

國立中央大學領域專長模組課程申請計畫書

※一、領域專長模組課程基本說明:

1.課程名稱	腦與心智科學 Brain and Mind Science
2.負責單位	認知所
3.模組諮詢教師	徐慈妤
4.預計開始施行時間	115 學年度第 1 學期

※二、學習目標與預期效益

此腦與心智科學領域專長模組課程專為對初階學生設計，強調理論與應用的平衡，並聚焦於腦與心智科學領域中的發展與問題解決觀點，為學生的長期發展打下全面基礎。

目標一：基礎知識與創新能力培養

培養學生扎實的理論基礎與問題分析能力，從核心概念出發，幫助學生深刻理解心智科學問題本質，並建立其在腦與心智科學相關領域進行研究與創新探索的能力。重視基礎理論的掌握，使學生能夠有效應用這些知識於更高階的學術挑戰中。

目標二:構築腦與心智科學的核心理論

系統介紹並深化腦與心智科學領域中的關鍵理論，幫助學生全面掌握該領域的核心概念，包括知覺處理、注意力與執行功能、記憶與學習機制、語言認知處理等。透過有條理的理論學習，學生能夠在未來面對複雜的認知與行為問題時，靈活運用這些理論進行深入分析與創新設計。

目標三:強化腦與心智科學實務應用與問題解決能力

將理論知識結合實驗設計與數據分析,鼓勵學生將所學知識運用於認知功能評估、心智科技開發等實際問題中，並進一步提升實作與解決問題的能力。此目標旨在綜合運用學生的專業知識，增強他們在腦科學研究的基礎能力，為未來的新興產業建立問題解決的能力。

This specialized module in Brain and Mind Sciences is designed for introductory-level students, emphasizing a balance between theory and application. The curriculum focuses on developmental perspectives and problem-solving approaches within the field of brain and mind sciences, establishing a comprehensive foundation for students' long-term growth.

Objective 1: Building Foundational Knowledge and Innovative Capacity

Cultivate students' solid theoretical grounding and analytical skills. Starting from core concepts, this objective helps students deeply understand the fundamental nature of questions in mind sciences while developing their capacity for research and innovative exploration in brain and mind

science-related fields. Emphasis is placed on mastering foundational theories, enabling students to effectively apply this knowledge to more advanced academic challenges.

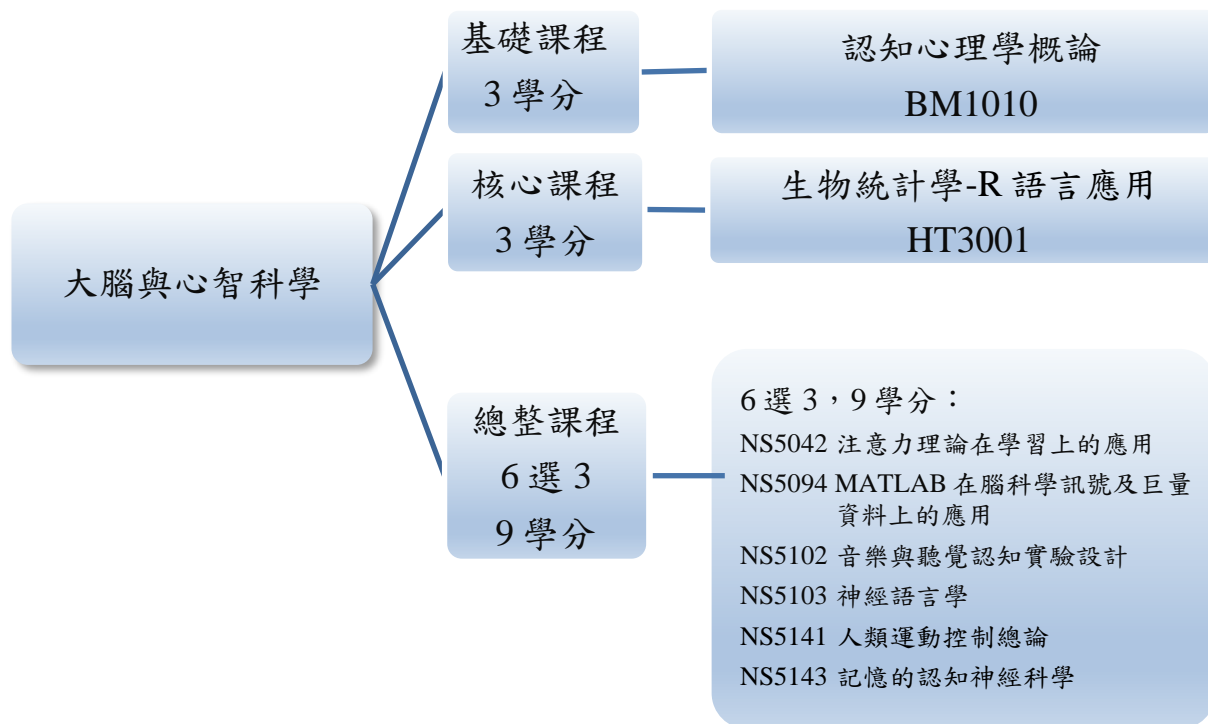
Objective 2: Constructing Core Theories in Brain and Mind Sciences

Systematically introduce and deepen understanding of key theories in brain and mind sciences, helping students comprehensively grasp the field's core concepts, including perceptual processing, attention and executive function, memory and learning mechanisms, and language and cognitive processing. Through structured theoretical learning, students will be equipped to flexibly apply these theories for in-depth analysis and innovative design when confronting complex cognitive and behavioral questions in the future.

Objective 3: Strengthening Practical Application and Problem-Solving Skills in Brain and Mind Sciences

Integrate theoretical knowledge with experimental design and data analysis, encouraging students to apply what they have learned to real-world problems such as cognitive function assessment and mind-technology development. This objective further enhances students' practical and problem-solving abilities. The aim is to synthesize students' professional knowledge, strengthen their foundational competencies in brain science research, and build problem-solving capabilities for emerging industries of the future.

※三、課程架構圖



※四、課程列表

	課號 Course Code	課程名稱 Course Title	學分數 Credits
	基礎課程，3 學分		
1	BM1010	認知心理學概論	3
	核心課程，3 學分		
2	HT3001	生物統計學-R 語言應用	3
	總整課程 6 選 3，9 學分		
3	NS5042	注意力理論在學習上的應用	3
4	NS5094	MATLAB 在腦科學訊號及巨量資料上的應用	3
5	NS5102	音樂與聽覺認知實驗設計	3
6	NS5103	神經語言學	3
7	NS5141	人類運動控制總論	3
8	NS5143	記憶的認知神經科學	3
本模組最低須修習 5 門課程，15 學分			