

## **Innovative on Demand International Engineering Programs**

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Conference Topic: The Global Engineer

## **INTRODUCTION**

Following the new trends of higher education, COPEC International Institute of Education is offering courses in engineering that are customized not only for enterprises but also for groups of professionals or academia interested in acquiring special knowledge with a valid certification. The programs are dimensioned in accordance with the knowledge and practice that are necessary for the group of professional engineers or academia. They make the requirements and the program is designed to fit their needs. They are partially on class and some content is delivered on line as long as it comprises the amount of hours that are necessary to accomplish the program, focusing in the main goal that is to have a certified course of specialists in a certain field of expertise. The proposed program is an investment that guarantees return by the strategic vision for a successful performance, the higher management capacity and the growth of intellectual capital.

## **1 PROBLEM FORMULATION**

The world of today is a challenging environment in all aspects including educational. It is a fact that education is important once it provides men the tools that are necessary to act in a world of high technology and real time information availability. It is a scenario that was almost impossible to foresee not along ago. In times of high-speed communication and real time information, delivery information technology in its entire spectrum has become very important for companies and professionals. It is science that now provides the environment for new technologies application in educational community [1].

Following these new trends of higher education, the International Institute of Education is offering courses in engineering that are customized not only for enterprises but also for groups of professionals interested in acquiring special knowledge with a valid certification [2].

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## **2 UNIVERSITY FORMATION DISCUSSIONS**

For many years the discrepancy between what is learned at the university and what is actually required of graduates once they start work has been roundly criticized. This scenario persists and it is hard to find ways to solve this problem once technology has been developed in a very fast way contributing to the rapid obsolescence of work systems.

Doctoral program trains people in many important skills, but certainly not in all, because it is aimed at increasing scientific knowledge, while the areas of activity in a company are obviously different. No matter the field of expertise in engineering or whether it is an academic or company career, nowadays the professional needs to pursue constant knowledge updating [4].

A way to do so is the short programs offered by education institutions in classroom or on line, just to become aware of what is new and what can be applied in practice.

## **3 METHODOLOGY: INTERNATIONAL PROGRAMS TO ENHANCE CAREERS**

The international program designed by the engineering education research team of COPEC - Science and Education Research Council includes lectures with leading experts in the country in their areas, as they are professionals and teachers from the most reputable universities in the country. Classes are extremely dynamic and taught intensively with selected content and according to the latest educational theories and practices given the globalized market. All content will be available online for participants.

It is an international course and high quality professional development in Europe and it is a response to the growing demand for the challenges of the current context of the education institutions. This constitutes a great opportunity for professionals to expand their intellectual horizons and acquire valuable intellectual and intercultural skills in a learning environment.

The international program consists of an opportunity to take a "Plus " for the formation of professionals in engineering, providing an excellent course from the point of view of formation and a great experience in European educational and entrepreneur environment [5].

## **4 PROGRAM BRIEF DESCRIPTION**

The program has been designed for a multidisciplinary formation, introducing the site, know some European culture, touring to many politicians, academics environments and business units in different countries of Europe, developing technical activities, exploring the history and experiencing the local public services [6].

Participants will visit class organizations, typical European universities as well as businesses. The cultural part of the program includes guided tours, historic centers, museums, and other related activities.

The classes include lectures with leading experts in the country in their areas, as are professionals and teachers from the most reputable universities in the country. The proposed program consists of an opportunity to take a "Plus" for the formation of professionals in engineering, providing them an excellent course from the point of view of training and a great experience in European environment [7].

### **4.1 Engineering Program - Modular Schedule**

Bellow is an example of a program designed for a group of civil engineers, whose interest was to acquire knowledge on European style of civil engineering development not only in technical terms but also in terms of business administration.

The main aspect is the content that fits to the necessity of the group that will get the knowledge and the certification according to their requirements. All the networking that they are able to take on in Europe is also to be considered, which is a plus for their investment of time and financial resources [8].

*Table 1. European style of civil engineering*

MODULE 1	MODULE 2	MODULE 3
<b>Welcome Class and Program Content Presentation</b>	Aspects of Urban Rehabilitation	Public Policy in Global Scenario
<b>Threaten Social Network</b>	Modal Systems, European Model,	Organization and Process Management
<b>Use of technologies in the area of Business</b>	Strategic Urban Plans	Negotiation Strategies and Techniques
<b>Creativity and Entrepreneurship</b>	Relevant Aspects of New Renewable Energy	Strategic Negotiation
<b>Geopolitics and Sustainability in Business</b>	Urban Sustainability	Technology, Knowledge and Innovation
<b>Technology and Development: Cause or Consequence.</b>	Management of Environmental Issues Strategy.	Urban Sustainability.

## 5 PROGRAM OBJECTIVES

- improvement of professional skills
- understanding the role of agent of changes within the organization
- full development of analytical and critical thinking synthetic
- experience of different cultures
- strengthening Career Goals
- global Experience
- development of vision for new opportunities
- enrichment of working life
- aggregation of values.

## 6 OUTCOMES OF THE PROGRAM

At the end of the programs in the areas of engineering will have acquired:

- dynamism for career
- technical expertise and global knowledge
- experience of political and economic scenarios in different cultures and histories
- development of skills in tasks relating to planning, coordination, monitoring, implementation and evaluation of the actions undertaken by organizations
- valuing career [9].

## 7 FINAL DISCUSSIONS

In any field of knowledge the qualification of a professional must take into account not only technical and scientific formation, but also the development of other skills such as communication, teamwork and the awareness of "lifelong learning". When we consider effective education, it is important to have also in mind the knowledge of different cultures, because modern life has undergone a process that is known as globalization, which requires new professional performance which is defined as "global mind set and local action".

For over 12 years, the team of educational researchers of COPEC – Science and Education Research Council has been developing cutting-edge research in the area. Through its International Institute of International Education it is offering courses in Engineering field as well.

COPEC International Programs in Engineering are technical / cultural, international 10-day immersion programs offered to professionals seeking constant updating and learning technology. It has been a successful enterprise that is growing once it offers programs dimensioned to attend the necessities of professionals in engineering field in order to improve their careers as well as the constant updating in practice.

The programs are an investment that guarantees return because they provide updating, a more strategic view, a successful performance, greater management capacity, the growth of intellectual capital and a better preparation for future challenges.

This program is the result of a research developed by an international team in the field of engineering education targeting the formation of engineers for the next decade.

## 8 ACKNOWLEDGMENTS

This work is funded by FEDER funds through the Operational Program for Competitiveness Factors (COMPETE) and National Funds through FCT - Foundation for Science and Technology under the Project: FCOMP-01-0124-FEDER-022674 and PEst-C/CTM/UI0264/2013.

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