BRIEF HISTORY

The department of CSIE at National Cheng Kung University is the first high-ranking academic institute in southern Taiwan. The emphasis is placed on information engineering and computing science. The department began with the establishment of MS program in August 1987, followed by the institution of its Ph.D. program in August 1992. The undergraduate program was inaugurated in August 1997 with a later expansion from one class to two classes in the 2002-2003 academic year. Currently the department has 391 students in the undergraduate program, 251 students in the MS program and 130 students in the Ph.D. program. The department is planning to scale up the size of the undergraduate program by admitting 50 more students in the near future. The number of graduate students will also be increased to satisfy the demands of high-tech talents in Taiwan and abroad.

The faculty of the department consists of 25 full-time instructors (including 11 full professors, five associate professors and nine assistant professors) and three part-time instructors (including one full professor, two assistant professors and one expert) and a visiting professor from JPL. They specialize in various major disciplines of computer science and information engineering. All the professors and graduate students in the department actively engage themselves in academic activities, and frequently present their research results in prestigious journals and conferences. Many of the professors have received academic honors, such as the Outstanding Research Award of the National Science Council. Meanwhile, graduate students have performed well in various competitions in and out of the campus. The department is scheduled to increase the number of its teaching faculty to 26 in four years. In addition to the full-time faculty, the department invites professors from other relevant departments to offer courses for its students.
With its emphasis on curriculum planning and seminar courses, the department has assembled its experienced instructors to form a committee of teaching and curriculum. Their responsibility is to plan curriculum for each program in terms of study years and needs. Under its well-established curriculum, the department expects to cultivate professional information talents who are able to work independently on research and practical affairs. Meanwhile, the department is committed to its purpose to develop up-to-date information technology, to elevate the level of information technology in the country, and to nurture professional information talents for the information industry. The department will endeavor to fulfill its purpose to boost the prosperity in the information industry.

**Past and present chairpersons:**

Pei-Yin Chen  (Aug 2012-Present)

**TEACHING OBJECTIVES**

The department aims to provide a comprehensive higher education of information engineering. To keep up with the development of global industries in the 21st century, the department has designated a comprehensive curriculum reflecting the trend of information technology and covering all the disciplines of computing software and hardware engineering. The undergraduate program, which places emphasis on fundamental education and practical coursework, aims to help students intensify their thinking capability and raise their learning quality. The graduate program with emphasis on both theory and applications is intended to help students develop their capability of doing research and solving problems. With well-qualified teaching faculty, well-equipped facilities and excellent learning environment, the department aims to cultivate professional information talents who are responsible, optimistic, and capable of independent thinking, in the
hope that they can share the responsibility for the construction of national information with the commitment to continuing their improvement and application of professional expertise.

**FACULTY**

Professors: 19  
Associate Professors: 8  
Assistant Professor: 7  
Adjunct Specialist: 1

**Professors:**

- Pei-Yin Chen  
  (Ph.D., National Cheng Kung University, Tainan, Taiwan)  
  Dept. of Electrical Engineering
- Tzone-Lih Hwang  
  (Ph.D., University of South Western Louisiana)  
  Computer Engineering
- Yau-Hwang Kuo  
  (Ph.D., National Cheng-Kung University)  
  Electrical Engineering
- Chiang Lee  
  (Ph.D., University of Florida)  
  Electrical Engineering
- Chung-Ming Huang  
  (Ph.D., The Ohio State University)  
  Electrical Engineering
- Chung-Hsien Wu  
  (Ph.D., National Cheng-Kung University) (Chairman)  
  Dept. of Electrical Engineering
- Chih-Ping Chu  
  (Ph.D., Louisiana State University)  
  Computer Science
- Tong-Yee Lee  
  (Ph.D., Washington State University)  
  Computer Engineering/Science
- Jung-Hsien Chiang  
  (Ph.D., University of Missouri)  
  Computer Engineering
- Sheng-Tzong Cheng  
  (Ph.D., University of Maryland)  
  Dept. of Computer and Information Science
- Sun-Yuan Hsieh  
  (Ph.D., National Taiwan Univ., Taiwan)  
  Dept. of Computer Science and Information Engineering
- Shin-Mu Vincent Tseng  
  (Ph.D., National Chiao Tung University, Taiwan)  
  Computer and Information Science
- Yung-Nien Sun  
  (Ph.D., University of Pittsburgh)
Yeim-Kuan Chang (Ph.D., Texas A&M Univ.)
Department of Computer Science

Shu-Mei Guo (Ph.D., University of Houston, USA)
Dept. of Computer and System Engineering

Shyh-Hau Wang (Ph.D., The Pennsylvania State University, US)
Dept. of Bioengineering

Jenn-Jier James Lien (Ph.D., University of Pittsburgh)
Dept. of Electrical Engineering

Hung-Chang Hsiao (Ph.D., National Tsing Hua University, Hsinchu, Taiwan)
Dept. of Computer Science

Associate Professor:
Ching-Fang Hsu (Ph.D., National Tsing Hua University, Hsinchu, Taiwan)
Dept. of Computer Science

Chung-Ping Young (Ph.D., University of Missouri, USA)
Department of Electrical Engineering

Chuan-Ching Sue (Ph.D., National Taiwan University, Taipei, Taiwan)
Dept. of Electrical Engineering

Wen-Hsiang Lu (Ph.D., National Chiao Tung University, Hsinchu, Taiwan)
Dept. of Computer Science and Information Engineering

Hung-Yu Kao (Ph.D., National Taiwan University, Taipei, Taiwan)
Dept. of Electrical Engineering

Sheng-Fu Liang (Ph.D., National Chiao-Tung University, Taiwan)
Dept. of Electrical & Control Eng.

David Chang (Ph.D., National Chiao Tung University, Taiwan)
Dept. of Computer Science

Tsung-Yi Ho (Ph.D., National Taiwan University, Taipei, Taiwan)
Dept. of Electrical Engineering

Assistant Professors:
Kun-Chan Lan (Ph.D., University of Southern California, US)  
Dept. of Computer Science  
Ing-Chao Lin (Ph.D., The Pennsylvania State University, US)  
Dept. of Computer Science and Engineering  
Ming-Long Wu (Ph.D., National Taiwan University, Taipei, Taiwan)  
Dept. of Electrical Engineering  
Meng-Hsun Tsai (Ph.D., National Chiao Tung University, Taiwan)  
Dept. of Computer Science  
Kun-Ta Chuang (Ph.D., National Taiwan University, Taipei, Taiwan)  
Graduate Institute of Communication Engineering  
Tzu-Cheng Chao (Ph.D., National Taiwan University, Taipei, Taiwan)  
Dept. of Electrical Engineering  
Min-Chun Hu (Ph.D., National Taiwan University, Taipei, Taiwan)  
Graduate Institute of Network  

Adjunct Specialist  
Chaw-Kwei Hung (Ph.D., University of New Mexico, USA)  
Electrical Engineering and Computer Science  

FACILITIES AND EQUIPMENTS  
Research plans of this department are conducted in all laboratories. The department cooperates with many well-known institutes, including the National Science Council, Institute for Information Industry, Industrial Technology Research Institute, and the university's hospital, etc. The current goal of the department is to enhance the collaboration between various institutes and extend the application domain in information technology.  
The laboratories in the department are listed as follows:  
01. Laboratory name: Multimedia Human Machine Communication Lab  
Manager: Chung-Hsien Wu  
* Research Facilities  
1. Sun and SG workstations  
* Research Areas  
1. Computer speech processing
2. Visual C++, Matlab
3. ESPS Speech Development System
4. TK Logic Analyzer & Oscilloscope
5. Image Scanner
6. TI320c30 Development System
7. PC Pentium
8. HP Laser Printer
9. Sun Sparc 5
10. HP workstation

2. Communication Aids for Hearing/Speech Impaired
3. Multimodal Human-Computer Interface
4. Multimedia information retrieval
5. Speaker Recognition
6. Speech Understanding
7. Face Tracking
8. Face Recognition
9. Information Retrieval
10. Natural Language Processing
11. Robust and Adaptive Algorithms
12. Pattern Recognition
13. Neural Networks
14. Statistical Signal Processing
15. Array Signal Processing
16. Image Processing
17. Multimedia Communication

02. Laboratory name: Visual System Lab
Manager: Yung-Nien Sun and Tong-Yee Lee

* Research Facilities
  1. Sun, HP, SGI Workstations
  2. PC/LAN
  3. Image Printer
  4. Image Processing System
  5. Image Grabbing System
  6. Image Recording System
  7. Open Inventor drawing software
  8. Sense VR development kit
  9. VR peripheral equipment
  10. Sony LVR/LVS 5000
  11. Linear/Matrix Camera System

* Research Areas
  1. Image Processing
  2. Computer Vision
  3. Medical Imaging
  4. Industrial Vision
  5. Medical Informatics
  6. Visual Technology
  7. 3D Game Design
  8. 3D Non-Photo-realistic Rendering
  9. Virtual Environment
  11. Rendering System

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11. Computer Graphics & Visualization
   Virtual Reality (Image-based v.s. Geometry-based)
12. Surgical Simulation
13. Distributed & Collaborative Virtual Environment Parallel Processing

03. Laboratory name: Information Security Lab
    Manager: Tzone Lih Hwang
    * Research Facilities
    1. Laser Printer
    2. NT Network
    3. UPS
    4. Liquid Crystal Display
    5. IC Card System
    6. Network Card
    7. Image Scanner
    8. Router
    * Research Areas
    1. Network Security
    2. Information Security
    3. Entrance Guarding System
    4. Error Correction Code
    5. Certification Authority

04. Laboratory name: Advanced Data Systems Laboratory
    Manager: Chiang Lee
    * Research Facilities
    1. PC-586
    2. HP Laser Jet 3 printer
    3. Sun Sparc workstation
    4. MSDN Software
    5. CSIM 19 Software
    6. IBM Intelligent Miner for Data Version 6.1
    7. SPSS Answer Tree 3.1
    8. Silicon Genetics GeneSpring 5.0
    9. Insightful Miner
    10. Stat Soft STATISTICA 6.0
    * Research Areas
    1. Skyline Query Processing
    2. Social Network and Recommendation Systems
    3. Geographic Information Systems
    4. Cloud Computing
    5. Sensor Networks and Data Management
    6. Web Information Systems
### 05. Laboratory name: Advanced Data Systems Laboratory
Manager: Shin-Mu Tseng

* Research Facilities
- 1. PC
- 2. Server
- 3. Laptop
- 4. Silicon Genetics GeneSpring 5.0
- 5. IBM Intelligent Miner for Data Version 6.1
- 6. Statistica Data Miner
- 7. Insightful Miner
- 8. SPSS Answer Tree
- 9. Access Point
- 10. MSDN Software
- 11. IBM DB2

* Research Areas
- 1. Data Mining
- 2. Biomedical Informatics
- 3. Mobile and internet database
- 4. Multimedia Database
- 5. Microarray analysis
- 6. Bioinformatics Data Mining System
- 7. LogMiner for Web and Mobile Systems
- 8. Automatic and High-Performance Data Mining Algorithms
- 9. Intelligent and Personalized Guiding System
- 10. Location Mining System for Mobile Web Systems
- 11. Multimedia Data Mining System
- 12. Time Series Analysis System
- 13. Intelligent Object Tracking System for Sensor Networks

### 06. Laboratory name: Intelligent System and Media Processing Lab
Manager: Yau-Hwang Kuo

* Research Facilities
- 1. SUN Workstations
- 2. PC Pentium & Pentium Pro double CPU LAN
- 3. Synopsys EDA Tool
- 4. Viewlogic EDA Tool

* Research Areas
- 1. Broadband Communication
- 2. Knowledge-base System
- 3. Fuzzy System
- 4. Object-Oriented Design
- 5. Web Service Technology
5. Cadence EDA Tool
6. Xilinx FPGA Development System
7. MSDN
8. Interactive CATV Systems
9. Matlab
10. Object-Oriented System Developing Environment
11. MICE／Logic Analyzer／Scope
12. RDM／PAL／Single-chip Programmer
13. TIL Shell Fuzzy System Development Tool
14. Color Scanner
15. Laser Printers
16. Color Printer
17. Oscillograph
18. Logic Analyzer

07. Laboratory name: Intelligent Information Retrieval Lab
Manager: Jung-Hsien Chiang
* Research Facilities
1. SUN Workstations
2. Xilinx FPGA Development System
3. Interactive CATV Systems
4. Matlab
* Research Areas
1. Android mobile computing
2. Cancer Analyze
3. Chromatin remodeling
4. Bioinformatics
5. Information Retrieval

08. Laboratory name: Intelligent Digital Image Processing Lab
Manager: Jung-Hsien Chiang and Shu-Mei Guo
* Research Facilities
1. PC Pentium & Pentium Pro double CPU LAN
* Research Areas
1. Digital image process
2. System engineering
2. Image processing hardware and software
3. Matlab
4. Multi-media display monitor

09. Laboratory name: Multimedia Mobile Networks Lab
Manager: Chung-Ming Huang
* Research Facilities
  1. SUN Ultra SPARC
  2. SUN SPARC 20
  3. SUN SPARC 10
  4. SUN SPARC 5
  5. SUN SPARC 2
  6. SUN SPARC ELC
* Research Areas
  1. Broadband and Mobile Internet Systems
  2. Interactive Mobile Multimedia Software
  3. Wireless and Mobile Communion Software
  4. Media Streaming

7. Research Results
  8. Transputer
  9. Apple & Epson Laser printer
  10. An Estelle-based Incremental protocol Design System (IPDS)
  11. Macintosh
  12. Scanner
  13. OCCAM Compiler
  14. Parallex Video Capture and Display
  15. Pentium PC 20
  16. Notebook 12
  17. Ipaq PDA 6
  18. 802-11x Access Point 10
  19. Laser Printer 3
  20. Color Laser Printer 1
  21. IPV4/IPV6 Router 6
  22. Sun Sparc Workstation 11
  23. Camecorder 3
10. Laboratory name: Software Development Lab
   Manager: Chih-Ping Chu
   * Research Facilities * Research Areas
   1. Pentium-4 PCs 1. Software Engineering
   2. HP Laser Printer 2. Parallelizing Compilers
   4. CASE Tools 4. Internet Computing
   5. Sun Blade 2000 Workstations
   6. PC-cluster

11. Laboratory name: Computer and Internet Architecture Lab
    Manager: Yeim-Kuan Chang
    * Research Facilities * Research Areas
    1. HP 2210 duplex laser printer 1. Router & Switch Design
    2. PIC microcontroller ROM writer 2. Scalable Web Server
    4. Gigabit Switch 4. QoS
    5. ENP2505-Intel IXP network processor 5. Network Processor Design
    7. Multiprocessor Network and Cache
    8. Coherence Design
    9. Fault-Tolerance

12. Laboratory name: Wireless and Mobile Communications LAB
    Manager: Sheng-Tzong Cheng
    * Research Facilities * Research Areas
    1. SUN Workstation 1. Mobile IP / Wireless TCP
    2. PC 2. Internetworking of Mobile
    3. WAP handset/Gateway 3. Telecommunication Networks
    4. Enterprise-class server 4. (GSM/GPRS) and the Internet
    5. Wireless LAN AP/Cards 5. Home RF / Bluetooth / Wireless LAN
7. Real-time server
8. Notebooks
9. PDA
10. Digital Camera

7. Wireless Multimedia Services and Platform
8. Real-Time / Embedded Operating System
9. Location-based Services Mobile Agent Platform

13. Laboratory name: Studio of Computer Research on Music and Multimedia LAB
   Manager: Wen Yu Su
   * Research Facilities
   * Research Areas
   1. Physical Modeling Music Synthesis
   2. MPEG-4 Codec design
   3. Media processor design
   4. Digital Color image processing
   5. Digital amplifier design
   6. Human Computer Interface

14. Laboratory name: Interconnection Networks and High-performance Computing Laboratory LAB
   Manager: Sun-Yuan Hsieh
   * Research Facilities
   * Research Areas
   1. Celeron PC
   2. Pentium PC
   3. Laser Printer
   4. Design and analysis of algorithms
   5. Fault-tolerant Embeddings
   3. PRAM algorithms
   4. Graph-theoretic interconnection networks
   5. Computational Molecular biology
   6. Peer to Peer

15. Laboratory name: Robotics Lab
   Manager: Jenn-Jer James Lien
   * Research Facilities
   * Research Areas
   1. Real-Time Surveillance System
   1. Intelligent Vehicle: A Statistical
2. PCs/Notebooks
3. Printer
4. Capture Card/Digitizer
5. Pan-Tilt-Zoom Cameras.

Approach for Real-Time Car Detection and Tracking.

4. Real-Time Facial Feature Detection and Feature Point Location Estimation.
5. Face/Object Detection and Recognition under Different Poses.
6. Rigid and Non-Rigid Motion Analysis.
8. Object/Events Analysis from Video.
9. 3D from Video.
10. Connection between Computer Vision (Analysis) and Computer Graphics (Synthesis).
11. MPEG-4 and MPEG-7.
13. Game for Cellular Phone via Internet.
15. Biomedical Applications.
16. Laboratory name: High-Speed Networks LAB  
   Manager: Ching-Fang Hsu
   * Research Facilities
   1. PC Pentium
   2. HP Printer
   * Research Areas
   1. Optical Networks
   2. SIP-based VoIP
   3. ENUM
   3. IPv6

17. Laboratory name: Home Automation, Networking, and Entertainment Laboratory  
   Manager: Chung-Ping Young
   * Research Facilities
   1. Personal Computers
   2. Laser Printers
   3. Motorola 68HC16/HC12/HC08 Evaluation Boards
   4. Zilog Z8 Development Kit
   5. PDAs
   6. Square D Circuit Monitor
   * Research Areas
   1. Real-time embedded system
   2. Open source kernel and device driver
   3. Microprocessor architecture and interface
   4. Home Automation/Networking
   5. Virtual Instrumentation
   6. Transducer networks

18. Lab name: Dependable Computing & Networking Laboratory  
   Manager: Chuan-Ching Sue
   * Research Facilities
   1. PC 5 sets
   2. Notebook 1 set
   3. Laser printer 1 set
   * Research Areas
   1. Dependable WDM Networks
   2. Network Area Storage
   3. Mobile IP Based Computing
   4. Quantum Computing

19. Lab name: Digital IC design Laboratory  
   Manager: Pei-Yin Chen
   * Research Facilities
   * Research Areas
1. PC/HP-Server 16 sets
2. Laser Printer 3 sets
3. Logic Analyzer

1. VLSI/FPGA Design
2. Data/Video Compression
3. Embedded System

20. Lab name: Web Mining and Multilingual Knowledge System Laboratory
Manager: Wen-Hsiang Lu
* Research Facilities
1. Personal Computers
2. Laser Printers
3. Notebooks
4. Scanners

* Research Areas
1. Web Mining and Text Mining
2. Information Retrieval
3. Natural Language Processing
4. Machine Translation

21. Lab name: Intelligent Knowledge Management Laboratory
Manager: Hung-Yu Kao
* Research Facilities
1. PC 10 sets
2. Server 2 sets
3. Notebook 3 sets
4. Laser printer 3 sets

* Research Areas
1. Web Information Retrieval/Extraction
2. Search Engine Fundamental
3. Bioinformatics
4. Semantic Content Network

22. Lab name: Computer System and Distributed Computing Laboratory
Manager: Hung-Chang Hsiao
* Research Facilities
1. Server
2. PC
3. Notebook
4. PDA
5. Laser printer

* Research Areas
1. Peer-to-Peer Computing
2. Overlay Network
3. Grid Computing
4. Computer Architecture

23. Lab name: Biomedical Ultrasound System Laboratory
Manager: Shyh-Hau Wang
* Research Facilities
1. Ultrasound pulse signals transmitter

* Research Areas
1. High-frequency High-resolution
<table>
<thead>
<tr>
<th>Lab Number</th>
<th>Lab Name</th>
<th>Manager</th>
<th>Research Facilities</th>
<th>Research Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>Neural Computing and Brain Computer Interface Lab</td>
<td>Sheng-Fu Liang</td>
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<td>* Research Facilities</td>
<td>* Research Areas</td>
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<td></td>
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<td></td>
<td>1.40-ch EEG Recording System</td>
<td>1. Biomedical signal process</td>
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<td></td>
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<td>2. 3D Digitizer</td>
<td>2. Machine learning</td>
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<td></td>
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<td>3. Dual-CPU PCs</td>
<td>3. Multimedia system development</td>
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<td></td>
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<td>4. Computation Servers</td>
<td>4. Portable biomedical sensing and feedback system</td>
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<td>5. 40-channel EEG Scalp Cap</td>
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<td>6. Zigbee Development System</td>
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<td>7. Dual-Core Embedded System</td>
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<td>8. Disk Array</td>
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<tr>
<td>25</td>
<td>Operating System and Embedded System Lab</td>
<td>David Chang</td>
<td>* Research Facilities</td>
<td>* Research Areas</td>
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<tr>
<td></td>
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<td></td>
<td>1. PC * 9</td>
<td>1. File and Storage Systems</td>
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<td>2. FPGA embedded system</td>
<td>2. Operating System Customizations</td>
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<td>3. NAS storage system</td>
<td>3. Virtual Machines</td>
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<td>4. ARM-DSP embedded system * 8</td>
<td>4. Embedded Systems for Bio</td>
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<tr>
<td></td>
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<td></td>
<td>5. ARM-FPGA development kit * 5</td>
<td>Applications</td>
</tr>
<tr>
<td>26</td>
<td>Electronic Design Automation Laboratory</td>
<td>Tsung-Yi Ho</td>
<td>* Research Facilities</td>
<td>* Research Areas</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1. PC * 16</td>
<td>1. Design automation for nanometer ICs</td>
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<td>2. Laser Printer * 2</td>
<td>2. Design automation for SoC Designs</td>
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<td>3. Laptop * 10</td>
<td>3. Design automation for emerging technologies</td>
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<td>4. Server * 2</td>
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</tr>
</tbody>
</table>
27. Lab name: Networks System Laboratory
   Manager: Kun-Chan Lan
   * Research Facilities
   1. pc x 16, laptop x 13
   2. printer x 2
   3. WiMAX MP16.3500 x 3
   4. wireless sensor (TAROKO) x 60
   5. network simulator (QUALNET with WiMAX module) x 1
   6. iRobot x 10
   * Research Areas
   1. Vehicular network
   2. Realistic Wireless Network Simulation
   3. Wireless Sensor Network

28. Lab name: IC Design and Automation Lab
   Manager: Ing-Chao Lin
   * Research Facilities
   1. VLSI reliable simulation system
   2. System chip simulation system
   3. HP Workstation
   4. PC
   5. Wireless Router
   6. Laser printer
   * Research Areas
   1. VLSI Design /System-on-Chip Design and Automation
   2. Low Power System Design
   3. Power Aware Reliable System Design

29. Lab name: Biomedical Imaging Laboratory
   Manager: Ming-Long Wu
   * Research Facilities
   1. PC x 8
   2. Workstation x 3
   3. Laptop x 3
   4. Server x 2
   5. 1.5 Tesla and 3 Tesla MRI system
   * Research Areas
   1. Development of Magnetic Resonance Imaging (MRI) methods.
   2. Novel neuroimaging methods for human brain including acquisition
   3. Reconstruction and data analysis.

30. Lab name: Intelligent Mobile Service Laboratory
Manager: Meng-Hsun Tsai

* Research Facilities
1. Scanner
2. Smart phone
3. Server

* Research Areas
1. Service Continuity
3. Single Radio VCC (SRVCC)
4. Heterogeneous Network Inter-Cell Interference Coordination

FUTURE DEVELOPMENT

Following the trend of information technology that is being promoted by the government, the information industry in Taiwan is flourishing. To meet the demand of talents in society and elevate the level of information industry, the department engages itself in the cultivation of information engineering talents as well as in the research and development of technology related to computing software and hardware engineering. Besides, the department makes use of its research facilities to provide services to the industrial and business sectors and the government, establishing communication channels between the academic circle and the industrial and business sector. It is intended to help industries and businesses upgrade their levels, in hopes to further increase national and global competitiveness.

The medium-and-long term development plan of the department is described in three aspects as follows.

I. Teaching

The priorities are set on (1) improving the qualification of teaching faculty, the in-depth study in professional disciplines; (2) increasing classes and admission quota of graduate students as part of the effort to expand the department; (3) sufficing teaching and research facilities to satisfy the needs of teachers and students; (4) expanding the scope of coursework to broaden the vision of study; (5) promoting network courses to provide an on-line teaching and learning environment; (6) modifying the teaching and research areas into an excellent learning environment.
In recent years, as part of its effort to upgrade the level of research and teaching, the department has organized integrated projects to apply for subsidies from the Ministry of Education. The projects approved and subsidized by the MOE for the 2002-2003 academic year include: (1) the project for the establishment and adjustment of classes within a special department in the 2002-2003 academic year, increasing 3 faculty members, a quota of 50 students and budget. Since the 2002-2003 academic year two instructors have been hired and two classes have been added in the undergraduate program. (2) In line with the national silicon island project and the project for the increase of student recruitments in the departments of information science, electronics, optoelectronics, and telecommunication, the department increased 2 faculty members and 10 MS students in the 2002-2003 academic year. In the implementation of the projects, the department is expected to cultivate 5 to 10 high-tech information talents. (3) In compliance with “Project B: Talent Cultivation at the departments of technology in College and University” under the MOE 2002 project for the priority development in the promotion of college competitiveness, the department in the 2002-2003 academic year employed two experts from the industry as part-time teachers in the promotion of exchanges between the academic and the industry. In the meantime, the department was granted subsidies to improve teaching facilities, to increase laboratory equipment and to upgrade its teaching quality. Besides, the department has hired a visiting expert under the subsidy of the National Science Council in the hope that his expertise will facilitate the work on the integration of CMMI capacity maturity.

To have the curriculum keep up with the global trend of research and development and achieve practical teaching effects, the department assigns its new teaching faculty to offer 6 to 8 new courses every year. And the department has set up its Curriculum Committee, composed of experienced instructors, to study the demand of new courses and coordinate the assignment of instructors. Additionally, stimulated by the requirement, instructors can propose, new courses, such as Theory and Technology on Global Information Network Communication Agreement, Human-Computer
To meet the urgent demand of information talents in southern Taiwan, the department is scheduled to increase its undergraduate classes from two to three within the next four years. With a total of 1000 students in three classes, number of faculty members will be increased to 45. The department now occupies a total area of 432 sq. meters, which is short of future usage. Therefore the department plans to expand the usable space to a total of 1,224 sq. meters, including undergraduate-level classrooms and laboratories, graduate student laboratories, new faculty offices, and graduate-level research rooms. The plan for the construction and expansion of the department has been approved by the Engineering College Committee for Space Planning as the top priority. The demolition and reconstruction of the old buildings have been documented in the university’s medium-long term plan for the construction of school buildings. If the project goes well as planned, the department will settle its space shortage issue and construct the best and largest-scale environment for information engineering education.

II. Research

The priorities of the department are (1) strengthening academic research capability and upgrading research level; (2) a strong bid for research projects and extension education based on the cooperation between the industry, the government and the academics to elevate the research capabilities of teachers and students and the reputation of the department; and (3) providing information technology supports and high-tech talents for the Tainan Science-based Industrial Park. The department involves its efforts of research and development in ten major disciplines, each of which has its own laboratory, including Intelligent System/Media Processing Lab, Multimedia Human-Machine Communication Lab, Wireless and Mobile Communications Lab, Database Lab, Computer Aided Software Development Lab, Visual System Lab, Information Security Lab, Studio of Computer Research on Music and Multimedia, oratory Multimedia Mobile Networks Lab, Algorithms & Computation Theory Lab, Computer & Internet Architecture Lab, Robotics
Laboratory, Remote Sensing Image Processing Lab, High-Speed Networks Lab. Each laboratory is specialized in its own research.

III. Internationalization

The priorities are set on (1) the organization and participation of international conferences to increase international exchanges and elevate international status; (2) the implementation of English-taught courses to help students raise their international competitiveness; and (3) the recruitment of foreign students to promote the international reputation of the department. Accordingly, the department strives to invite experts and scholars for short-term lectures, to bid for the organization of international conferences, to enhance international cooperation, and to apply for international academic projects. In addition to academic internationalization, the department has designated a portion of graduate courses to be taught in English as part of its efforts to help students intensify their foreign language ability and raise their international competitiveness. In this semester a total of 5 instructors offers 6 English-taught graduate courses for students to strengthen their English reading ability.

CURRICULUM

Master Program:
Minimum credits required for graduation: 24

Doctor Programs:
Minimum credits required for graduation: 18

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### Undergraduate Program:

Minimum credits required for graduation: 139

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