中國醫藥大學　醫學院 生物醫學研究所博士班　必選修課程學分表 109 學年度入學適用

China Medical University Graduate Institute of Biomedical Sciences

Curriculum for Doctoral Program

The confirmation form of graduation credits for 109 school year

Course Name	Teacher	Type	Credits	First year		Second year		Remarks
				Semester				
				1	2	1	2	
現代生物醫學講座 Lecture on modern biomedicine		Required	4	1	1	1	1	校級必修 School-level required course
研究倫理 Research ethics		Required	0	0				校級必修 School-level required course
實驗室安全 Laboratory safety		Required	0	0				校級必修 School-level required course
分子醫學 Molecular medicine		Required	4	4				院級必修 College-level required course
專題討論(一)(二)(三) Seminar(I)(II)(III)	全所老師 All the teachers	Required	3	1	1	1		全英授課 Full-English course
博士論文 Ph.D.Thesis		Required					12	
合計　必修總學分 Total Required Credits			11					
專題討論(四)Seminar(IV)		Elected	1				1	Full-English course
分子化學暨細胞生物學組 Molecular And Cellular Biology Group								
進階分子細胞生物學 Advanced molecular cell biology	陳慧婕等 Hui-Jye Chen etc.	Elected	2	2				分生組核心選修課 MCB Group Core Course 全英授課 Full-English course

分子藥理學專題討論(一)(二)(三)(四) Seminar in molecular pharmacology(I)(II)(II)(IV)	湯智昕 Chih-Hsin Tang	Elected	4	1	1	1	1	**全英授課** **Full-English course**
細胞骨架學專題討論(一)(二) Seminar in cytoskeleton (I)(II)	陳慧婕 Hui-Jye Chen	Elected	2	1	1			
進階心臟分子生化學專題討論(一)(二) Advanced seminar in molecular cardiology (I)(II)(II)(IV)	黃志揚 Chih-Yang Huang	Elected	2	1	1			**全英授課** **Full-English course**
進階生物技術研究 Advanced biomedical research technique	洪慧珊 Huei-Shan Hung	Elected	2	2				
進階計算生物學 Advanced computational biology	陸志豪 Chih-Hao Lu	Elected	2	2				
高等幹細胞生物學 Advanced stem cell biology	朱志成 Jyh-Cherng Ju	Elected	2	2				
分子影像 Molecular imaging	謝佳宏 Chia-Hung Hsieh	Elected	2	2				
高等奈米生物醫學 Advanced nanobiomedicine	洪慧珊 Huei-Shan Hung	Elected	2		2			
高等囊泡運輸 Advanced vesicular trafficking	陳慧婕 Hui-Jye Chen	Elected	2		2			
基因轉殖及剔除鼠技術 Special topics on transgenic & knockout mice	劉詩平 Shih-Ping Liu	Elected	2		2			
進階胚複製與多能性幹細胞 Advanced embryo cloning and pluripotent stem cells	朱志成 Jyh-Cherng Ju	Elected	2		2			**全英授課** **Full-English course**
電腦輔助藥物設計 Computer-aided drug design	陸志豪 Chih-Hao Lu	Elected	2		2			

進階動脈粥狀硬化 Advanced molecular pathology of atherosclerosis	汪貴珍 Guei-Jane Wang	Elected	2		2			
奈米醫學 Nanomedicine s	劉彥良 Yen-Liang Liu	Elected	2		2			
神經科學組 Neural Science Group								
認知神經科學 Cognitive neuroscience	簡惠玲等 Sarina Hui-Lin Chien etc.	Elected	3	3				神經科學組核心選修課，可供碩士班上修 NS Group Core Course Upper-level Courses for Graduate Student
神經科學 Neuroscience	吳東川等 Dong Chuan Wu etc.	Elected	2	2				神經科學組核心選修課，可供碩士班上修 NS Group Core Course Upper-level Courses for Graduate Student
人類臉孔知覺 Human face perception	簡惠玲 Sarina Hui-Lin Chien	Elected	2	2				**全英授課 Full-English course**
身心功能之生物介面(一)(二)(三)(四) Mind-body interface(I)(II)(III)(IV)	蘇冠賓 Kuan-Pin Su	Elected	8	2	2	2	2	
知覺與注意力專題討論 (一)(二)(三)(四) Seminar in perception and attention (I)(II)(III)(IV)	李金鈴 Jing-Ling Li	Elected	4	1	1	1	1	
轉譯精神醫學專題討論 (一)(二)(三)(四) Seminars of translational psychiatry (I)(II)(III)(IV)	蘇冠賓 Kuan-Pin Su	Elected	4	1	1	1	1	**全英授課 Full-English course**
發育神經科學 Developmental Neuroscience	張璨云 Sunny LY Chang	Elected	2		2			

離子通道及相關疾病 Ion channels and disease	吳東川 Dong Chuan Wu	Elected	2		2			全英授課 Full-English course
微生物暨免疫學組 Microbiology and Immunology Group								
自體免疫疾病研究專討 (一)(二)(三)(四)Special topics on autoimmune diseases (I)(II)(III)(IV)	徐婕琳 Jye-Lin Hsu	Elected	4	1	1	1	1	微免組核心選修課 MI Group Core Course 全英授課 Full-English course
發炎與先天免疫專題討論 (一)(二)(三)(四)Seminar in inflammation and innate immunity(I)(II)(III)(IV)	陳惠珍 Hui-Chen Chen	Elected	4	1	1	1	1	
神經免疫學 Neuroimmunology	傅如輝 Ru-Huei Fu	Elected	2	2				全英授課 Full-English course
貴重儀器原理與實習 Principle and practice of biomedical Instruments	蘇文琪等 Wen-Chi Su etc.	Elected	2	2				暑期上課 Summer vacation course
致病病毒特論 Special topics of pathogenic viruses	蘇文琪 Wen-Chi Su	Elected	2	2				
醫療大資料庫論文寫作 Writing SCI papers based on big health databases	許重義 Chung Y. Hsu	Elected	2	2				
腫瘤細胞生物學研究法 Biomethdology of tumor cell biology	黃文欽 Wen-Chin Huang	Elected	2	2				全英授課 Full-English course
光遺傳學 Optogenetics	傅如輝 Ru-Huei Fu	Elected	2		2			
論文寫作與研究計劃撰寫 Scientific writing	陳惠珍 Hui-Chen Chen	Elected	1		1			
腫瘤發展與惡化 Tumor development & progression	黃文欽 Wen-Chin Huang	Elected	2		2			全英授課 Full-English course
腫瘤醫學 Tumor medicine	謝佳宏	Elected	2		2			

	Chia-Hung Hsieh							
螢光顯微技術 Fluorescence microscopy techniques	劉彥良 Yen-Liang Liu	Elected	2	2				全英授課 Full-English course
腫瘤醫學組 Tumor Medicine Group								
臨床癌症與轉譯醫學 Clinical oncology & translation medicine	黃偉謙 Wei-Chien Huang	Elected	2	2				腫瘤醫學組核心選修課 TM Group Core Course
分子癌症生物學 Molecular Cancer biology	余永倫 Yung-Luen Yu	Elected	2	2				腫瘤醫學組核心選修課 TM Group Core Course
次世代定序數據分析(一)(二) Data analysis of next generation sequencing (I) (II)	鄭維中 Wei-Chung Cheng	Elected	4	2	2			
染色質重組與癌症(一)(二) Chromatin remodeling and cancer (I)(II)	鄒瑞煌 Ruey-Hwang Chou	Elected	2	1	1			
高等癌症藥理學(一)(二) Advanced cancer pharmacology (I)(II)	黃偉謙 Wei-Chien Huang	Elected	4	2	2			全英授課 Full-English course
基因不穩定性與癌症 Genomic instability and cancer	王紹椿 Shao-Chun Wang	Elected	2	2				全英授課 Full-English course
進階致癌蛋白轉譯後修飾(一)(二) Advanced oncoprotein post-translational modification (I)(II)(III)(IV)	余永倫 Yung-Luen Yu	Elected	2	1	1			
進階傳統中草藥與腫瘤治療(一)(二)(三)(四) Advanced traditional chinese herbal medicines and cancer treatment (I)(II)(II)(IV)	劉哲育 Jer-Yuh Liu	Elected	4	1	1	1	1	全英授課 Full-English course

癌症外遺傳學(一)(二) Cancer epigenetics (I)(II)	黃偉謙 Wei-Chien Huang	Elected	2	1	1			
癌症表遺傳體學(一)(二) Cancer epigenomics(I)(II)	黃偉謙 Wei-Chien Huang	Elected	2	1	1			
癌症訊號傳遞 Cancer signaling pathways	鄒瑞煌 Ruey-Hwang Chou	Elected	2	2				
癌症細胞死亡之調控 Regulation of cell death in cancer	陳雅惠 Ya-Huey Chen	Elected	2		2			
癌症免疫學之轉譯研究 Transnational immunology in cancer research	吳恒祥 Heng-Hsiung Wu	Elected	2		2			**全英授課** **Full-English course**
臨床醫學組 **Clinical Medicine Group**								
臨床與基礎研究實習 (一)(二)Clinical & basic research practice (I)(II)	李繼源 Chi-Yuan Li	Elected	2	1	1			臨床醫學組核心選修課 CM Group Core Course
臨床與基礎醫學整合課程 Integrated course inclinical & basic medicine	藍先元等 Hsien-Yuan Lane etc.	Elected	2	2				**暑假上課** **Summer vacation course** 臨床醫學組核心選修課 CM Group Core Course
轉譯醫學期刊論文解析 Translational journal paper analysis	佘玉萍 Yuh-Pyng Sher	Elected	2		2			臨床醫學組核心選修課 CM Group Core Course
研究設計與計畫 Study design & proposal	李繼源 Chi-Yuan Li	Elected	2	2				臨床醫學組核心選修課 CM Group Core Course
實證轉譯醫學 Translational medicine in practice	馬文隆 Wen-Lung Ma	Elected	2	2				臨床醫學組核心選修課 CM Group Core Course
轉譯科學論文之寫作、發表與賞析 Getting start writing, submitting and evaluating translational scientific papers	包大龘 Ba-Tian Bau	Elected	2	2				臨床醫學組核心選修課 CM Group Core Course

轉譯醫學之理論與實務 (一)(二)Theory and practice of translation medicine (I)(II)	包大牖 Ba-Tian Bau	Elected	2	1	1			臨床醫學組核心選修課 CM Group Core Course
臨床試驗 Clinical trials	許重義 Chung Y. Hsu	Elected	2		2			臨床醫學組核心選修課 CM Group Core Course
進階血管與代謝(一)(二)Advanced blood vessel and metabolism (I)(II)	汪貴珍等 Guei-Jane Wang etc.	Elected	4	2	2			
進階心血管藥理學 Advanced cardiovascular pharmacology	沈明毅等 Ming-Yi Shen etc.	Elected	2		2			
神經電生理期刊討論 (一)(二)(三)(四)Neuroelectrophysiology (I)(II)(III)(IV)	吳東川 Dong Chuan Wu	Elected	4	1	1	1	1	
藥理學之藥物研發專題討論 (一)(二) Seminar in drug discovery (I)(II)	賴威達 Ted Weita Lai	Elected	2	1	1			
進階分子生物技術原理與應用 Advanced principles and applications of molecular biotechnology	蘇文琪 Wen-Chi Su	Elected	2	2				暑假上課 Summer vacation course
分子生物技術實作 Molecular biotechniques practice	蘇文琪 Wen-Chi Su	Elected	2	2				暑假上課 Summer vacation course
轉譯內分泌醫學期刊討論 (一)(二)(三)(四) Seminar in the modern translational endocrinology(I)(II)(III)(IV)	馬文隆 Wen-Lung Ma	Elected	4	1	1	1	1	
心臟血管科學期刊討論(一) (二)Advanced seminar in cardiovascular sciences (I) (II)	汪貴珍 Guei-Jane Wang	Elected	2	1	1			

注意事項：

一、教育目標：(1)培養醫學科學家。(2)培育具有國際觀之人才。

二、109 學年度入學新生實施，本所修業 2 年至 7 年，畢業至少需**修習 31 學分**始可畢業。**必修 11 學分(含校級必修、院級必修、所定必修)，博士論文 12 學分、選修 8 學分{需有 4 學分為本所開設之學分(含各組核心選修課程)}**。另其他可依學生興趣及研究方向修習本所各組選修課程或他所之課程。

三、各組修課規定：除應修習必修學分外，各組學生需從核心選修課程中，至少擇一門課修習(如該課程有分上、下學期，則皆需修畢，始可認列)，加上選修課程後，始可畢業。

四、研究生修業期間除修習各系所規定應修課程外，尚須完成下列校定課程之研修：

(1)「實驗室安全」-碩博士班校級必修 0 學分。

(2)「研究倫理」-碩博士班校級必修 0 學分。

(3)「現代生物醫學講座」-博士班校級必修 4 學分。

(4)「分子醫學」-碩博士班院級必修 4 學分。

五、畢業前必須通過英文鑑定，方能畢業。相關規定依本校「學生英文能力鑑定實施辦法」辦理。

六、本學分表做為畢業學分認定之依據。畢業授予學位名稱為理學博士。

七、修讀「醫學工程與復健科技產業博士學位學程」、「生物科技產業博士學位學程」及「生技製藥產業博士學位學程」、「生醫科技產業博士學位學程」、「健康科技產業博士學位學程 」者，需完成該學程規定之畢業條件，方能畢業。

Curriculum for Doctoral Program:

1. The doctoral program is a two-to-seven-year course. Minimum credits required for graduation is 31 credits, including 11 credits from required courses, 8 credits from elective courses (must require 4 credits of GIBS courses) and 12 credits of doctoral thesis research.
2. Each group should take **at least one Core Course (two credits)**.
3. Besides taking the required courses as stipulated by each department in the study period, graduate students shall complete the training of the following courses as stipulated by the school:
   (1) “Laboratory safety” – A school-level required course in the Master’s Program and Doctoral Program with 0 credits.
   (2) “Research Ethics” - A school-level required course in the Master’s Program and Doctoral Program with 0 credits
   (3) “Lecture on Modern Biomedicine” - A school-level required course in the Doctoral Program with 4 credits.
   (4) “Molecular medicine” - A college-level required course in the Master’s Program and Doctoral Program with 4 credits.
4. This is the confirmation form of graduation credits for 108 school year, students enrolled within August 2018 to July 2019 should follow this document when count graduation credits. Graduated students will granted Doctor of Philosophy program in Graduate Institute of Biomedical Sciences.