

EE 370 Class Project Statement

Consider **ONLY FIVE** of the following medical devices:

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|---------------------------------|------------------------|
| 1. Patient monitor | 8. Ultrasound imaging |
| 2. Ventilator | 9. Fetal Doppler |
| 3. Hemodialysis machine | 10. Hearing aid |
| 4. Defibrillator | 11. X-ray imaging |
| 5. Electrosurgical unit (ESU) | 12. Steam sterilizer |
| 6. Surgical lasers | 13. Anesthesia machine |
| 7. Electroencephalography (EEG) | 14. Infusion pump |

- Describe briefly the theory of operation of each in English. *(1 page each device – 10%)*
- Describe in one page their operation in clinical use (i.e., how the healthcare personnel use them). *(1 page each device – 10%)*
- Based on a site visit, provide specific comments about the requirements of the installation, operation and maintenance of each of these devices in the actual local environment in the site you visited and the problems. *(2 pages each device – 20%)*
- Provide your comments about the roles of the biomedical engineer in the installing, operating and maintaining each device and the background/training required for them to do that. *(2 pages each device – 30%)*
- Provide a list of the ethical issues faced by biomedical engineers related to their work on your chosen devices and in their work environment in general and how they are handled in practice. *(3 pages for all devices - 30%)*

Important Notes

- It is required to submit your team's project report and presentation by May 1, 2015. No late submissions will be accepted. Presentations will be scheduled shortly after this date.
- The project evaluation will amount to 20% of your term grade.
- Number of students in the group should be around 5 students. Be advised that all project teams will be graded the same regardless of how many students are on them.
- All students in the same group will receive the same grade. It is your responsibility to work as a group to get the best grade for all of you.
- You are required to submit the project in electronic format only (i.e., by electronic mail to instructor – no hardcopies will be needed or accepted). The project output should include a report in PDF format and a one-hour presentation for each group. No additions or modifications to the report or the presentation will be allowed after the deadline.
- You must use your own words in the report with clear reference citation. "Copy-Paste" items without references will not be accepted and will be considered as plagiarism. Plagiarism/cheating in a major ethical violation that may result in a failing grade for the offending project group. Please refer to this [web site](#) for more information on plagiarism.