慈濟大學醫學影像暨放射科學系 碩士班 114學年度課程地圖

113學年入學課程表	一年級		二年級		教育目標 核心能力	未來發展
	上學期	下學期	上學期	下學期		
必修科目(20)	書報討論(一)(2) 高等放射物理學(3) 學術研究倫理(0)	書報討論(二)(2) 高等放射化學與生物學(3)	書報討論(三)(2)	書報討論(四)(2)	**教育目標** 培育醫學影像與放射科學研究人才 **核心能力** 1、放射醫學科學進階知識能力 2、醫學物理學術研究及應用專業能力(醫學物理研究方向) 3、影像科學學術研究及應用專業能力(生醫影像研究方向) 4、生物醫學學術研究及應用專業能力(生物醫學研究方向) 5、獨立思考、分析、研究與解決問題能力 6、國際觀及國際競爭力	到公私立研究所及醫療院所擔任研究人員，或擔任放射師，除臨床工作外，可參與研究工作或繼續攻讀國內外相關專業領域博士班
選修科目(16)	蒙地卡羅研究法(2) 放射治療特論(2) 直線加速器蒙地卡羅模擬與應用(2) 生醫影像原理和應用(2) 數位影像處理與程式寫作(3)	數位影像與醫療智慧應用(2) 雷射原理與生物醫學應用(2) 質子與重粒子放射治療之蒙地卡羅模擬(2) 輻射粒子遷移計算模擬(2) 研究計畫與論文寫作(2)				
	必修14+專業16=共30學分					
備註：	一、本系碩士班畢業門檻：需於畢業前以第一作者身份參加校內或校外學術研討會至少一次。 二、最低畢業學分30學分(不含碩士論文)：必修14學分、選修16學分(含)以上。 三、本表若有變動或與實際開課狀況不同，一律以本所實際開課科目及學分時數為準。					

Curriculum Map of 2025 Academic Year for Master's Degree,Medical Imaging and Radiological Sciences (MIRS) Department of Tzu Chi University

Cirriculum Map for the 113th Academic Year	Year 1		Year 2		Educational Objectives Core Competencies	Future Development
	1st Semester	2nd Semester	1st Semester	2nd Semester		
Required courses(20)	Seminar I (2) Advanced Radiation Physics(3) Research Ethics Education Online Program(0)	Seminar II(2) Advanced Radiation Chemistry and Radiation Biology(3)	Seminar III(2)	Seminar IV(2)	Educational Objectives Cultivating Talents in Medical Imaging and Radiological Sciences Research Core Competencies 1、Advanced Knowledge Competency in Medical Radiology Science 2、Medical Physics Academic Research and Professionalism Skills (Medical Physics Research Direction) 3、Imaging Science Academic Research and Professionalism Skills (Biomedical Imaging Research Direction) 4、Biomedical Academic Research and Professionalism Skills (Biomedical Research Direction) 5、Independent Thinking, Analytical, Research and Problem-solving Skills 6、International Outlook and International Competitiveness	Work as a researcher in public or private research institutes and medical institutions, or as a radiological technologist. In addition to clinical work, you may participate in research or continue pursuing a PhD in related professional fields both domestically and internationally.
Elective Courses (16)	Monte Carlo Method(2) Topics in Radiation Therapy Physics(2) Monte Carlo simulation of LINAC and its(2) The principle and application of biomedical imaging(2) Digital Image Processing and Programming(3)	Digital Imaging and Medical Intelligence Applications(2) Principle and application of Laser in biomedicine(2) Monte Carlo simulation of proton and heavy particle radiotherapy(2) Radiation particle transport calculation and simulation(2) Research Method and Acdemic Writing(2)				
Required courses(14)+Elective Courses (16)=Total 30 Credits						
Remarks：	1.Graduation Requirements:Before graduation, students must participate in at least one academic conference, either on or off campus, as the first author. 2.The minimum graduation credits are 30 credits (excluding master's thesis):14 credits of compulsory courses and 16 credits of elective courses (including) or above. 3.In case of any changes or discrepancies with the actual course offering, the actual courses and credit hours offered by the Master's Program in Medical Imaging and Radiological Sciences shall prevail.					