

USING MODERN ENGINEERING PROFESSIONAL SOFTWARE TO DEVELOP GLOBAL COMPETENCY TO ELECTRIC POWER ENGINEERING STUDENTS

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Abstract

The world is changing significantly, and it is becoming increasingly globalised. This means that countries, businesses, and professionals must think and act globally to be successful. To address this need, higher education institutions are looking for ways to instill these skills in their students.

The engineering education at Polytechnic University has adopted the Bologna' model of the three years Bachelor degree and Master degree which include at least one year (usually three semesters) of professional preparation (MP-EPSE) or two years of scientific one (MS-EPSE). The Master degrees of Electric Power System Engineering (EPSE) are the course-based programs designed to prepare a master student to succeed and advance rapidly in today's competitive technical marketplace. These programs have strong components in laboratory experiments and in the use of computers throughout the curricula.

Power systems analysis can be carried out through an accurate modeling of electric network elements is required. The applicative software's are widely and successfully used by operators during power systems planning and operation.

Graduates of the MS-EPSE Program are expected to have an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice, including familiarity with computer programming and information technology. This is accomplished throughout the course of Power System Platforms For Steady State and Transients Calculations to which the students are presented and work with two professional Software, ATP and NEPLAN. ATP is a software for simulation of transient phenomena of electromagnetic and electromechanical nature. NEPLAN is a software tool to analyze, plan, optimize and simulate networks.

This paper describes how the course was designed and the competences gain by the graduates of the MS-EPSE Program during the learning process and also diploma thesis, as well as discusses specific research results regarding how modern engineering professional software like ATP and NEPLAN support students in gaining the global competency skills required to actively participating in today's international workforce.

Keywords: *Engineering education research, ATP Software, NEPLAN Software, Master degree, Electric Power System Engineering, global competency.*