

Taiwan leading the world's
supply chain of computer chips

Taiwan's world rankings in annual output categories in 2023

#1

Chip fabrication
(77.9%)

#1

Packaging and testing
(52.6%)

#2

Chip design
(21.3%)

NCKU

THE WORLD
UNIVERSITY
RANKINGS 2024

SDGs Impact Rankings

#1 in Taiwan
#25 Worldwide

AISSM

5 Graduate Programs

18 Top Industry Partners

100+ Academia-Industry Projects



智慧半導體及永續製造學院
Academy of Innovative Semiconductor
and Sustainable Manufacturing

5 Graduate Programs & Research Topics (selected)

Integrated Circuit Design (PICD)

- ◆ Smart IoT/AI IC Design
- ◆ Bio-Electronics/Sensor IC Design
- ◆ Memory IC/Computing in Memory
- ◆ Advanced Mixed-Signal/RF Communication/mm-Wave Sensor IC Design

Semiconductor Manufacturing Technology (PSMT)

- ◆ Advanced Technology Node
- ◆ Low Power AIoT Device
- ◆ Next-Generation Compound Semiconductor
- ◆ Advanced Memory Technology
- ◆ AI-Driven Design and Manufacturing
- ◆ Advanced Packaging and Heterogeneous Integration
- ◆ 2D Materials and Devices

Semiconductor Packaging and Testing (PSPT)

- ◆ Packaging design
- ◆ Packaging Materials/Process
- ◆ Smart manufacturers on packaging and testing
- ◆ Sustainable and economy packaging

Key Materials (KMAT)

- ◆ Development and application of 2D material
- ◆ Wide bandgap semiconductors
- ◆ Memory devices materials
- ◆ Functional materials

Smart and Sustainability Manufacturing (PSSM)

- ◆ Hydrogen-based Smelting Technology
- ◆ Intelligent Simulation-aided Process Design
- ◆ Circular Economy Technology
- ◆ CO2 Emission Reduction Technology
- ◆ Green Energy Devices

Core Competency: AI & Sustainability



Find more details on the NCKU AISSM Website:

CORE COMPETENCE	COURSES
AI-centric: AI / Big Data / Cloud Computing	Introduction to Artificial Intelligence
	Big Data and Cloud Computing
	Intelligent Manufacturing Systems
Energy-driven: Smart Manufacturing/ Energy Efficient / Carbon Net Zero	Introduction to Sustainable Energy
	Materials And Devices For Sustainable Energy

100+ Academia-Industry Projects with 18 Industry Partners (In alphabetic order)

Advanced Semiconductor Engineering Inc. (ASE)

Product/Service - semiconductor assembly, testing & packaging

China Petrochemical Development Corporation (CPDC)

Product/Service - specialty chemicals; polymerization; engineering plastic

China Steel Corporation (CSC)

Product/Service - steel plates; steel Bar and wire rods; hot-rolled coils & sheets; cold-rolled coils

Delta Electronics

Product/Service - power electronics; automation; ICT, energy infrastructure

Diodes Incorporated

Product/Service - application specific standard products within the broad discrete, logic, and analog semiconductor markets

Himax Technologies

Product/Service - integrated circuits

LARGAN Precision Co.,Ltd.

Product/Service - opto-mechanics, lens assembly, precision optical lens

LCY Chemical Corp.

Product/Service - petrochemical products

Macronix

Product/Service - serial NOR flash; parallel NOR flash; octabus memory; wide range vcc flash

Novatek Microelectronics Corp

Product/Service - display driver IC; SoC

Powerchip Semiconductor Manufacturing Corp. (PSMC)

Product/Service - DRAM, flash memory, foundry services

TAYA Group

Product/Service - energy & telecom cable; magnet wire; investment and copper management; construction

Transcom, Inc.

Product/Service - PA MMIC; FET transistor; amplifier, SSPA

TSMC

Product/Service - semiconductor contract manufacturing and design

United Microelectronics Corporation (UMC)

Product/Service - semiconductor foundry

WIN Semiconductors

Product/Service - GaAs MMIC

Windbond

Product/Service - mobile DRAM; specialty DRAM; flash memory

YAGEO

Product/Service - passive component

Industry Partners Link:



Semiconductor Summer School

NCKU AISSM hosts the Semiconductor Summer School annually, inviting international students to explore the professions of the semiconductor field, including IC design, manufacturing, and packaging, through expert lectures, hands-on training, and cultural experiences in Taiwan. Please find the latest information on the NCKU AISSM website.

2025 Summer School Website: 

Student Exchange Program

Students can apply for the exchange program to study for 1–2 semesters at NCKU, experience studying abroad, and enjoy Taiwanese culture. Please contact the Office of International Affairs of the home university for more information.

For more details, please visit

University-level SEP:  Academy-level SEP: 

NCKU AISSM Scholarship

Content \ Level	Master's Students	PhD Students
Monthly Stipend	NTD 16,000 (~USD 490)/ month, 12 months/ year	NTD 30,000 (~USD 920)/ month, 12 months/ year
Duration	Up to 2 years	Up to 4 years

Note:

The scholarship does not include a tuition waiver and the awardees are selected during application for admission.

Application Information

Application Schedule

Application Website: 

Timelines \ Enrolled Semester	Fall	Spring
Semester Period	Sep. – Jan.	Feb. – Jun.
Application Period	Mid Nov. – Mid Mar. <small>in the year before</small>	Jul. – Sep. <small>in the year before</small>
Admission Notification	Mid May	Mid Nov.

Application Inquiry: overseas@ncku.edu.tw