Teaching Ethics to Engineering Students: Case Studies

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Abstract:
Two case studies are presented and discussed as a means of implementing the teaching of ethics in two different contexts of engineering activity: scientific research and daily practice. One case study is related to the discipline of “Research Methodologies” for students of MSc and PhD degrees in the Initiative “Energy for Sustainability” (EfS) at the University of Coimbra, Portugal. The second case study presented is related to the discipline of Construction Management of a master degree in Civil Engineering. The methodology applied during the teaching component comprises the description of Deontology and of Ethics. Professional engineering standards and practices are also presented and discussed. Problems with issues involving ethical decisions in construction management are described. Students are invited to discuss and to present their points of view. Groups are formed and discussions about conclusions of the group and global debates take place. Disagreements or agreements are presented by each one supported by a rationale. Students are then faced with a methodology to support decision making in situations with an ethical essence. The methodology does not present a unique solution but addresses the ethical problem under three perspectives. The perspectives for ethical analysis are called reversibility, disclosure and impact.

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