SINOPSIS

TÍTULO

Project-Based Learning in the Master’s degree in Nuclear Engineering at BarcelonaTECH. Experience gained in the area of Management of Nuclear Power Plants.

Autores / Empresa:
F. Reventós, E. Vives, A. Brunet, R. Sabaté, F. Calviño, and L. Batet
1 BarcelonaTECH. Departament of Physics and Nuclear Engineering
2 BarcelonaTECH. Institute of Energy Technologies
3 Westinghouse
4 Sociedad Nuclear Española

TEXTO

From its first edition, that took place in 2011-2012, the Master’s degree in Nuclear Engineering from BarcelonaTECH has been using techniques of Project-Based Learning to fulfill the purpose of training nuclear engineers with a profile suitable for positions in the industry. The Master is sponsored by ENDESA and relies on the collaboration with institutions and companies. The Master is embedded in EMINE, the European Master in Innovation in Nuclear Energy, supported by KIC-InnoEnergy and the European Institute of Technology.

The present paper summarizes the experience gained in applying these learning techniques to the management of Nuclear Power Plants, and the suitability of the method in fulfilling both its technology and educational goals. Two sample projects are described along with the learning outcomes resulting from the application of the methodology in this context.

Project Based Learning provides a valuable framework for the development of future nuclear engineers when properly supported by other more classical training tools, all of them applied jointly by selected industry specialists and academic staff. Among the selected projects, a "Feasibility study of plant power up-rating" (transversal project) and a "Design of a portable system to support the operation in Station Blackout scenarios" (engineering project integrated in the course of Management of Nuclear Power Plants) are presented in the paper.

Both projects are very topical and are developed by students in synchronization with the progress of theoretical sessions and with the information searches carried out by the students themselves. A feedback/tracking session is fundamental and stimulates the progress of the work.

The quality of the engineering results is satisfactory and aligned with the effort invested by students and instructors.

- La sinopsis debe estar en formato word y el texto un máximo de 300 palabras.
- (*) Párrafo introductorio indicando el contexto en el que se realiza el trabajo objeto de la ponencia y enfatizando la importancia del área en que se desarrolla. (4-6 líneas)

- (**) Párrafo indicando el objetivo y alcance del trabajo, el valor añadido al estado previo de la cuestión y la metodología y/o aproximación utilizada en su desarrollo. (4-6 líneas)

- (***) Párrafo conteniendo la síntesis de los resultados obtenidos y la conclusión global del trabajo. (8 -12 líneas)