contribute significantly to the improvement of the healthcare system.

# COMPETENCES THAT THE STUDENT ACQUIRES WITH THIS SUBJECT

CB6. Possess knowledge that provides a base or opportunity to be original in the development and / or application of ideas

CB7. That students know how to apply the knowledge acquired and their ability to solve problems in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their area of study.

CB8. That students are able to integrate knowledge and face the complexity of formulating judgments based on information that, being incomplete or limited, includes reflections on social and ethical responsibilities linked to the application of their knowledge and judgments.

CB10. That the students possess the learning skills that allow them to continue studying in a way that will be largely autonomous.

CG3. Ability to design and carry out technological projects in the field of the application of engineering to medicine, as well as to analyze and interpret their results.

CG4. Ability to evaluate medical equipment and instrumentation in complex multidisciplinary environments, assessing the needs of different clinical users and offering objective measures for decision making.

CE2. Ability to understand and use the statistical methods necessary for conducting scientific studies, evaluation of equipment from the point of view of effectiveness, accreditation for medical use or study of comparative effects in patients.

CE3. Advanced knowledge of health technology management, both in technical and economic aspects, and including the acquisition and maintenance thereof.

In overcoming this subject, students should be able to:

- Know the historical evolution, main characteristics, organization, financing and fundamental legislation of the Spanish health system.
- Know the organizational structure, as well as the areas of competence of the Management Department of a hospital.
- Know the organizational structure, as well as the areas of competence of the Directorate of Management, infrastructures and general services in primary care.
- Know the different contracting procedures that exist in hospitals for the provision of infrastructures, services and equipment.
- Know the competences and action plans presented by a security service in a hospital.
- Acquire tools to be able to optimize work, improve results and apply continuous improvement in the processes of a company and thus offer added value and know its applicability in the electromedicine

#### sector.

- Acquire tools for the structuring, standardization and improvement of processes and know their applicability in the health sector.

#### DESCRIPTION OF CONTENTS: PROGRAMME

The subject content includes:

- Management of general hospital services.
- Directorate of general services and engineering of a hospital.
- Directorate of general services and engineering in primary care.
- Health management.
- Contract law.
- Hospital security and surveillance.
- Lean methodology.
- Redesign and improvement of processes.

### LEARNING ACTIVITIES AND METHODOLOGY

### LEARNING ACTIVITIES

- Theoretical class.
- Theoretical-practical class.
- Seminars and practical visits.
- Tutorials.
- Individual and team work.

# **TEACHING METHODOLOGIES**

- Exhibitions in the teacher's class with support of computer and audiovisual media, in which the main concepts of the subject are developed and the bibliography is provided to complement the students' learning.
- Resolution of practical cases, problems, etc. raised by the teacher individually or in groups.
- Exhibition and discussion in class, under the teacher's moderation of topics related to the content of

subject, as well as practical cases.

- Preparation of papers and reports individually or in groups.

# ASSESSMENT SYSTEM

Continuous assessment: 50%

- The continuous evaluation will represent 50% of the final score. For this, all the requested works must be submitted and have at least a score of 5.0 out of 10.0 in each of them.
- It will consist of carrying out individual assignments, problems and / or practical activities.
- Participation in class and Aula Global will be taken into account: includes participation during seminars, in the Aula Global forum, attitude in class, exercises in class (to be solved in groups or individually), or other activities.

Final exam: 50%

- The final exam will cover the entire syllabus and will represent 50% of the final score. The minimum score in the final exam to pass the course is 5.0 out of 10.0, regardless of the grade obtained in the continuous assessment.

# Extraordinary call:

- The final grade for students who attend the extraordinary call may be:
- (1) 50% of the extraordinary exam and 50% of the continuous evaluation, with the option of improving the grade of the latter by a new submission of the continuous evaluation activities.
- (2) 100% of the extraordinary exam.

% end-of-term-examination: 50

% of continuous assessment (assignments, laboratory, practicals...): 50

# **BASIC BIBLIOGRAPHY**

- J L Temes Montes; Vicente Pastor y Aldeguer; Jose Luis Diaz Fernandez Manual de Gestión Hospitalaria, MCGrawHill, 1997
- José Luis Temes Montes, Mercedes Mengíbar Torres Gestión hospitalaria, 5e, MCGrawHill, 2002

# **BASIC ELECTRONIC RESOURCES**

- Asociación Española de Hostelería Hospitalaria . AEHH: http://www.hosteleriahospitalaria.org
- Asociación Española de Ingeniería Hospitalaria . AEIH: http://www.aeih.org