Process engineering and management of hospital services

Academic Year: (2019 / 2020) **Review date: 07/05/2020 22:57:23**

Department assigned to the subject: Bioengineering and Aeroespace Engineering 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

Specific competences:
- 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.

Basic or general competences:
- 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.

To overcome this subject, students should be able to:
- Locate the clinical services within the hospital organization, as well as the active non-implantable medical devices in each of them, describing the structure of the Spanish health system.
- Characterize the clinical electromedical service of a hospital / health institution and its relationship with technical assistance services, recognizing the importance and repercussion of its proper management.

DESCRIPTION OF CONTENTS: PROGRAMME

1. Management of general and hospital services
1.1. Introduction to management and general services management
1.1.1. The organization chart of the management and its competencies
1.2. General hospital services
1.2.1. Cleaning
1.2.2. Laundry
1.2.3. Kitchen
1.3. Operations management and hospital processes

1.3.1. Logistic flows
1.3.2. Study of processes and capabilities
1.3.3. Consumption optimization
1.4. Hospital financial economic information
1.4.1. The hospital budget
1.4.2. Economic, consumption and management indicators
1.4.3. Dashboards

2. LEAN tools
2.1. Analysis of VALUE
2.2. Identification of Waste
2.3. Lean indicators
2.4. Map of the Value Stream
2.5. The 5S's
2.6. Maintenance management
2.7. Logistics Lean
2.7.1. Kanban

3. Ergonomics and organization in the workplace

4. Project management
4.1. Planning and organization of a project
4.2. Project execution
4.3. Monitoring and monitoring of the project
4.4. Project closure Improvement and action plan

5. Direction of general services and engineering of a hospital
5.1. The healthcare company in the process of change
5.2. Specific management in health centers
5.2.1. Hospital, typologies and structures
5.2.2. Health centers
5.2.3. Home hospitalization
5.2.4. Other health centers and services
5.3. Health service research

6. Regulations applied to medical devices

7. Law of contracts
7.1. Type of contract and features
7.2. Structure of a tender for the need to publish sheets
7.3. Content of the administrative sheet. Requirements and criteria
7.4. Content of the technical specifications and description of the service
7.5. The award and improvement of the offer
7.6. The follow-up of the contract. Penalties

8. Human resources management and selection
8.1. Address of people
8.1.1. Management of human resources at present
8.1.2. Internal and external analysis
8.1.3. Strategy, function and human resources techniques
8.2. Human behavior
8.2.1. Indicators of behavior and human resources management
8.2.2. Motivation and job satisfaction
8.2.3. Leadership, teamwork and communication
8.3. Working conditions and human behavior
8.3.1. The work day
8.3.2. The content of the jobs
8.3.3. Redesign of jobs

9. Selection processes
9.1. Analysis and evaluation of jobs
9.2. Recruitment and selection of people

9.3. Performance evaluation

10. Security and hospital surveillance
10.1. Hospital general overview
10.2. The hospital company. Generalities
10.3. Hospital safety
10.3.1. Security against catastrophes
10.3.2. External catastrophes
10.3.3. Internal catastrophes
10.3.4. Resources
10.3.5. Internal security
10.3.6. Waste management
10.4. Fire protection
10.4.1. Legislation
10.4.2. Definitions
10.4.3. Fire control
10.4.4. Development of a fire
10.4.5. PCI installations
10.4.6. Types of PCI installations
10.4.7. Passive protection
10.4.8. Fireproof treatment
10.4.9. Structural protection
10.4.10. Compartmentalization
10.4.11. Smoke control systems
10.4.12. Luminescent signaling
10.4.13. Active protection
10.4.14. Detection facilities
10.4.15. Automatic detection facilities
10.4.16. Alarm installations
10.4.17. Manual alarm systems
10.4.18. Alarm communication systems
10.4.19. Extinguishing facilities
10.4.20. Fire extinguishers
10.4.20.1. Maintenance of fire extinguishers
10.4.20.2. Classification of fire extinguishers
10.4.20.3. Use of fire extinguishers
10.4.21. Fixed extinguishing installations
10.4.22. Dry column
10.4.23. Equipped fire hydrants
10.4.24. External hydrant systems
10.4.25. Sprinkler network
10.4.26. Extinction systems
10.4.27. Extinction of gaseous agents
10.4.28. Water supply system
10.4.29. Extinction techniques

LEARNING ACTIVITIES AND METHODOLOGY

The formative activities of the subject are:

AF1. Theorical class
AF3. Theoretical-practical class
AF5. Tutorials
AF6. Team work
AF7. Individual work of the student

The teaching methodologies that will be used will be:

MD1 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.

MD2. Critical reading of texts recommended by the teacher of the subject: Press articles, reports, manuals and / or academic articles, either for further discussion in class, or to expand and consolidate the knowledge of the subject.
MD3. Resolution of practical cases, problems, etc. raised by the teacher individually or in groups.
MD4. Exhibition and discussion in class, under the teacher's moderation of topics related to the content of the subject, as well as practical cases.
MD5. Preparation of papers and reports individually or in groups.

Development and justification:

- Theoretical academic sessions: as a means of offering a general and systematic view of the topics, highlighting the most important aspects of them and interspersing exercises between theoretical explanations when deemed appropriate. These theoretical sessions will be taught regularly at the beginning of each topic.
- Practical academic sessions: Calculation and analysis of practical cases, in correlation with the theoretical concepts taught.
- Seminars: Exhibition and debate of proposed works, organized in seminars, in which the skills of group work, exhibition, defense and discussion of a topic or work are practiced.

ASSESSMENT SYSTEM

% end-of-term-examination/test:	50
% of continuous assessment (assigments, laboratory, practicals…):	50

The continuous evaluation is 50% of the final score of the subject and includes:
1) Tutored work: It will be evaluated through a report that will be delivered to AulaGlobal on the dates indicated at the beginning of the course.
2) Participation in class and Global Classroom: Includes participation during seminars, in the Global Classroom forum, attitude in class, or other activities.

The final exam will cover the entire syllabus consisting of the interpretation of a series of theoretical questions and the resolution of a certain number of problems and will represent 50% of the final score. The minimum score in the final exam to pass the subject is 4.0 out of 10, regardless of the grade obtained in the continuous assessment.