

UNDERGRADUATE HYDROLOGICAL-EDUCATION IN SUDAN

KHALID. A. FATTAH

Formerly Lecturer, Dept. of Civil Engineering, Sudan University of Science & Technology
(Tel: +249-9-12415151, Fax: +249-183-463391, e-mail: khdfattah@hotmail.com)

Abstract

In developing countries, Civil and Sanitary engineers are traditionally engaged in water resources studies and design, improving the efficiency of the designs on the studies of hydrological background. In recent year, new methods of assessment of surface water and ground water resources have been developed as well as more sophisticated tools for studying optimal water use have been created. Application of these specialized methods requires a training that is more specific than that normally offered in undergraduate engineering programmes. Therefore, there is an urgent need for professionals with hydrology basis as their main area of competence. The level of water resources planning and management must be as high as possible as a result of increase of population and the consequent water scarcity. In turn, this requires comprehensive hydrological information and newly adapted methodologies. However, the level of hydrological studies and the aims of their teaching are broadly varied. The extent of this variety basically depends on the system of education prevalent in the country, regardless of its industrial development. Training in hydrology is, obviously considered, an important contribution to economic and sustainable development. The diversity in the in educational programmes and systems for teaching hydrology follow the pattern of the existing facilities and the specific natural, economic, social and administrative conditions of the countries. The achievements of scientific research and the results of the international activities such as the international hydrological programme (IHP) have greatly influenced the development of the hydrological education. The educational career proposed by the IHP in the technical documents in hydrology classified the education into four different phases. These are basic studies, general studies with some specializations, specialized studies and postgraduate studies. In undergraduate studies, hydrology occurs either as an auxiliary subject, however compulsory, or as essential subject so that it is normally reflected in the name of the degree. In general, hydrological education in most of Sudanese universities has not been directed towards highly specialized undergraduate studies except in Sudan University of science and Technology. In particular, Hydrological education programmes, in Sudan University, offered by Civil Engineering Department and College of Water Sciences and Technology. In other universities, hydrological education is mainly given in the elective curricula type. Thus, civil, environmental and agricultural engineers, geologists and geographers are being familiarized with hydrological methods with out becoming specialists in the subject in undergraduate level. The present paper aims to broadly evaluate the education programme in civil engineering in of the Sudanese universities, in which water resources engineering is branched as a major specialization. The taught courses are classified and analyzed per contact hours conducted. The curricula of College of Water Sciences and Technology were also considered. Comparison with the curricula and syllabi for hydrology in university education, offered by International Hydrological Programme (IHP) of UNESCO 1993, is elaborated.

REFERENCES

- IHP Curricula and Syllabi for Hydrology in University Education, 1993, UNESCO, Paris.