

## Evaluation of Spanish the *Ingeniero Técnico* in the UK Response to the Engineering Council UK report

### Background

The Engineering Council was requested to undertake an independent review of the Spanish pre-Bologna qualification *Ingeniero Técnico* to establish whether or not it is equivalent to the UK Bachelor of Engineering degree. UK NARIC has been asked by the Department of Business, Innovation and Skills to comment on the findings of the report and its impact on UK NARIC's current guidance towards the qualification.

### The Spanish education system

As a participating country in the Bologna Declaration, Spain has introduced changes to the structure of higher education in order to harmonise its education system with other member countries and thus contribute to the overall vision of creating the European Higher Education Area. The system of Spanish higher education was reformed through the following key legislation:

- Royal Decree 55/2005
- Royal Decree 1393/2007
- Royal Decree 861/2010.

As a result, the existing three-cycle structure of higher education was adapted to meet the requirements of the Bologna Process. The old, pre-Bologna structure of higher education consisted of the following qualifications:

- First cycle – *Diplomado, Arquitecto Técnico* and *Ingeniero Técnico*.
- Second cycle – *Licenciado, Ingeniero* and *Arquitecto*.
- Third cycle or *Doctorado* – *Doctor*.

The new structures now lead to the qualifications:

- First cycle – *Graduado*.
- Second cycle – *Máster*.
- Third cycle – *Doctor*.

The two structures of higher education – pre- and post-Bologna – currently co-exist allowing the pre-Bologna programmes naturally coming to an end. No new students have been accepted onto pre-Bologna programmes from the 2010/11 academic year. It is expected that the last cohort *Ingeniero Técnico* will be awarded in the 2013/14 academic year.

### *Ingeniero Técnico*

The *Ingeniero Técnico*, in full *Título Universitario Oficial de Ingeniero Técnico*, is awarded on successful completion of the pre-Bologna first cycle of education in the field of engineering, which is three years in duration and gives access to the second cycle known as *Licenciatura* (*Ingeniería* in the field of engineering and *Arquitectura* in the field of architecture).

The findings of the recent Engineering Council report, supported by the recent review of the country's education system by UK NARIC, provide convincing evidence that the *Ingeniero Técnico* can be considered comparable to British Bachelor (Ordinary) degree standard.

In order to establish a comparable level of a qualification within the UK education system, UK NARIC takes into consideration common criteria such as qualification design, admission requirements, duration of study, course content and structure, examination methods evidencing the desired learning outcomes. No criterion is viewed as being more important than another or viewed in isolation, allowing for a comprehensive and fair assessment. The following indicators of level were the main determining factors in establishing the revised comparable level of *Ingeniero Técnico* compared to the UK standards.

#### ECUK:

- The review of the course content by the Engineering Council demonstrates that the course content is akin to that found in UK Bachelor programmes in engineering designed for Incorporated Engineers. In particular, the final project was found to be comparable to that seen in UK Bachelor degree programmes in engineering. The project is expected to be original and innovative and focuses on engineering design, all of which are common key elements of UK undergraduate courses in this field.
- Examples of course assessment taken in the third (final) year, that were provided to the Engineering Council for review, were found to be compatible with final-year assessment that forms part of UK Bachelor programmes.

#### UK NARIC:

- The minimum academic entry requirement to the programme of study includes the new-system *Título de Bachiller* or completion of the old-system pre-university course known as *Curso de Orientación Universitaria*, both of which are considered comparable to the overall GCE Advanced level / Scottish Advanced Higher standard. In addition, completion of the university-entrance examination known as *Prueba de Acceso a la Universidad* (PAU) is also required.
- The duration of the programme of study is three years full-time.
- The qualification of *Ingeniero Técnico* gives access to the next cycle within the pre-Bologna structure of higher education. Progression is not automatic and content and performance would be taken into consideration before progression to the next cycle.
- The Royal Decree 1393/2007 (modified by Royal Decree 861/2010) establishes that holders of pre-Bologna first-cycle qualifications, including the qualification of *Ingeniero Técnico*, must be allowed to transfer credits towards the Bologna qualification of *Título de Graduado* in a related field. A bridging course (*pasarela* or *curso de adaptación*) is thus being offered by Spanish universities.

The universities, being autonomous, are free to determine the extent of complementary content of these bridging courses, although review of several examples demonstrated sufficiently common features. While the top-up courses being offered for entry into new Bologna second cycle programmes cannot be generalised, it has been noted that they, typically one to two semesters in length, generally require applicants to complete additional 30 to 60 ECTS credits, to include the submission of a dissertation (*Trabajo Fin de Grado* – approx. 12 ECTS credits).

In addition, professional experience in the field may also be recognised (up to 36 ECTS credits).

### **Recommendations**

In conclusion, based on the criteria above and in view of the report by the Engineering Council, UK NARIC considers that the qualification of *Ingeniero Técnico* is comparable to British Bachelor (Ordinary) degree standard. The outcomes of this review should be communicated more widely through NARIC publications.