

3rd Year Medical Equipment Class Projects 2008-2009

Consider the following medical devices:

1. Patient monitor
2. Ventilator
3. Hemodialysis machine
4. DC shock defibrillator
5. Heart lung machine
6. Electrosurgical unit (ESU)
7. Pacemaker
8. Ultrasound imaging
9. Fetal Doppler
10. X-ray imaging
11. Computed tomography (CT)
12. Positron emission tomography (PET)
13. Magnetic resonance imaging (MRI)
14. Lithotripsy
15. Gamma knife
16. Radiotherapy dose planning
17. Radiation oncology dosimetry
18. Hearing aid
19. Bone mineral densitometry (BMD)
20. Steam sterilizer

1. Describe clearly the theory of operation of each. The expected number of pages per device is around two pages in English. Also, provide a summary of the theory of operation for each device in one page in Arabic.
2. Describe in one page their operation in clinical use (i.e., how the clinician uses them).
3. After a site visit, provide your comments about the problems facing the use and maintenance of each of these devices in the actual local environment in the site you visited (approximate length: 1 page).
4. Provide your comments about the technology used in each and your possible suggestions / innovations in their respective areas (approximate length: 1 page).

Important Notes:

1. You are required to submit this project in two parts: the first is due December 15, 2008, while the second part is due April 15, 2009. You can divide the list of equipment between these two parts as you prefer (the two parts must cover all of them).
2. Each part will amount to 8 points in your term grade.
3. Number of students in the group should include around 10 students and with a maximum of 15. The groups are expected to stay the same in both first and second terms.
4. You are required to submit the project in electronic format (on a CD). The project output should include a report and a 20 minute presentation for each group to be given during the oral examination of the group. No modifications to the report or the presentation will be allowed after the deadline.
5. You must use your own words in the report with clear reference citation. "Copy-Paste" items will not be accepted.
6. Plagiarism will not be tolerated and will result in a failing grade in this course for all members of the project group.