Harmonizing Civil Engineering Education in Global Scale

Stanisław Majewski, Poland*

Uniformity never will be the objective of education, yet some level of compatibility can be useful or even indispensable. Though academic teachers are rather attached to the idea of University autonomy and freedom than to any forms of harmonization, some harmonization is necessary to assure readable and comparable professional degrees, as well as comparable criteria of quality assurance, irrespective of Country and University of graduation. At the stage of studies this should facilitate students' exchange. Unequivocal definition of particular professionals' knowledge, skills and attitudes is necessary from the employee's point of view. In the beginning of 21st century the question what should be taught must be put with regard to integration processes, which are observed in global range. This situation constrains new commitments to the sphere of engineering education. Present engineering education should be broader and more interdisciplinary directed, preserving its depth and high technical quality. In this paper I will concentrate my attention on the question what should be taught at Civil Engineering faculties. The answer for this question will be based on elaborations of European project on Studies and Recommendations on Core Curricula for Civil Engineering developed within the Thematic Network EUCEET** and documents of American Society of Civil Engineers (ASCE). Some accomplishments of E4*** project will be considered as well.

The American Society of Civil Engineers (ASCE) formed in 2001 the Body of Knowledge (BOK) Committee and its charge included defining the BOK for Civil Engineering education. The BOK Committee presented its recommendations arranged by three themes: 1) what should be taught to and learned by civil engineering students; 2) how should it be taught and learned; and 3) who should teach and learn it. The recommendations were determined in terms of outcomes of education. In the present paper the special attention will be given to the first point.

Four recommendations of the Bologna Declaration convened in June 1999 by the European Ministers of Education correspond with the wide survey of the European education state in the end of the twentieth century. This survey revealed extreme complexity and diversity of curricular and degree structures in European countries. These recommendations not only create a good basis to build the European Area of Higher Education, but also can be useful in wider, global scope.

The question "what should be taught?" can be asked in terms of subjects and their syllabi as well. So this problem is been solved within the Thematic Network EUCEET. The specific project "Studies and Recommendations on Core-Curricula for Civil Engineering " was launched. So far the list of 25 core subjects was determined, credit points were assigned and frame syllabi determined to the core subjects.

The compilation of the Bologna Declaration, ASCE Body of Knowledge Committee recommendations and the results of EUCEET Core-Curricula Studies can create base to determine the rules of harmonization of Civil Engineering education in the global scale.

---

* DSc, PhD, CE, Structural Engineer, Professor at the Silesian University of Technology, Gliwice, Poland.

** European Civil Engineering Education and Training.

*** Enhancing European Engineering Education.