



國立陽明交通大學
NATIONAL YANG MING CHIAO TUNG UNIVERSITY

生物醫學暨工程學院

SCHOOL OF
BIOMEDICAL SCIENCE AND ENGINEERING

醫學生物技術暨檢驗學系
生物醫學工程學系
物理治療暨輔助科技學系
生物醫學影像暨放射科學系
生醫光電所



生物醫學暨工程學院
School of Biomedical Science and Engineering

生物醫學暨工程學院

國立陽明大學生物醫學暨工程學院成立於1994年，旨培育國家優秀的醫學與工程跨域人才，且推動跨領域、跨系所國際化英文授課課程，並著重產業應用及跨領域轉譯醫學研發，培育人才投入生技產業之開發，本院亦積極推廣科普教育，更鼓勵學生出國深造，如德國海德堡大學雙聯學位，及法國 UTT 雙聯學位。

醫學生物技術暨檢驗學系

共有13位專任老師，分別從事不同領域基礎醫學及轉譯醫學之研究，當中包括病毒、腫瘤及疾病、血液等領域的研究，強化臨床及產業之應用，以培育優秀醫檢師及國內生醫產業人才。

生物醫學工程學系

將工程原理與設計理念應用於生物及醫學領域，提供醫療診斷 / 治療 / 照護之需求，配合國家政策及產業升級，全面發展醫療器材 (Med Tech)。如醫療植入物 (人工關節 / 牙根 / 骨釘骨板) 設計開發，AI 於醫療之應用，醫療感測器晶片開發及藥物釋放 / 載體 / 生醫材料開發等，本系以培育優秀醫療器材之尖端醫學工程師為使命。

物理治療暨輔助科技學系

亞洲首創結合物理治療與輔助科技六年制物理治療學士學位課程，提供完整碩、博士學位課程。課程強調全方位醫療保健體系教育，深化臨床訓練並連結相關產業領域的見習課程，落實鑑別診斷、行政管理經驗與臨床推理與決策等能力，培養學生專業獨立性與競爭力。

生物醫學影像暨放射科學系

生醫放射影像對疾病診斷治療具重要意義，本系著重於放射科學的基礎教育，以解決重大生理問題為導向，涵蓋跨領域放射治療學及影像診斷學之軟硬體理論與實務設計，強調轉譯醫學及診療合一的教學研究，以訓練具獨立思考及操作能力之臨床放射醫學人才。

生醫光電研究所及生醫光電暨奈米科學學士學位學程

國內第一個培育生醫光電研發人才的研究所及大學部學位學程。從分子、次細胞和細胞層級乃至動物模式、臨床病患的關鍵生醫問題發展具有前瞻性和關鍵性的智慧光電醫療影像與奈米檢測之科技。整合物理化學生醫等基礎學科與光電及AI資訊之跨領域學習，提供國際化專業師資與卓越教學研究環境，以培育具國際觀之生醫光電未來科技專業與領導人才。

教學

- 生技醫藥產業創新創業
- 生物資訊學
- 高等蛋白質體學
- 寡核酸之應用
- 基因表現之調控
- 幹細胞與癌症
- 生物技術於醫學之應用
- 感測器原理與生醫應用
- 腦波辨識與腦機介面應用
- 醫療器材設計與開發實務
- 生醫材料表面技術
- 高等材料力學
- 組織工程與再生醫學
- 腫瘤醫學的工程與科技應用
- 電腦輔助工程分析
- 虛擬實境理論與實務
- 輔具設計與製造
- 皮拉提斯復健
- 心肺物理治療學
- 義肢矯具與實作
- 運動健康促進研究
- 輔助科技服務於長期照顧實務應用
- 放射診斷儀器學
- 蒙地卡羅理論
- 粒子遷移計算
- 轉譯分子影像研究
- 複合放射射核種造影與定量
- 粒子加速器的醫學應用
- 核醫藥物暨放射免疫分析
- VBA 程式設計 - 儀器分析數據
- 微米製造技術
- 光學斷層影像原理與應用
- LabVIEW 程式設計與應用
- 醫用光學系統
- 光學細胞顯微科技

國際化

- 雙聯學位**
 - 德國海德堡大學雙聯學位
 - 法國 UTT 雙聯學位
- 見實習或學術交流**
 - 芬蘭 JAMK 應用科技大學
 - 美國伊凡斯維爾大學
 - 日本新潟健康福祉大學
 - 日本奈良先端科學技術大学院大學
 - 日本愛知醫科大學
 - 中國崑山杜克大學
 - 香港理工大學
 - 中國泰山醫學院
 - 印度馬尼帕爾高等教育學院

研究

- 感染症研究
- 癌症研究
- 精準醫學
- 盲人視力重建 / 聾啞聽力及聲音重建
- 幹細胞研究與神經再生
- 奈米材料與人造器官
- 微創手術與人工關節
- 生物感測器之研發
- 人工感覺器官的研發
- 生醫光電影像
- 奈微生醫感測
- 光電工程
- 光學奈米操控
- 生物物理化學
- 光譜術
- 光電治療
- 模擬與訊號處理
- 銀髮族照護與遠距醫療
- 肌肉骨骼 / 神經 / 心肺 / 兒童物理治療
- 3D列印
- 輔具研發與復健科技
- 身心障礙與輔具服務及政策
- 運動科學與健康促進
- 高齡 / 婦女健康與長期照護
- 放射治療與輻射防護
- 影像與儀器物理
- 生醫影像與訊號處理
- 分子醫學影像
- 核醫及磁振藥物研發與應用
- 輻射生物、分子及癌症生物
- 放射診斷、放射醫療、核子醫學診斷與治療

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SCHOOL OF
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生物醫學暨工程學院 School of Biomedical Science and Engineering

生醫工程館三樓 305 室
Biomedical Engineering Building, Rm 305 (3rd floor)
☎ 886-2-2820-1091
🌐 <https://sbmse.ym.edu.tw/bin/home.php>

醫學生物技術暨檢驗學系 Department of Biotechnology and Laboratory Science in Medicine

生醫工程館二樓 203 室
Biomedical Engineering Building, Rm 203 (2nd floor)
☎ 886-2-2826-7000 # 5319
🌐 <https://mt.ym.edu.tw/bin/home.php>

生物醫學工程學系 Department of Biomedical Engineering

實驗大樓三樓 A201 室
Experimental Building, Rm A201 (3rd floor)
☎ 886-2-2826-7000 # 5368
🌐 <https://bme.ym.edu.tw/index.php/zh-tw/>

物理治療暨輔助科技學系 Department of Physical Therapy and Assistive Technology

生醫工程館五樓 509 室
Biomedical Engineering Building, Rm 509 (5th floor)
☎ 886-2-2821-0271
🌐 <https://www.ym.edu.tw/ptat/index.htm>

生物醫學影像暨放射科學系 Department of Biomedical Imaging and Radiological Sciences

生醫工程館四樓 454 室
Biomedical Engineering Building, Rm 454 (4th floor)
☎ 886-2-2826-7000 # 7217
🌐 <https://birs.ym.edu.tw/bin/home.php>

生醫光電所 Institute of Biophotonics

傳統醫學大樓甲樓六樓 608 室
Traditional Medicine Building, Rm 608 (6th floor)
☎ 886-2-2826-7000 # 5707, 5669
🌐 <https://bioph.ym.edu.tw/>



SCHOOL OF
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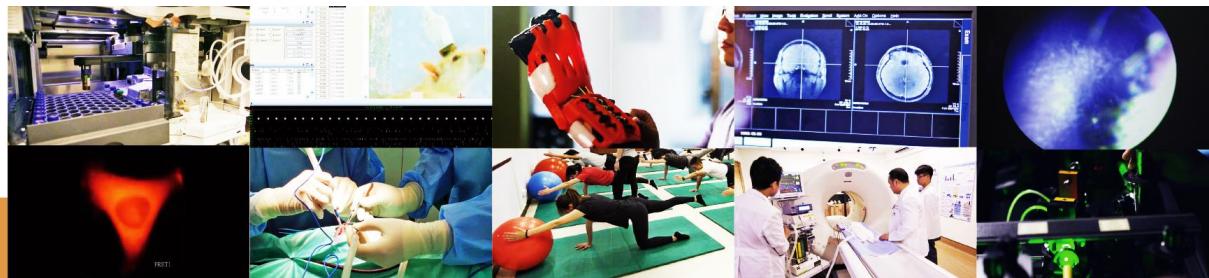
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Institute of Biophotonics



School of Biomedical Science and Engineering

The School of Biomedical Science and Engineering of National Yang-Ming University has been founded in 1994. It nurtures excellent interdisciplinary talents in the fields of medicine and engineering. The school values centripetal force of departments, faculties and students, promotes interdisciplinary and interdepartmental English courses, as well as industrial application and interdisciplinary research and developments of translational medicine. The school nurtures talents to develop the biotechnology industry and actively promotes popular science education. The School encourages students to study abroad and joining Double Degree Programs with Germany's Heidelberg University and France's Université de Technologie de Troyes (UTT).

Department of Biotechnology and Laboratory
Science in Medicine

The Department of Biotechnology and Laboratory Science in Medicine has 13 full-time faculties engaged in different areas of basic science, biomedical and translational medicine research. It consists of virology group, bacteriology group, disease group, cancer group and hematology group. We strengthen clinical and industrial applications to cultivate excellent medical technologies and domestic biomedical talents.

Department of Biomedical Engineering

The aim of Department of Biomedical Engineering is to apply engineering principles and design concepts to the fields of biology and medicine to solve clinical problems including those in medical diagnosis/clinical treatment and cares. It complies with national policies and supports industrial upgrading for developing medical devices, such as medical implants (artificial joints / dental implant / bone screw & plate), AI in medical applications, medical chip sensor and drug delivery / carrier / biomaterials. The mission of the Biomedical Engineering is to cultivate excellent engineers in the field of medical devices.

Department of Physical Therapy and Assistive
Technology

Our department is the first in Asia that offers 6-year Doctor of Physical Therapy program which combines Physical Therapy and Assistive Technology. We also offer complete graduate programs at master and PhD levels. Our curriculum emphasizes on comprehensive medical and health education, deepening clinical training that connects with related industry via internships, implementing differential diagnosis, business administration and management, as well as clinical reasoning and decision making. Our goal is to cultivate student's professional independence and competitiveness, and to fulfill the needs of the society.

Department of Biomedical Imaging and Radiological
Sciences

Biomedical imaging and radiological sciences are critical to diagnoses and treatment of many diseases. Our department focus on the basic education of radiological sciences, including multi-disciplinary theories and practical designs of radiotherapies and medical imaging diagnosis to solve important pathophysiological problems. Specifically, we emphasize teaching of researches of translational medicine and theragnostic to cultivate radiographers and radiologists who will possess independent abilities to operate different modalities in clinics.

Institute of Biophotonics

The Institute of Biophotonics integrates high-tech fields including biomedical science and optics as well as the development of new medical diagnostic techniques. Our department has professional teachers and laboratories which gives the students the opportunity to interact with the international community. With this opportunity the department cultivates excellent research talents in the fields of biophotonics and nano sciences.

TEACHING

- Innovation and Entrepreneurship Course
- Bioinformatics
- Advanced Proteomics
- The Applications of Oligonucleotide
- Special Topics on Stem Cell and Cancer
- Biotechnology in Medicine
- Principles of Sensors & Biomedical Application
- Classification of Brain Signals and Application to Brain Computer Interface
- Practical Skills of the Design and Development of Medical Devices
- Surface Technologies for Biomaterial Applications
- Advanced Material Mechanics
- Tissue Engineering and Regenerative Medicine
- Science and Engineering Technology in Clinical Oncology
- Computer Aided Engineering
- Virtual Reality: Theorems & Applications
- Design and Manufacture of Assistive Devices

- Pilates for Rehabilitation
- Cardiopulmonary Physical Therapy
- Prosthetics and Orthotics / Practicum in Prosthetics and Orthotics
- Application of Assistive Technology Services in Long-Term Care
- Instrumentations for Diagnostic Radiology
- Special Topics in Monte Carlo Calculations
- Particle Transport
- Translational Molecular Imaging Research
- Hybrid Radionuclide Imaging and Quantification
- Medical Application of Particle Accelerator Applications
- Radiopharmaceuticals and Radioimmunoassay Analysis
- VBA Programming for Instrumental Analysis
- Micro-nano Fabrication Technology
- Principle and Applications of Optical Tomography
- LabVIEW Programming and Applications
- Biomedical Optical System
- Optical Microscopy for Living Cells

INTERNATIONALIZATION

[Double Degree]

- University of Heidelberg (Germany)

[Internship & International Cooperation]

- JAMK University of Applied Sciences (Finland)
- University of Evansville (U.S.A)
- Niigata University of Health and Welfare (Japan)
- Nara Institute of Science and Technology (Japan)

- University of Technology of Troyes (France)

- Aichi Medical University (Japan)
- Duke Kunshan University (China)
- The Hong Kong Polytechnic University (China)
- Shandong First Medical University (China)
- Manipal Academy of Higher Education (India)

RESEARCH

- Infectious Diseases research
- cancer research
- Precision Medicine
- Blind reconstruction / Deaf-mute hearing and sound reconstruction
- Stem cell research and nerve regeneration
- Nanomaterial and artificial organs
- Minimally invasive surgery and artificial joint
- Research and development of biosensor
- Research and development of Artificial sensory organ
- Biomaging
- Biosensing
- Optical Engineering
- Nanomanipulation
- Biophysics and Chemistry
- Spectroscopy
- Phototherapy
- Simulation and Signal Processing

- Elderly caring and Telemedicine
- Musculoskeletal / nervous / Pediatric Physical Therapy
- 3D printing
- Development of assistive devices and technology of rehabilitation
- Service and policies of disability and assistive devices
- Improvement of sports science and health
- Long-term care for elderly women
- Radiotherapy and radioprotection
- Image and equipment physics biomedical imaging and signal processing
- Molecular medicine
- Development and application of nuclear medicine and magnetic vibration drugs
- Radiobiology, molecular and cancer biology
- Radiological diagnosis, radio therapy, diagnosis and treatment of nuclear Medicine

