生物科技學士學位學程

教育目標

生物科技是影響本世紀產業發展最重要的關鍵技術之一，在醫學上可用於改善診斷方法、疫苗製造、基因治療、藥物開發；在農業上可用於植物抗病、品種改良，也可應用於民生工業、環境保育等。為了培育生物科技產業發展人才，本校特成立生物科技學士學位學程，結合了農業暨自然資源學院及校內其他學院的系所，成為一個跨領域的教學單位。本學程強調跨領域學習，旨在培育能獨立思考、能自我學習，以及能對農業、環境、醫藥、民生工業等領域進行科技整合的新一代生物科技人才。

課程規劃

依據教育目標訂定必選修科目。必修核心科目包括普通化學、有機化學（含實驗）、普通微生物學、生物化學（含實驗）、生物技術導論、生物資訊、分子生物學、細胞生物學、專題研究、生物技術產官學講座與專題討論。專業選修科目依照屬性可分為五大群，分別為「植物生物科技領域」、「動物生物科技領域」、「微生物生物科技領域」、「生物資訊暨生醫機電領域」與「智財暨行銷管理領域」。本學程科目設計多樣化，適合學生探索自己的性向能力與進行跨領域學習。

主要研究領域

本學程教師群來自於農業暨自然資源學院、生命科學院、獸醫學院、理學院、工學院與法政學院等，目前約有80位校內專任教師。主要研究領域包含：生技在醫藥與農業應用的智財分析、國際專利法、天然藥物開發、植物病理、病毒學、生物化學工程、生物資訊、基因工程、遺傳學、內分泌學、生態工程、生物晶片、基因體與蛋白質體學、應用微生物、土壤生物技術、農產品行銷、生醫感測器、生物醫學微分析系統等。

教研成果

跨領域整合是本學程辦學的核心思維，教學特色包括：

◆科目多元，學生可適性發展

◆必修精簡，鼓勵跨領域學習

◆學用並重，奠定專題研究能力

◆建置智財法規等實務課程，有利畢業生銜接上游研發與下游產業發展。

▲歡迎你成為生技的菁英份子
Welcome new members of the program.

▲生技家族成員雖少但感情特別好
Small family, close relationship.

▲產業專家蒞臨講座
Industry leaders sharing experiences.

▲學生分享實驗室學習心得
Students sharing experiences from their laboratory internships.

▲專注聆聽同學專題研究報告
Peer-to-peer seminar.

▲學習實驗操作的方法及技術
Practicing laboratory techniques.

▲彈性選課機制可培養適合自己的專業能力與素養
Flexible curriculum, endless possibilities.

▲跨領域學習讓我們畢業後可依自己的專長適性發展。
nterdisciplinary learning environment.

Mission

Biotechnology is one of the most crucial technologies of this century, and it influences our daily lives in many ways. In the medical area, biotechnology is used for developing more effective diagnostic methods, vaccines, and new drugs. In agriculture, biotechnology is used for breeding crops with novel traits, such as pathogen and abiotic stress resistance. Biotechnology is also applicable to the commodity industry and environment protection. The purpose of the bachelor program is to integrate the biotechnology field-related professors of NCHU, specifically with the mission to train students into exercising independent thinking and self-learning, and in becoming competent to support the development of biotechnology in Taiwan.

Curriculum

The curriculum is designed according to the program's teaching mission. Compulsory courses include General Chemistry, Organic Chemistry (plus laboratory work), General Microbiology, Biological Chemistry (plus laboratory work), Introduction to Biotechnology, Bioinformatics, Molecular Biology, Cell Biology, Special Topic Research, Perspectives on Biotechnology from both Private and Public Sectors, and Seminars. The diverse range of elective courses can be grouped into five categories: plant biotechnology, animal biotechnology, microbial biotechnology, bioinformatics and biomedical engineering, and intellectual propriety and management. Students can choose any elective courses based on their interests. Interdisciplinary learning is encouraged.

Achievements

The main theme of the program is to provide an integrated curriculum for biotechnology education. Highlights are as follows:

Diverse courses are provided, enabling students to develop their own careers based on their interests.

Obligatory courses are minimized, providing students more scope for interdisciplinary learning.

Fundamental and application are treated equally, allowing students to have a strong background for future research.

Courses bridging the gap between upstream research and industries are being constantly introduced. These include Engineering, Bioinformatics, Genetic Engineering, Genetics, Endocrinology, Biochip, Genomics, Genomics and Proteomics, Applied Microbiology, Soil Biotechnology, Agricultural Marketing, Biosensors, and Biomedical Microanalysis System.

Core Research Topics

Teachers related to biotechnology research from the College of Agriculture and Natural Resources (CANR), College of Life Science, College of Veterinary Medicine, College of Science, College of Engineering, and College of Law and Politics were invited to join the program. The program currently has approximately 80 faculty members. Core research topics include the Analysis of Intellectual Property in Medicine and Agriculture, International Patent Law, Natural Medicine Development, Plant Pathology, Virology, and Biochemistry.

▲師生參訪生技公司
Field trip to biotechnology companies.

▲學程教師群會議
Faculty members in a meeting.

▲在舞台上盡情揮灑青春活力
Young, free and happy on stage.

▲在運動場上鍛鍊強健的體魄並培養團隊默契
Teamwork on the sports ground.

▲熱鬧又精彩的聖誕晚會
Christmas party.

▲學生籌辦生技週展～圓滿成功
Student-arranged exhibition on biotechnology.