

20-30 Aug., 2018  
Taipei, Taiwan

# Summer Program

# *Summer Program*

**20– 30 Aug., 2018**

**Taipei, Taiwan**

**TAIWAN TECH**  
NATIONAL TAIWAN UNIVERSITY OF SCIENCE AND TECHNOLOGY

## ABOUT THE SUMMER PROGRAM 2018

In 2018, National Taiwan University of Science and Technology (Taiwan Tech) offers 2-week Summer Programs, for students to pursue individual research projects under Taiwan Tech's faculty supervision or to enjoy internationally collaborative study in Taiwan. All participants will have the opportunities to learn about Taiwanese culture and experience life in one of the most exciting and advanced societies in the world.

The Programs will focus on the cooperative work among different students to resolve engineering problems. The core purpose is to promote and enhance the intensive theoretical and experimental approaches to acquiring various knowledge in engineering. Taught by Taiwan's leading professors in the fields of Physics, Chemistry, Materials Science, Electrical Engineering, Design, Biotechnology Science, Patents and Entrepreneurship, in this year, the programs are aimed to further inspire participants that are involved in the fundamentals and applications of the engineering knowledge. In addition, the participants will have the opportunities to meet the experts and visit companies. All participants must be affiliated with the 6U-HAPPIER and able to present in English.

### *Program Projects and Goals:*

- Preparation of wound dressing material
- Advanced Green Systems - Microbial Fuel Cells
- Creative Life Design
- Entrepreneurial Course
- Valuation Methods of Intellectual Property Right
- Factory Tours
- Taiwanese culture and Language
- Exploratory Field Trips and Site Visits



## VENUE (Host City)



Taipei, capitol of Taiwan, is located in the north of the main island, surrounded by towering mountains and home to some greatest hot springs in the world. With a mesmerizing history, Taipei is a tough little city whose beauty lies in its blend of Chinese culture with a curious fusion of Japanese, Southeast Asian and American/European influences. A bustling metropolis with charming neighborhoods, fascinating temples, and friendly people, Taipei is blessed with compelling city scene and abundant natural attractions.

Its efficient transportation system makes it easy and comfortable to navigate the city.

Taipei is referred to by Condé Nast as being the best Asian food city for its multicultural



Meet  
Colors!  
台湾



culinary tradition:

street-food stalls, Michelin-starred restaurants, design-driven cafés and eclectic coffee shops and tea rooms. The famous Shilin Night Market is one great dining and shopping destination among the many night markets in the city. It is extremely crowded streets feature small stores and stands

selling a mixture of food, clothing, and consumer goods that are tailored to satisfy the latest trends among young people. Like many vibrant destinations in Taipei, Shilin Night Market usually opens in late afternoon and operates well past midnight.



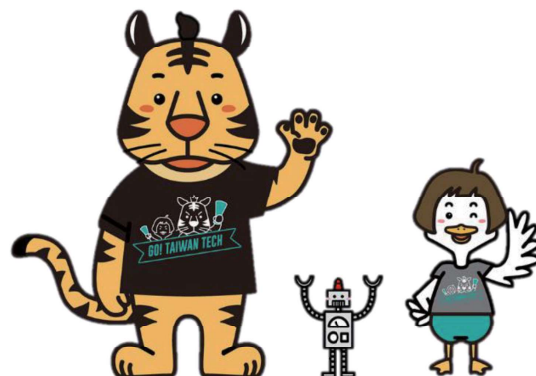


## ABOUT TAIWAN TECH

*"AN INTERNATIONAL APPLIED RESEARCH UNIVERSITY PRODUCING  
GLOBALLY COMPETITIVE HIGH-TECH AND MANAGEMENT PERSONNEL TO  
BUILD THE FUTURE OF OUR NATION AND SOCIETY"*



The National Taiwan University of Science and Technology (NTUST), commonly referred to as Taiwan Tech, was founded on August 1, 1974 as the first higher education institution of its kind within the nation's technical and vocational education system. After more than thirty years of dedication to growth and excellence, NTUST is now the number one technology-focused university in Taiwan, and has ranked among the top 10 institutes in Asia in science and technology. A school committed to meeting the needs created by the rapid economic and industrial development for highly trained bachelor's degree-level engineers and managers, Taiwan Tech now is a world-class intellectual community that grants master's and doctoral degrees and comprises seven colleges, including Engineering, Electrical and Computer Engineering, Management, Design, Liberal Arts and Social Sciences, Applied Science, and Intellectual Property Studies. A leading research institution, Taiwan Tech strives for meaningful collaboration that encourage and enhance research, innovation, and service.



## *Schedule*

### **(i) Registration :**

Date and Time: Sunday, August 19, 12:00 to 18:00

### **(ii) Opening Ceremony**

Date and Time: Monday, August 20, 10:00 to 11:00

### **Opening Remarks:**

## **Fun Taiwan: Culture and spots in Taiwan**

Ms. Ya-ting CHIANG (Language Center, Taiwan Tech)

Taiwan is a small island with huge diversity! Taiwanese culture is a blend of traditional Chinese, Taiwanese aboriginal, Japanese and Western cultures that made Taiwan become so fascinating! Not to mention the fact that the hospitality of Taiwanese people impressed visitors and became one of the best part of their travel experience. Through exploring different perspectives of Taiwan (e.g. languages, customs, religions, festivals, food, etc.), we hope that visitors will have a deeper understanding of Taiwanese culture and enjoy their stay in Taiwan!

### **Course Description**

In this course, we will probe different perspectives of Taiwan via lectures and various activities. The topics that we will cover are as follows:

1. etiquette (e.g. greeting, dining etiquette, etc.)
2. attractions
3. festivals
4. food culture

### **Course Objectives**

The student, upon completion of this course, should be able to:

1. understand the customs and etiquette in Taiwan.
2. familiarize themselves with the must-see attractions in Taiwan.
3. use simple Mandarin to communicate with the locals.

## *Schedule: Summer School 2018*

Dates	Schedule
8/19	Registration
8/20	Opening Remarks Fun Taiwan: Culture and spots in Taiwan Welcome Party
8/21	Integrated course
8/22	➤ Entrepreneurial Course ➤ Valuation Methods of Intellectual Property Right
8/23	Exploratory Field Trips and Site Visits
8/24	Exploratory Field Trips and Site Visits
8/25	Cultural exchange With Taiwan students
8/26	Cultural exchange With Taiwan students
8/27	➤ Advanced Green Systems - Microbial Fuel Cells
8/28	➤ Creative Life Design
8/29	➤ Preparation of wound dressing material
8/30	Presentation Closing ceremony Graduation Party



## **Entrepreneurial Course**

Dr. Amber CHEN (CEO, Life Start International Limited)

[www.lifestar.com.tw](http://www.lifestar.com.tw)

This course itself is an innovation in teaching. Unlike traditional lecture based course, through series of activities are given a change to interact with students for other schools and disciplines and to work with the outstanding entrepreneurs to develop their own business plan. These activities including writing an English application letter to promote oneself, building the team to develop business plan by interacting and negotiating with other students, developing and validating a business plan, and pitching the business plan to industry leaders.

In this course we seek to achieve the following objectives:

1. To understand the source of innovation and the systematic way to innovate
2. To understand the issues of innovation management
3. To understand the element of good business plan
4. To interact and cooperate with people with diverse background
5. To experience the life of entrepreneur
6. To understand the process of writing and pitching a business plan such as concept validation, financial analysis, and strategy planning
7. To gain the ability and experiences to be an entrepreneur

## **Valuation Methods of Intellectual Property Right**

Prof. How-wen TSAI (Graduate Institute of Patent, Taiwan Tech)

1. Accounting valuation and reporting of intellectual property
2. Valuation of specific intellectual properties: Patent
3. Valuation practice for intellectual property
4. Relations to IP transactions and tax
5. Case study and report

## Advanced Green Systems - Microbial Fuel Cells

Prof. Chen-Hao WANG (Department of Materials Science and Engineering)

The scale of modern industrialization has given rise to environmental problems of unprecedented complexity. Like toxic waste, wastewater disposal, heavy metal pollution of contaminated land and water. The challenge for today's environmental problems requires innovation in improvements to manufacturing processes and in the utilization of natural resources. The microbial fuel cell (MFC) is a renewable energy system, in which bacteria harvest energy from bio-degradable materials. In an MFC, organic matter is oxidized by microorganisms in the anode, and electrons are subsequently transferred to the cathode via the external circuit. The MFC not only converts wastewater into electrical energy but also degrades the chemical oxygen demand (COD) in wastewater. Therefore, the MFC provides a tremendous opportunity to achieve sustainable wastewater treatment as it is possible.

### Course Description

Fundamentals of the fuel cell. Electricity generating microorganisms. Electron transfer mechanism microbial fuel cell (MFC). Parameters for evaluating MFC performance. MFC reactor configuration. Potential applications of MFC.

### Course Objectives

The student, upon completion of this course, should be able to:

1. Understand basic fundamentals of microbial fuel cell activity and explain potential applications.
2. Write a short research proposal based on the course contents.

## **Preparation of wound dressing material and its application on traumatic mice model for evaluation**

Prof. Meng-Yi BAI (Graduate Institute of Biomedical Engineering)

### **Course Description**

The aim and goal of this one-day practice course is to lead the student quickly familiar with the material processing. In addition, a step by step teaching course will be given by the instructor to let the student understand the basic ethics and animal study procedures using a traumatic mice model operating in an international accredited animal center.

### **Course Objectives**

1. Preparation of wound dressing using electrospinning technique
2. Introduction of mouse physiology
3. Animal restraint and animal anesthesia administration
4. Operation of full skin removal surgery
5. Application of wound dressing
6. Drug administration for relieving pain
7. Post-anesthesia care

### **※ On-Site Research**

National Defense Medical Center

[www.ndmctsggh.edu.tw](http://www.ndmctsggh.edu.tw)



## Exploratory Field Trips and Site Visits

### ITRI

[www.itri.org/eng](http://www.itri.org/eng)



工業技術研究院  
Industrial Technology  
Research Institute

The Industrial Technology Research Institute (ITRI; Chinese: 工業技術研究院) is one of the world's leading technology R&D institutions aiming to innovate a better future for society in Taiwan. Founded in 1973, ITRI has played a vital role in transforming Taiwan's industries from labor-intensive into innovation-driven. It focuses on the fields of Smart Living, Quality Health, and Sustainable Environment. Over the years, ITRI has incubated over 270 innovative companies, including well-known names such as UMC and TSMC. In addition to its headquarters in Taiwan, ITRI has branch offices in the U.S., Europe, and Japan in an effort to extend its R&D scope and promote opportunities for international cooperation around the world.

### ULVAC

[www.ulvac.co.jp](http://www.ulvac.co.jp)



Our company was founded in 1952 for the purpose of importing and selling various types of vacuum systems, and it concluded a general agent agreement with NRC Equipment Corporation, a U.S. company, for technical cooperation in the future. ULVAC possesses research and development institutes as its group's think tank in order to meet the latest process needs from their customers by providing solution from various points of view including equipment, processes and materials.

### GARMIN

[www.garmin.co.jp](http://www.garmin.co.jp)



Garmin Ltd. (shortened to Garmin, stylized as GARMIN, and formerly known as ProNav) is an American multinational technology company founded by Gary Burrell and Min Kao in 1989 in Lenexa, Kansas, United States, with headquarters located in Schaffhausen, Switzerland and Olathe, Kansas. The company is known for its specialization in GPS technology development for use in automotive, aviation, marine, outdoor, and sport activities and utilities. Due to their development in wearable technology, they have also been competing with activity tracker and smartwatch consumer developers such as Fitbit and Apple.

## Location & Transportation

### From Taiwan Taoyuan(桃園) International Airport to Taipei downtown

Taiwan Taoyuan International Airport (Airport Code: TPE) which is situated 40km (24.8 miles) southwest of Taipei. It takes about an hour by car to get to most places in Taipei downtown in moderate traffic.

#### ▲ By Taxi

Taxis queue outside the Arrival Halls of both Terminal I and Terminal II of Taiwan Taoyuan International Airport. Airport taxis charge according to the meter plus a 50% surcharge (highway tolls not included). Typical fare to Taipei downtown is around NT\$1,100 (NT\$1,200 to NTUST campus and hotels nearby). Note: Please ignore any solicitations of taxi service inside the Arrival Hall. Do hire one at the official taxi stop.

#### ▲ By Bus

There are several long-distance bus companies provide frequent services between Taiwan Taoyuan International Airport and downtown Taipei. The trip takes about 60-90 minutes. Ticket counters are located in the Arrival Passenger Reception Areas of both Terminals. Luggage is self-served. Adult single fares vary from NT\$ 125 to \$150 depending on the location of the terminal stop in Taipei. English flyers are distributed on the ticket counter. Most clerks are able to speak English and Japanese. For more information, please visit transportation information provided by the airport. You could choose a bus line which has stops near your hotel. The most convenient way to get to the hotel is by taxi.

### From Taipei Songshan(松山) Airport to NTUST campus

Taipei Songshan Airport (Airport code: TSA) is close to the NTUST campus and the Taipei city center.

#### ▲ By bus

Take the bus (275) from the airport main entrance to National Taiwan University of Science and Technology

#### ▲ By Taxi

Taxi cab can be hired outside the Arrival Hall. The taxi charges according to the meter.

#### ▲ By MRT

Take the Wenshan-Neihu Line; 文湖線 from Songshan Airport Station to Technology Building Station directly. The NTUST campus is close to Gongguan Station; 公館 (Green line).



## 國立臺灣科技大學

## National Taiwan University of Science and Technology

10607 臺北市大安區基隆路 4 段 43 號

No.43, Keelung Rd., Sec.4, Da'an Dist., Taipei City 10607, Taiwan (R.O.C.)

Tel: 886-2-27333141





