

# Curriculum and Course Map

## Departmental Core Courses (50 Credits Offered in Year 1-3)

### Theoretical and Fundamental

*Fundamental Science (2)*  
*General Physics (6)*  
*General Chemistry (6)*  
*Calculus (6)*  
*Applied Mathematics (6)*  
*Quantum Physics (3)*  
*Electromagnetics (3)*  
*Optical Electronics (3)*  
*Optics (3)*  
*Electrical Circuit Theory (2)*

### Experiments and Experiential Learning

*General Physics Lab (2)*  
*General Chemistry Lab (2)*  
*EM Circuit Experiments (1)*  
*Electronic Experiments (1)*  
*Optics and Quantum Lab (1)*  
*Optoelectronic Lab (1)*  
*Seminar (2)*



## General and Common Courses (32 Credits Offered in Year 1-2)

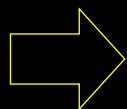
### General Courses:

*Foreign language (4+2, ) Chinese (4),*  
*Art and Humanities (4),*  
*Natural Sciences and Mathematics (2),*  
*Social Sciences (4),*  
*Interdisciplinary Program OR*  
*College Science Program (12 each)*



### Common Courses:

*Physical Education*  
*Defense Education*



## Departmental Elective Courses or Advanced Courses (46 Credit Hours)

### Data Analysis & Computational Physics



*Applied Mathematics*  
*Programming: Python, Matlab, Fortran*  
*Commercial Artificial Intelligence*  
*Large Language Model*  
*Inter-disciplinary Program*  
*URP Basic & Adv. (Computational Projects)*

### Quantum Physics & Quantum Computation



*Quantum Mechanics*  
*Mathematical Physics*  
*Statistical Physics*  
*Quantum Nanoscience*  
*Relativity*

*Intro. Quantum Comp.*  
*Quantum Comp. Quantum Computer*  
*Appl. URP Basic & Adv. Quantum Entanglement*

### Optical and Material Physics



*Holographic Optics*  
*Fourier Optics*  
*Electrodynamics*  
*Quantum Mechanics*  
*Atomic Physics*  
*URP Basic & Adv.*

*Semiconductor Technologies*  
*Characterization & Testing*  
*Vacuum Technology*  
*Condensed Matter Physics*  
*Thermal Physics*  
*URP Basic & Adv.*

### Electronics & Mechatronics



*Digital and Analog Electronics*  
*Advanced Circuit Theory*  
*Programming*  
*8051 Micro-Controller*  
*Arduino & Micro Bit*  
*Robotics*  
*URP Basic & Adv.*

## Undergraduate Research Program OR Internship Program

### Undergraduate Research Program (6 Credit Hours)

*Basic OR Basic and Advanced*

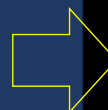
### Internship (6 Credit hours)

*Vacation Internship OR*

*Domestic (Overseas) Industrial & Research Attachment*

## All the Best

with love from  
 The Department of  
 Optoelectric Physics  
 Chinese Culture University



# What is Unique About Us

## Undergraduate Research Program

- Experiment and Design Projects
- Basic and Advanced URP
- 8 Credit Hours & Thesis Based
- Supervision & Mentoring
- Oral and Poster Presentation
- Exhibition and Competitions
- Collaboration with other Universities

## Internship

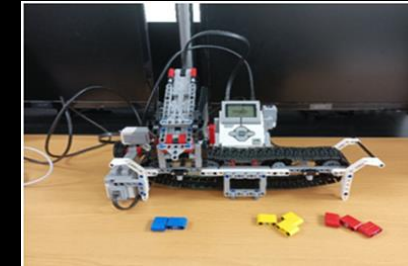
- 10 weeks of Vacation Internship
- On Completion of All Required Courses
- 3 Credit Hours in lieu of Advanced URP

## Exchange and International Program

- Departmental Program with NYP, Singapore
- College Level Program with Ryukyu University, Japan
- University Level Twinning Program



Micro-controller 8051 and Arduino



Color Sorter



Gyro Boy in Action



Our students visited Shenzhen University on vacation internship



Lecturers from the Nanyang Polytechnic of Singapore visited the Department of Physics in July 2023 to discuss overseas internship program.

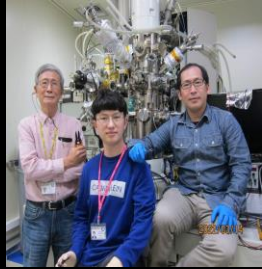


Professors from Ryukyus University, Japan visited the College of Science in 2023 to discuss future exchange program

# Career and Graduate Opportunities



National Taiwan University



Academia Sinica



National Cheng Kung

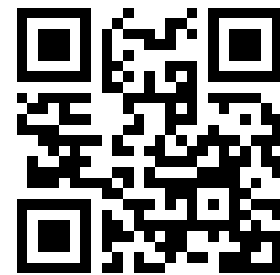


National Tsing Hua University



## Career Paths After Graduation

Entering graduate school, optoelectronic industry, semiconductor industry, IC design-related industries, electronic components-related industries, retail of mechanical equipment, etc.



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## Scholarship

Teaching Assistant Scholarship: For regular courses, laboratory courses, fully English-language courses, and special courses, the maximum amount is 20,000 yuan per semester.

Research Assistant Scholarship: Assisting professors in research project activities with the opportunity to be appointed as a research assistant. The scholarship amount is at least 6,000 yuan per month.

Research Competition Award Subsidy: Winning the Rui Cheng Cup Poster and Paper Competition comes with a prize of 4,000 yuan. External competition subsidies are also available. College and University Financial Aid for Underprivileged Students (Secure Learning Program), Financial Assistance for Economically Disadvantaged Students, Outstanding Learning Scholarship.

Huaqiang Scholarship: For outstanding academic achievements, a maximum of 8,000 yuan per semester is awarded.

Dai Yun Gui Scholarship: 10,000 yuan.

Liu Haotian Scholarship: 6,000 yuan.



Integrated Circuit Design



Data Analysis and Artificial Intelligence



3 students recruited