Tunghai University
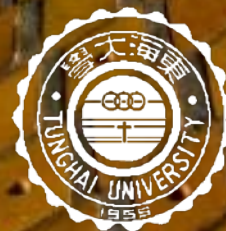
Master's Program in
Digital Innovation and Information Technology
Industry-Academia Collaboration

Program Overview

TUNGHAI UNIVERSITY

LION TECHNOLOGY

In alignment with the new International Programs of Industry-Academia Collaboration, a collaborative effort is underway to establish **a 2-year master's program** with **industry-academia cooperation**.

Scholarships **+** Chinese Language Learning **+** Master's Degree **+** Employment in Taiwan

College of Engineering

The Master Program of Digital Innovation

Target Enrollment

15-30 students

Mainly Taught in Chinese

Requirement: Proficiency in Chinese at A2 level (Required to reach B1 by the second year)

Professional Background Requirements:

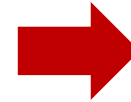**Information Engineering, Big Data, IT Digital Innovation**

Tunghai University 2-Year Master's Program:
Master's Degree Program in Digital Innovation

Industry-Academia Scholarship
1) First Year:
Subsidy of **NT$100,000 for the first- year tuition**, a one-time airfare subsidy (up to NT$9,000), and administrative expenses (health check/visa document verification, etc.)..

1) Second Year:
Provide **a scholarship of NT$100,000 based on academic performance**.

Corporate Allowances:
1) Living Allowance:
NT$10,000 per person per month

1) Internship Allowance:
NT$30,000 per person per month

Internship and Employment in Taiwan:
Lion Technology Co., Ltd.

1. Internship Opportunities with the Enterprise
2. **Opportunity for Employment in Taiwan upon Graduation**
3. Commitment to Employment for a minimum of 2 years after graduation

PS.
If students withdraw from the specialized program midway or fail to fulfill employment commitments after graduation due to unforeseen circumstances, they are required to return the received industry-academic scholarships and corporate subsidies in accordance with the regulations.

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Office of
International OI
Relations

- **Language skills:**
Applicants must demonstrate at least **A2 level in the Test of Chinese as a Foreign Language (TOCFL)**.

  (Must reach at least B1 level by the second year of enrollment)

- **Undergraduate background and technical skills:**
Applicants should have a background in **information technology or relevant certifications to demonstrate sufficient technology-related background**.

- **Academic Performance and Ranking:**
Preference will be given to applicants **with a cumulative grade point average of 3.0 or higher**.

Description of Courses and Internship Planning

A total of 32 credits are required for graduation, including **18 credits of required courses** (which incorporate 6 credits for professional practical reports, including the alternative thesis option; and 9 credits for off-campus internships), **6 credits of required elective courses** (choose 2 out of 3), and **8 credits of elective courses**.
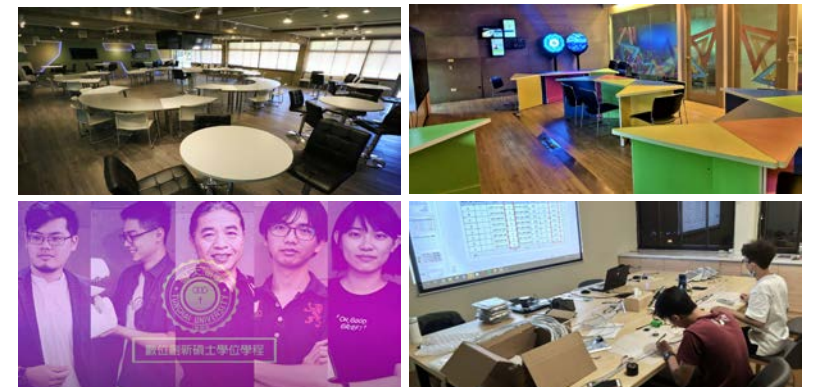
18 credits of required courses

- **User Experience Design (3)**
- **Internship in Industry (9)**
- **Professional Practice Report (6)**

6 credits of required elective courses (choose 2 out of 3)

- **Advanced Database Systems (3)**
- **Web Services Technologies and Applications (3)**
- **Mobile Application Development (3)**

8 credits of elective courses

- **Big Data and Digital Innovation Project (3)**
- **Prompt Engineering in AI (3)**
- **Software Engineering and Project Management (3)**
- **Practical Applications of Generative AI (3)**
- **Artificial Intelligence and Digital Innovation Projects (3)**

1ST YEAR

1ST SEMESTER

- **Advanced Database Systems (3 credits)**
- **Big Data and Digital Innovation Project (3 credits)**
- **Prompt Engineering in AI (3 credits)**
- Chines Language Course

2ND SEMESTER

- **User Experience Design(3 credits)**
- **Software Engineering and Project Management (3 credits)**
- **Mobile Application Development (3 credits)**
- Chines Language Course

2ND YEAR

1ST SEMESTER

- **Practical Applications of Generative AI (3 credits)**
- **Artificial Intelligence and Digital Innovation Projects (3 credits)**
- Chines Language Course

2ND SEMESTER

- **Internship in Industry (9 credits)**
- **Professional Practice Report (6 credits)**

※The maximum weekly internship hours per credit during the semester should not exceed 8 hours, and the weekly internship hours for off-campus internships throughout the full semester should not exceed 40 hours.

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Course Name	Course Outline	Credit Hours	Type
User Experience Design	User experience revolves around putting the user at the center, exploring the interaction between users and the objects to be designed, and designing products that align with human nature. The course introduces current trends and future directions in the field of user experience research. It covers the definition and importance of user experience, its role in digital product innovation, and how to develop user experiences to meet design requirements, including relevant indicators. The course also includes readings of papers in this field.	3	Required
Internship in Industry	Internship Job Responsibilities: • Requirement design • Software development • System maintenance • System testing • Documentation writing • Design Thesis / Professional Practice Report	9	Required
Professional Practice Report	This instructional component involves individual professors guiding students in thesis writing based on their respective research areas. The process includes mentorship for thesis writing and conducting thesis defenses.	6	Required

Course Name	Course Outline	Credit Hours	Type
Prompt Engineering in AI	Prompt engineering involves achieving expected tasks through effective communication with AI. With the rapid development of large language models today, mastering prompt engineering skills and giving natural language commands have become increasingly important. The course content includes an introduction to large language models, prompt engineering in text and image generation, prompt engineering in the use of applications, and prompt engineering for developers.	3	Elective
Big Data and Digital Innovation Project	With the rapid growth of data, the continuous evolution of software technology, and the maturity of cloud technology, data analysis has become an indispensable strategy and tool for today's business development. The course covers theoretical introductions to data analysis and statistical methods, practical programming operations, and innovative case studies of data applications in enterprises.	3	Elective
Software Engineering and Project Management	This course aims to introduce the software engineering knowledge and project management methods that enterprises must possess in the face of digital transformation. Students will learn how to address the challenges of software development while managing project progress, resources, and risks.	3	Elective
Practical Applications of Generative AI	This course aims to delve into the concepts and practical applications of generative models. By introducing classical algorithms of generative models and supplementing with real-world case studies, the goal is to provide participants with a hands-on experience in the application of generative AI. The primary development language for implementation is Python, and the course includes integration of ChatGPT in both frontend service applications and backend systems.	3	Elective
Artificial Intelligence and Digital Innovation Projects	The main objective of this course is to explore the concepts and implementation of artificial intelligence (AI) using Python as the primary programming language, coupled with cloud development environments. Traditional machine learning methods will be covered, and students will have the opportunity to apply them in real-world projects.	3	Elective

Course Name	Course Outline	Credit Hours	Type
Advanced Database Systems	The goal of this course is to familiarize students with commonly used database theories and enable them to apply them to practical database design and the development of database application systems. As a graduate-level course, it covers basic database concepts as well as more advanced topics such as Entity-Relationship Model (ER Model), Relational Model, and advanced SQL query processing, along with NoSQL databases.	3	Required elective (choose 2 out of 3)
Web Services Technologies and Applications	This course aims to cultivate students who can integrate and develop both the front-end and back-end of websites, becoming advanced full-stack professionals. The course content includes an introduction to the .NET Core cross-platform open-source software framework, learning ASP.NET MVC web application development, and designing RESTful Web APIs with database integration.	3	Required elective (choose 2 out of 3)
Mobile Application Development	This course aims to teach students how to develop mobile applications using the Flutter framework. Students will learn to leverage the rich features and tools provided by Flutter, including UI design, cross-platform development, and state management. The course will cover practical case studies and projects, allowing students to gain a hands-on understanding of Flutter through real-world applications. The ultimate goal is to empower students to independently develop high-quality, feature-rich mobile applications and possess the capability to solve real-world problems.		Required elective (choose 2 out of 3)

Company Profile Overview

LION TRAVEL GROUP

- **Headquartered:** Neihu District of Taipei City

- **Capital:** 9.3 billion NTD / Listed on the stock or over-the-counter market

- Diversified into various sectors **including travel services, dining and leisure, media communication**, and **transportation**.

The above information is quoted from the relevant materials provided by Lion Technology Co., Ltd.https://www.liontech.com.tw

- **Lion Tech was established in 1991 as a subsidiary of the Lion Travel Group.**

- **Leveraging its IT expertise as the backbone of the group, Lion Tech develops and maintains various system platforms for the Lion Travel Group.**

- **The company is dedicated to cross-disciplinary integration in digital innovation, meeting the information management needs of enterprises in the new era.**

Service Offerings

Website Construction and Optimization	Customer Data Platforms	Tourism Service Mechanisms
ERP Solutions	Information Infrastructure Integration	Information Technology Staffing

(Enterprise Performance Management)

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Software Engineer

Data Science Engineer

- Assist in the development and maintenance of front-end website architecture, back-end production and sales processes and other functionalities for the entire group's websites (web, mobile).
- Help develop, maintain and integrate APIs for the websites and management information systems across the Group.
- Support the development and maintenance of integrated management information systems for the internal administration of the Group's general management, products, distribution channels and marketing.
- Work with the development team to reach consensus on information systems solutions through learning industry standards, gathering data and discussion to create management information systems.

- Optimize, maintain, and develop new features for APIs.
- Assist in the development and maintenance of web crawler programs.
- Plan, develop, and maintain data ETL (Extract, Transform, Load) processes.
- Analyze data and generate feasible solutions and insight reports.
- Develop application services related to LLM (Learning, Logic, Memory) Model.
- Train models related to LLM (Large Language Models).

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Tunghai Universtiy Overview

GENERAL INFORMATION

2023 University Ranking

16

Out of 152 universities in Taiwan
(Global Views Monthly)

Taiwan's First Private University

1955

From kindergarten to PhD

Department & Program

44

Enrolled Students

15,469

International Students

976

Tunghai Campus as Taiwan's Karuizawa – An Urban Oasis –

- It is famous for its beautiful park-like campus of 133 hectares and has the largest living and learning space per student in Taiwan.

- The school has the largest experimental farm in the central region, and the milk produced there is famous throughout Taiwan.

- Luce Chapel has become the geographical symbol of Taichung

- Academic buildings feature traditional and modern styles.
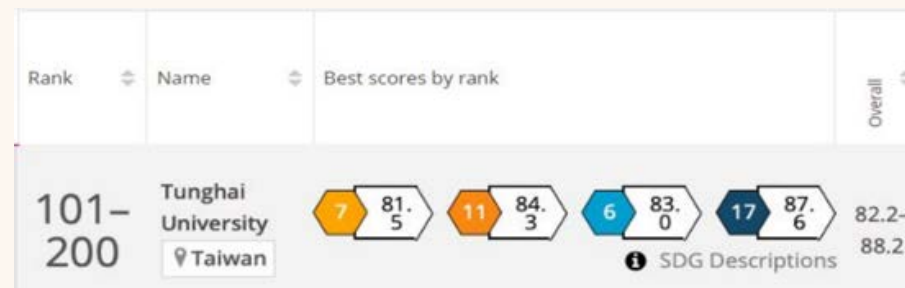
求真 篤信 力行

RANKINGS AND AWARDS

THE IMPACT RANKINGS 2023

101–200 Tunghai University ♀ Taiwan | 7 | 81.5 | 11 | 84.3 | 6 | 83.0 | 17 | 87.6 | 82.2–88.2
SDG Descriptions

The 2023 World University Impact Rankings by Times Higher Education (UK) ranked Tunghai University between 101-200th worldwide.

- Taiwan has a total of 47 universities listed, and the top ten are as follows in order:

Rankings	Scores	Rankings in Taiwan	Rankings in Private Universities	School Name
24	(93.5)	1		Cheng Kung University
67	(90.3)	2		Taiwan University
83	(89.4)	3		Yang Ming Chiao Tung University
101-200	(82.2-88.2)	4	1	Tungahi University

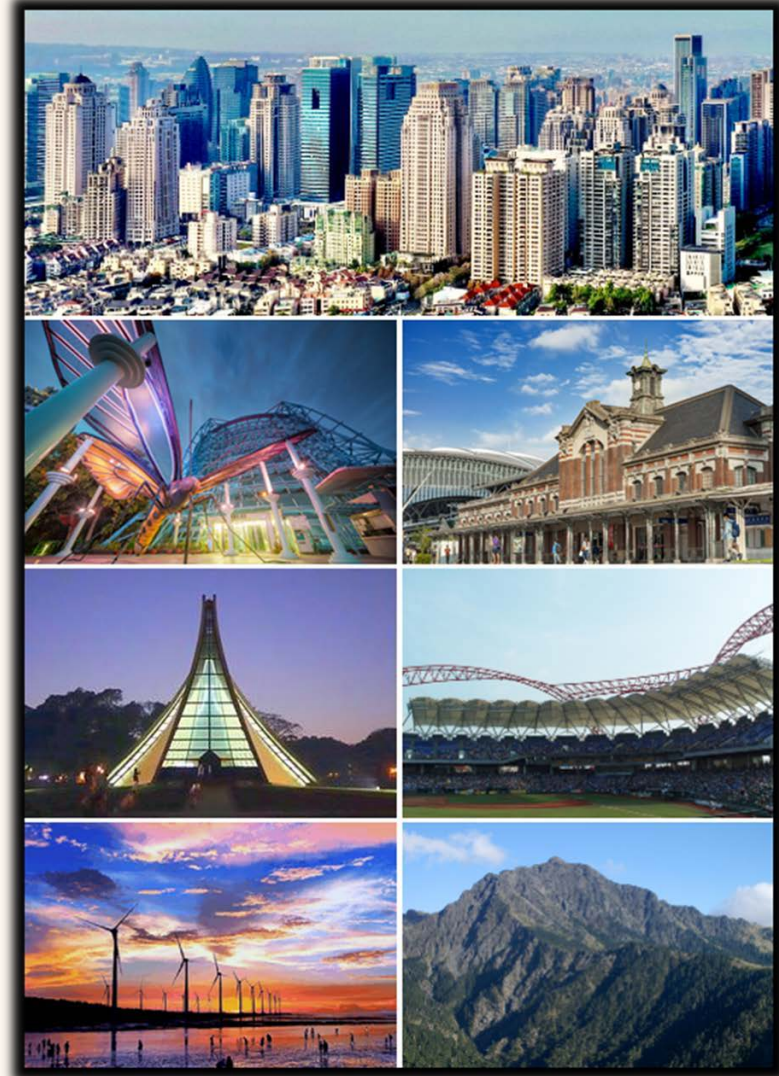| Rank	Name	Best scores by rank	Overall

Tunghai University 's College of Engineering ranks sixth in Taiwan in the "2023 World University Rankings - Engineering Field Indicators," making it the top private university in this category, after Taiwan University, Chiao Tung University, Cheng Kung University, and Taiwan University of Science and Technology.

Rankings	Rankings in Taiwan	Rankings in Private Universities	School Name
98	1		Taiwan University
126-150	2		Tsing Hua University
201-250	3		Yang Ming Chiao Tung University
401-500	4		Cheng Kung University
601-800	6	1	Chung Yuan Christian University
601-800	6	1	Tungahi University

TAICHUNG CITY

- Taichung is the second largest city in Taiwan and an important transportation hub connecting north and south of Taiwan.

- There are many sunny days throughout the year, and there are fewer natural disasters because it is surrounded by mountains.

- Taichung City is the **No. 1 city** that Taiwanese people want to live in! !

- The campus is located in the center of Taichung City, with convenient transportation and a good living environment around the campus.

求真 篤信 力行

TAICHUNG CITY: TRANSPORTATION

- Main means of transportation → Bus

  (If you have an easy card, you can use the bus for free within a 10km radius.)

- If you use Google Maps, you can go to various places for free!

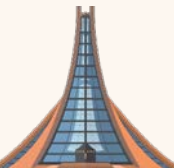- Others → train, Taiwan High Speed Rail (THSR), taxi, Uber

From Tunghai University

- ☐ 10 minutes to express bus stop
- ☐ 30 minutes to Taichung Station
- ☐ 30 minutes to Taiwan High Speed Rail
- ☐ 20 minutes to Taichung Airport

TAICHUNG CITY: GOURMET FOOD

- A night market directly accessible from the university (Tunghai Villa) Very convenient with all the restaurants!

- There is also the largest night market in Taichung in the suburban area, where shopping and Taiwanese gourmet food are lined up and lively every night.
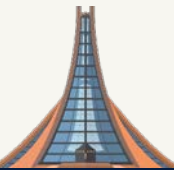
CAMPUS BUILDING
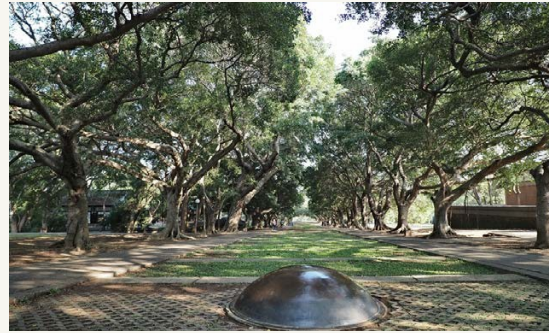
Tang-Inspired Architecture

Modern Architecture

CAMPUS SCENES

LUCE CHAPEL

CAMPUS MALL

OFFICE OF
INTERNATIONAL RELATIONS

EXPERIMENTAL FARM

ANIMALS ON CAMPUS: SQUIRREL,
DEER, PEACOCKS, ETC.

DONDA RIVER
RESTORATION PROJECT

求真 篤信 力行

CAMPUS SCALE

INTERNATIONAL STUDENT SUPPORT

- With more than 340 partner universities and 976 international students from 48 countries, it has an international environment. 。

- "International Buddy Program," "International Student Exchange Meeting," "free Chinese course for new students" and "soccer club", we provide many opportunities for daily life support and cultural exchange, and overseas internships are also possible.

- New student scholarships can be up to NT$100,000 per academic year.

2021 THU Blessing Ceremony for International Student Graduation

THU OIR Social Network APP

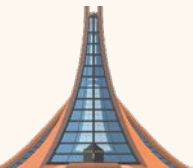**If you have any question
please don't hesitate to contact THUOIR.**
oir@thu.edu.tw

Tunghai University
Welcome to join us!!