Universidad Nacional de Colombia
Engineering Faculty
Electric and Electronics Engineering Department

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Transmission Lines and Antennas, 2012-1
Written report 1
Bogotá, D.C., March 19, 2012

Specifications and grading

Successful completion of this activity requires the students to present a written report on a relevant technique in applied electromagnetism not covered in the course that:

1. Justifies the importance of the technique (15%).
2. Explains with clarity and scientific rigor the basics of the technique (30%).
3. Discusses practical aspects of the technique such as (when applicable) (20%):
   - Device implementation.
   - Processing Algorithms.
   - Results of application.
4. Is based on authoritative and up to date sources (15%).
5. Follows the formatting guidelines and uses formal language (20%).

Formatting guidelines

This report must have the official format of the IEEE Transactions, there are templates available in LaTeX and MS-Word in this link (select "template for all Transactions"):

`http://www.ieee.org/publications_standards/publications/authors/authors_journals.html`

The final report must include these sections (feel free to change title names but i):

- Abstract: One-paragraph description of what the report presents.
- Justification of the relevance of the technique.
- Technical Description of the Technique.
- Application Results including graphics/plots/tables as required.
- References

The report is limited to an extent of five pages, additional pages will not be considered.

Proposed schedule

T0 is the time at which this project guide is presented to students.

1. T0 + 1 week: Selection of sources.
2. T0 + 3 weeks: Study of the material and elaboration of the first draft.
3. T0 + 4 weeks: Delivery of final report (Monday April 16, 2012).

Proposed Topics

The first report will deal with applications of electromagnetism in medical imaging. The following are possible topics, any other requires previous approval by the Professor:

- fMRI (Functional Magnetic Resonance Imaging)
- dMR (Diffusion MRI)
- CT (Computed Tomography (x-ray based))
- EEG (Electroencephalography)
- MEG (Magnetoencephalography)
- PET (Positron emission tomography)
- DOI (Diffusive optical imaging)

Please note that every student *must* choose a different topic.