EXECUTIVE SUMMARY

Evaluation and Benchmarking of the Diploma in Intelligent Optoelectronic Technology Application from Zhongshan Torch Polytechnic

Context and scope

Zhongshan Torch Polytechnic commissioned Ecctis for an independent evaluation and benchmarking of its Diploma in Intelligent Optoelectronic Technology Application, which was completed in June 2024.

The Diploma in Intelligent Optoelectronic Technology Application is one of 27 qualifications delivered by the College in areas such as information technology, packaging design, and e-commerce.

The main aims of the benchmarking were to:

- Establish comparability in the context of the UK through reference to the Regulated Qualifications Framework (RQF), and by extension, the European Qualifications Framework (EQF)[1]
- Assess the extent to which the College's underpinning quality assurance meets a set of international standards.

Key findings

The Diploma in Intelligent Optoelectronic Technology Application seeks to develop students' knowledge in mechanical drawing and computer-aided design (CAD), C language programming, and programmable logic controller (PLC) technology. In line with national requirements, the Diploma also encompasses "public basic courses" which include topics from arts, social sciences and science domains.

The general entry requirement for the programme is the National College Entrance Examination (NCEE, popularly known as the *gaokao* 高考) – comparable to GCE A Level / RQF Level 3 in the UK – or suitable marks in one of the College's own tests.

The Diploma is a three-year full-time programme equating to approximately 2614 hours' guided learning time. Reflecting its vocational focus, the Diploma combines classroom-based study with practical-based simulated learning and a 540 hour internship in which students can develop their practical skills within a real-world environment.

[1] To date, a total of 36 countries have now referenced their national education systems to the EQF.

Upon completion, many students enter the workforce[2]; however, some students will be eligible to apply for top-up Benke (本科) / Bachelor degree programmes. These require a minimum of two years of further study, which shows that the Diploma has similar academic progression routes to that of HNDs, Diplomas of Higher Education and other UK Level 5 awards.

The study revealed several strengths of the Diploma in Intelligent Optoelectronic Technology Application, namely it demonstrated that:

- The inclusion of elective modules with content focusing on the growth areas of Artificial Intelligence and Python programming serves to futureproof the programme and provide students with contemporary knowledge.

- The College enjoys strong links with local industry for the provision of internships and for the evaluation and development of the programme.

- The College has a training campus with two buildings including large-scale industry standard equipment for practical training.

- The establishment of a new management system for part-time teachers to standardise their appointment and evaluation, whilst using full-time teachers to train practice-based teachers to improve the standards of their teaching, supervision, and assessment.

- The use of test questions from a question bank for final examinations to ensure that assessment is independent of the teacher delivering the material, thereby making the results a more reliable evaluation of student achievement.

- The pedagogical approaches including deliberate practice, group discussion, and situational learning are effective for delivering optoelectronic content.

- The extensive industry research including projections of talent requirements and the requirement for a proportion of double-position teachers.

In terms of international comparability, the Diploma in Intelligent Optoelectronic Technology Application has been found comparable to Level 5 of the RQF and EQF. It has also met international quality standards in the following five areas:

- **Admission**
  There is a pre-defined and published admissions policy ensuring transparency in the admissions policy and supporting consistency in admissions decisions

- **Programme development, approval, monitoring and review**
  There is a clear process in place for the design, approval and monitoring of programmes

- **Teaching and learning**

[2] The employment rate of graduates is typically 99%.

There is a formalised process for monitoring the quality and effectiveness of delivery, relevant to the modes of study employed

- **Assessment**
  Assessment provides a sufficiently fair, valid and reliable evaluation of the intended knowledge, skills and competencies

- **Information**
  The information available to prospective students, current students and other interested stakeholders is accurate, transparent and clear for the intended audience.

Engagement

Zhongshan Torch Polytechnic has committed to further development and engagement encompassing:

- Writing new learning outcomes at programme and module level, ensuring these are specific; measurable; and that an indicative 60% of the programme targets a higher level of knowledge and critical thinking skills.
- Developing a programme assessment framework/plan.
- Adopting assessment and marking approaches that sufficiently test critical thinking skills such as analysis and evaluation.
- Ensuring that there is a clear policy on programme assessment plans. Assessments should be developed so that they are clearly linked to intended learning outcomes. There should be clear limits on the use and weighting of attendance as part of the assessment.
- Developing a unified internal quality assurance ‘handbook’ for the College to bring together all existing written policies and processes and formalise any unwritten policies or processes.
- Maintaining and ensuring adoption by all staff of the unified quality assurance handbook.

Ecctis is a gold-standard provider of services in international education, training, and skills, and in the development and recognition of globally portable qualifications. We are an internationally trusted and respected reference point for qualifications and skills standards.

We are UK-based and operate worldwide, with a global network and client base spanning 62 countries and 5 continents. We have a 20-year track record in international consultancy and development.

Ecctis provides official UK national agency services on behalf of the UK Government in qualifications, skills, and migration – including UK ENIC, formerly UK NARIC.

UK ENIC is the UK National Information Centre for global qualifications and skills. Following the UK's leaving the EU, the former UK NARIC recognition agency function changes from a NARIC (which is an EU-only title) to an ENIC (the wider European title for national recognition agencies) in order to meet the UK's continuing treaty obligations under the Lisbon Recognition Convention.

Since 2019, through our China representatives and Beijing office Nalike we have conducted qualification benchmarking in China and fostered educational links between China and other countries, to support the internationalisation efforts of China's higher vocational colleges.

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