Higher Education Sprout Project Executive Summary 2019: Carry forward the spirit of being pragmatic and practical Build up innovative strength

Goal: Improve Learning Outcomes through Innovative Teaching

● **Build up key basic capabilities in response to future trends**

Taipei Tech is continuing to improve students' professional, cross-disciplinary and practical skills, and strengthening the cultivation of students' independent thinking, communication and international mobility to achieve the goal of developing life-long employability.

1. **Cultivate the ability of thinking in language expression：**

Taipei Tech has reformed the Chinese language curriculum. The passing rate of the Chinese language test was increased by 34.92%, and the rate of score improvement increased by 73.45%. More than 450 people participated in debates, briefing contests and news workshops to gradually enhance their language ability.

2. **Deepen humanities, knowledge and social skills：**

More than 60 classes were conducted, which includes etiquette training, humanistic aesthetics experiences, and club leadership lectures. Over 3,800 people participated and gave positive feedback.

3. **Expand macro global mobility：**

10 lectures on the cultivation of international perspectives were organized. Experts from political, economic, and cultural studies were invited to discuss global issues and share cross-cultural topics with students. Over 4,700 people participated.

● **Build up talented personnel with industry collaboration**

Co-planned courses with off-campus experts and scholars. Coached students have grown by 70% compared to the previous period. Enterprise resources were introduced into practical teaching, and the goal of "integration of industry, academy and research" was accomplished through the cooperation model of "One Department and One Enterprise".

1. **Improve instructors' practical experience and teaching quality：**

Introduced resources from the industry and alumni through the faculty and courses. Adopted "collaborative teaching with industry experts and scholars" and "industry instructors". Invited experts and scholars to jointly plan courses to help students better

learn industry trends and employment conditions. Numbers of coached students have grown by 70% compared to the previous period.

2. **Strengthen the effectiveness of practical teaching with the introduction of corporate resources**：

Through the long-term cooperation model of "One Department, One Enterprise", alumni network is linked to promote the circular interaction among industry, faculty and students, and through modularized industry courses and related strategies, industry and education quality is promoted. The goal of "integration of industry academy and research " is achieved.

- **Construct a multi-dimensional and interactive cross-field learning environment**

Taipei Tech plans multiple cross-field learning systems by extending the learning of various fields/subjects. Students are encouraged and directed to participate in cross-field competitions and continue to extend to cross-school and cross-field learning. 1,500 students have taken cross-field courses in the past year.

1. **Form cross-field/cross-school student communities**：

There were 32 cross-field/cross-school student communities in the past year, one of which won the first place of 2019 National College and University Smart Innovation and Cross-Field Integration Innovation Contest-IoT Group.

2. **Design programming courses for inspiring logical thinking**：

Through general education innovations, professional courses are first presented in an introductory way, such as "Introduction to Artificial Intelligence" and "Introduction to Python Programming and Application".

3. **Use local resources to offer cross-field courses** ：

Organized 9 courses related to field courses and activities in Da Guang-Hua and Da Dao-Cheng commercial zones. About 200 people have participated.

- **Link to "Taipei Tech HIGHER", build up 5+N industrial talents**

Established hands-on teaching courses, spaces, and needed equipment for cultivating 5+N industry talents, aimed at core industries match with industry needs.

1. **Promote international 5+N industrial enterprise internship**：

Promoted "BA-MA-PhD" internship mechanisms in stages and encouraged students to join cross-field multiple international industrial internships in the domestic and international companies. Each year more than 500 companies collaborate with Taipei Tech,

including 15 international cooperative internship institutions. Overseas internship has increased to 165 students.

2. **Build digital i-Intern internship system：**

Completely digitalized the data of internship to replace the current paperwork for the following analysis of big data and optimized the effect of use of digital information.

● **Cultivate entrepreneurship and innovative thinking**

To cultivate innovative thinking and entrepreneurship of students, Taipei Tech recruited seed teachers with these qualities on and off campus and organized courses and activities related to innovation and entrepreneurship to enhance students' skills.

1. **The "Hope Gardener" teacher team** going abroad to learn：

A total of 7 seed teachers were sent to Babson College in the United States to learn new knowledge in the past year and opened innovative and entrepreneurial courses after returning. The total number of students who took the innovative courses was 3,636 in the past year.

2. **"Innovation and Entrepreneurship Seed Teacher Training Camp" sharing resources together：**

Faculty members from 43 universities with 120 applicants shared overseas training experience and exchanged teaching experience.

3. **Open the 4th "Micro Entrepreneurship Practice" course：**

Let students form groups to simulate starting up an enterprise, introduce consultation and entrepreneurial fund subsidies. 7 groups were organized and produced entrepreneurial works. The annual production cases reached 14.

● **Drive teaching optimization system with O$_2$O mode**

Created integrated support services focusing on manpower, funding, software and hardware. Encouraged faculties to participate in co-learning activities to enter the first mile of innovative teaching, and explore and share teaching results to form an optimized teaching cycle.

1. **Multi-track innovative teaching community：**

13 groups of communities were engaged in co-learning activities with themes such as "teaching innovations", "practical teaching research" and "cross-field teaching" to promote the growth of the teaching profession.

2. **"Teaching, Observing, and Discussing" plan that teaching and learning go hand in hand：**

   There were 27 courses that allowed auditing and observation this semester, of which nearly 70% of teachers observe classes across fields. They focused on improving class management and interaction between the teacher and students.

3. **Taipei Tech cooperated with Cambridge English, British Council and other institutions to teach English courses in order to improve the quality of English teaching.**

Goal: Develop School Characteristics

- **Shape school characteristics, support innovative practical teaching**

   Actively developed unique and advanced factory-type laboratories of "Simulated Production Line". Linked teachers and industries to conduct practical research, and cultivate students' practical ability to solve corporate problems.

1. **Use the unique factory-type laboratory (iFabLab) to link the industry：**

   Developed 11 factory-type laboratories, established complete "iFabLab" identification images to improve external visibility, and linked teachers and industries to conduct practical research. More than 500 students were cultivated.

2. **PBL industry researches and develops special topics：**

   Used PBL industry-university research and development model, supplemented by the "online learning worksheets" digital platform, giving feedback regarding learning information in real time and providing necessary assistance. A total of 12 special projects were subsidized, 140 students were cultivated, and the total value of industry-university cooperation created was 7.96 million NTD.

- **Strengthen practical research energy and cultivate industry talents**

   Conducted scientific and technological teaching and research cooperation through cross-field cross-domain and cross-border methods.

   1. **Promote two-side academic research cooperation：**

      Cooperated with 17 domestic and foreign universities and hospitals to conduct research, combined professional theories and practical application to play to each other's strengths, and published more than 40 research papers.

   2. **Establish research centers in the characteristic fields：**

Established the joint forward-looking research centers with 9 companies and institutions. Invited industry experts to conduct joint research and cooperation, such as the establishment of the "CSI Smart Governance Application Technology R&D Center" in cooperation with CSI Technology Group, and the establishment of "Chicony & Taipei Tech R&D Center" in cooperation with Chicony Company. These are to strengthen the ability of Taipei Tech's practical R&D team.

- **Deeply cultivate the quality of industry-university cooperation, establish an industry-research learning ecosystem**

    Hired experienced experts with industry and venture capital backgrounds to enhance the new vision of technology transfer to promote cooperation between Taipei Tech and corporate enterprises. Assisted in guiding the commodification of R&D results, and effectively promote it.

1. **Enhance experience in industry-university cooperation：**

    Consolidated our long-standing foundation of cooperation with industry manufacturers to enhance industry-university cooperation, strengthened the link between outstanding alumni and international networking, and developed growth in vehicles, green energy and other fields.

2. **Develop large-scale projects with enterprises：**

    Encouraged enterprises to actively participate in applied research to increase the product's added value, manage service performance, cultivate the scale of corporate R&D capabilities and international competitiveness, market key technologies to the world, and create international R&D market value.

- **Build up the potential of innovation and entrepreneurship, cultivate entrepreneurial talents**

    Provided experimental sites of startup services, counseling service, talent cultivation and business-to-business matchmaking for large enterprises. Implemented the cooperation model from the four aspects of "R&D application, business opportunities matching, talent training, and value creation".

1. **Multiple communication channels：**

    Cooperated with government-operated entrepreneurial service programs or bases to provide off-campus entrepreneurial service resources as a channel of the exchange of innovative and entrepreneurial talents.

2. **Teachers, students and manufacturers teach and learn together：**

Allowed teachers and students to familiarize themselves with the entrepreneurial counseling resources of different stages and models throughout their academic years. This works as a support system for the development of start-up businesses.

3. **Participate in multiple competitions：**

The Innovation Center actively counseled manufacturers to join and apply for multiple competitions and win related awards.

● **Promote the internationalization and global mobility**

International mobility and collaboration are the keys to enhance the globalization and academic productivity of the university. The primary focuses of Taipei Tech are international networking and partnership, bilateral student exchange, and overseas student recruitment.

1. **International Networking and Partnership:**

Aims include enhancing the diversity of the international partnerships and deepen collaborations. Since the project began, Taipei Tech has successfully established partnerships in seven new countries, including Sweden, Denmark, Finland, Switzerland, Belgium, Andorra, and Romania. Moreover, Taipei Tech initiated multiple new programs with partners from Germany, the U.S., and Thailand, such as joint research, the dual-degree program, and more.

2. **Bilateral Student Exchange:**

International mobility is essential for student development. As of the end of July 2019, there are overall 105 partner universities offering semester exchange opportunities for Taipei Tech students. The number of exchange students (in/outbound) has grown approximately by 28% annually.

3. **Overseas Student Recruitment:**

The number of international students of Taipei Tech has grown by about 80% within the past three years. The total number is 1,100, and they come from fifty-four countries around the world. Nearly 49.4% of them are from southeastern Asian countries, predominantly from Malaysia, Thailand, Vietnam, Indonesia, and Myanmar. The future aim of the overseas student recruitment is to recruit 50~100 new degree-seeking students every year and will focus on international graduate students.

Goal: Publicity for higher education

1. **Learning scholarships**：

   Taipei Tech grants "Inspirational scholarships" to help students to plan an independent study plan. A total of 215 applications were submitted in the past year. Taipei Tech also offered tutoring classes for disadvantaged students with poor performance. Students who attended every month and who have made progress in assessment tests during class tutoring will be granted with "Ease Study Scholarship". Disadvantaged students with outstanding performance can apply for the "Multiple Learning Scholarship".

2. **Cultivate 5-year college talents with practical and technical skills**：

   Introduced P-tech curriculum planning, and implemented the "one apprentice two teachers' system" combining professional teachers and corporate instructors.

3. **Offer advice on school governance through school affairs research**：

   Established a research data inventory and a column dictionary. Regularly evaluated the effectiveness of school affairs management, as the basis for university management decisions.

Goal: Fulfill university social responsibility

- **Local care-cultivation and support, sustainable environment-smart economy**

  Under the goal of "Local Care" and "Sustainable Environment", the related strategies and quantitative performance of "Opening Service Learning Courses" and "Building Environmental Sensing and Energy-saving Systems", have achieved their objectives.

1. **Integration of professional courses into service learning**：

   Students used their professional skills to assist with local issues, such as the designing of a clinic building in Peony Township, Pintung. The local government finalized the design after consultation with experts.

2. **Build an environmental sensing and energy saving system**：

   In response to local needs, Taipei Tech coordinated the resources of Information Engineering, Department of Chemical Engineering, and Department of Economics and Management to assist fishermen in Jiadong Township, Pingtung County, and to build an aquaculture management system. The system is operated through a cloud integration platform to train technology fishermen. Projects such as this encourages young people to

return to work in their hometowns through industrial transformation.

3. **Assist local creation：**

Department of Cultural Development students assisted catering companies in Kansai region of Hsinchu to renovate their stores. With the theme of Kansai Hakka food culture, a series of cultural and creative products were designed and promoted through story marketing, micro-films, and cultural lectures. Through the long-term cooperation with the December Flower Village team that has been cooperating with Formosa Plastics Organic Farm to produce enzymes, the brand "Peony Dreaming Smile" was established, combining peony farmers with contracted crops to provide substantial support to the local area.