中國醫藥大學 醫學院生物醫學影像暨放射科學學系 選修畢業學分認定表 111 學年度入學適用

China Medical University Elective for Undergraduate Majors (Applicable for 2022-2023 Enrollees)

列印日期(Date)：114年8月26日

科目名稱/課號 Course Title/Course ID	修別 Type	學分 Credits	一年級 Freshman 上 1	一年級 Freshman 下 2	二年級 Sophomore 上 1	二年級 Sophomore 下 2	三年級 Junior 上 1	三年級 Junior 下 2	四年級 Senior 上 1	四年級 Senior 下 2	課程分類 Category	備註 Remarks
生在福中要知輻(Knowing the radiation in your life)／20U000194	選(E)	1.0	1.0								系定選修(Departmental Elective Courses)	線上課程(online courses)
生物醫學工程概論(Introduction to biomedical engineering)／20U000129	選(E)	2.0	2.0								系定選修(Departmental Elective Courses)	同時為生醫工程學分學程之必修(Required course for Biomedical Engineering Program)
仿生科技導論(Introduction to biomimicry)／20U000183	選(E)	2.0	2.0								系定選修(Departmental Elective Courses)	
放射科學與技術概論(An introduction to technology of radiological sciences)／20U000180	選(E)	2.0	2.0								系定選修(Departmental Elective Courses)	
計算機概論(Introduction to computer science)／20U000182	選(E)	2.0	2.0								系定選修(Departmental Elective Courses)	同時為人工智慧醫療學分學程選修課程(Elective course for Artificial Intelligence in Medicine Program)
生物醫學工程論文導讀(Guided reading on articles of biomedical engineering)／20U000130	選(E)	2.0		2.0							系定選修(Departmental Elective Courses)	
放射科學與技術論文導讀(Guided reading on articles of radiological science & technology)／20U000181	選(E)	2.0		2.0							系定選修(Departmental Elective Courses)	
程式語言(Programming language)／20U000092	選(E)	2.0		2.0							系定選修(Departmental Elective Courses)	同時為生物醫學工程學分學程選修課程(Elective course for Biomedical Engineering Program)
人工智慧專題討論(一)(Artificial intelligence seminar (I))／20U000191	選(E)	1.0			1.0						系定選修(Departmental Elective Courses)	同時為人工智慧醫療學分學程之選修(Elective course for Artificial Intelligence in Medicine Program)
生物醫學工程概論(Introduction to biomedical engineering)／20U000129	選(E)	2.0			2.0						系定選修(Departmental Elective Courses)	同時為生醫工程學分學程之必修(Required course for Biomedical Engineering Program)
生醫流體力學(Biofluid mechanics)／20U000152	選(E)	2.0			2.0						系定選修(Departmental Elective Courses)	同時為生物醫學工程學分學程選修課程(Elective Required course for Biomedical Engineering Program)
基礎生物程式設計(Basic programming in biology)／20U000187	選(E)	2.0			2.0						系定選修(Departmental Elective Courses)	同時為人工智慧醫療學分學程必修課程(Required course for Artificial Intelligence in Medicine Program)
專題研究(一)(Special topics (I))／20U000089	選(E)	2.0			2.0						系定選修(Departmental Elective Courses)	
醫用電子學(Medical electronics)／20U000028	選(E)	2.0			2.0						系定選修(Departmental Elective Courses)	同時為生物醫學工程學分學程之選修(Elective Required course for Biomedical Engineering Program)
醫用電子學實驗(Medical electronIcs laboratory)／20U000029	選(E)	1.0			1.0						系定選修(Departmental Elective Courses)	限25人(The maximum number of students is 25.)
人工智慧基礎理論(Fundamental theories of artificial intelligence)／20U000188	選(E)	2.0				2.0					系定選修(Departmental Elective Courses)	同時為人工智慧醫療學分學程選修課程(Elective course for Artificial Intelligence in Medicine Program)
人工智慧專題討論(二)(Artificial intelligence seminar (II))／20U000192	選(E)	1.0				1.0					系定選修(Departmental Elective Courses)	同時為人工智慧醫療學分學程選修(Elective course for Artificial Intelligence in Medicine Program)
生物醫學訊號影像導論(Introduction to biomedical signal imaging)／20U000135	選(E)	2.0				2.0					系定選修(Departmental Elective Courses)	同時為生物醫學工程學分學程必修。111學年入學起全英課程(Required course for Biomedical Engineering Program. English courses from the 111th academic year.)
再生醫學(Regenerative medicine)／20U000132	選(E)	2.0				2.0					系定選修(Departmental Elective Courses)	同時為生物醫學工程學分學程選修(Elective Required course for Biomedical Engineering Program)
專題研究(二)(Special topics (II))／20U000105	選(E)	2.0				2.0					系定選修(Departmental Elective Courses)	
資料結構(Data structure)／20U000189	選(E)	2.0				2.0					系定選修(Departmental Elective Courses)	同時為人工智慧醫療學分學程必修課程(Required course for Biomedical Engineering Program)
醫學影像分析(Medical image analysis)／20U000196	選(E)	2.0				2.0					系定選修(Departmental Elective Courses)	同時為生物醫學工程及人工智慧醫療學分學程選修課程(Elective course for Artificial Intelligence in Medicine Program & Biomedical Engineering Program)

中國醫藥大學 醫學院生物醫學影像暨放射科學學系 選修畢業學分認定表 111 學年度入學適用

China Medical University Elective for Undergraduate Majors (Applicable for 2022-2023 Enrollees)

列印日期(Date)：114年8月26日

科目名稱/課號 Course Title/Course ID	修別 Type	學分 Credits	一年級 Freshman 上 1	一年級 Freshman 下 2	二年級 Sophomore 上 1	二年級 Sophomore 下 2	三年級 Junior 上 1	三年級 Junior 下 2	四年級 Senior 上 1	四年級 Senior 下 2	課程分類 Category	備註 Remarks
醫學影像物理學(Physics of medical imaging)／20U000133	選(E)	2.0				2.0					系定選修(Departmental Elective Courses)	同時為生物醫學工程學分學程選修。111學年入學起全英課程(Elective Required course for Biomedical Engineering Program. English courses from the 111th academic year.)
人工智慧與深度學習(Artificial intelligence and deep learning)／20U000186	選(E)	2.0					2.0				系定選修(Departmental Elective Courses)	同時為人工智慧學分學程必修課程(Required course for Biomedical Engineering Program)
分子影像概論(Introduction to molecular imaging)／20U000169	選(E)	2.0					2.0				系定選修(Departmental Elective Courses)	同時為生醫工程學分學程之選修(Elective Required course for Biomedical Engineering Program)
核醫藥物學(Fundamentals of nuclear medicine)／20U000055	選(E)	2.0					2.0				系定選修(Departmental Elective Courses)	
專題研究(三)(Special topics (III))／20U000118	選(E)	2.0					2.0				系定選修(Departmental Elective Courses)	
超音波實驗課(Practice for diagnostic medical sonography)／20U000160	選(E)	1.0					1.0				系定選修(Departmental Elective Courses)	限30人，與三下超音波實驗同屬(The maximum number of students is 30. Same as the third grade second semester - Practice for diagnostic medical sonography.)
輻射分子生物學(Radiation biology)／20U000056	選(E)	2.0					2.0				系定選修(Departmental Elective Courses)	
醫病關係與職業倫理(Doctor-patient relationship & professional ethics)／20U000158	選(E)	2.0					2.0				系定選修(Departmental Elective Courses)	
放射治療劑量學(Dosimetry of radiation therapy)／20U000086	選(E)	2.0						2.0			系定選修(Departmental Elective Courses)	
放射品質保證(Quality assurance in radiology)／20U000168	選(E)	1.0						1.0			系定選修(Departmental Elective Courses)	
前沿生醫影像技術與核子醫學(Frontiers of biomedical imaging and nuclear medicine)／20U000190	選(E)	2.0						2.0			系定選修(Departmental Elective Courses)	同時為生物醫學工程學分學程之選修(Elective Required course for Biomedical Engineering Program)
專題研究(四)(Special topics (IV))／20U000121	選(E)	2.0						2.0			系定選修(Departmental Elective Courses)	
超音波實驗課(Practice for diagnostic medical sonography)／20U000160	選(E)	1.0						1.0			系定選修(Departmental Elective Courses)	限30人，與三上超音波實驗同屬(The maximum number of students is 30. Same as the third grade first semester - Practice for diagnostic medical sonography.)
臨床醫學概論(Introduction to clinical medicine)／20U000050	選(E)	2.0						2.0			暑假見習(Summer Clerkship)	
醫用磁振學(Magnetic resonance in medicine)／20U000171	選(E)	1.0						1.0			系定選修(Departmental Elective Courses)	
放射器材學(Radiological equipment)／20U000143	選(E)	2.0								2.0	系定選修(Departmental Elective Courses)	限本校本系學生(Only limited to students of Department of BIRS)
近代物理學(Modern physics)／20U000061	選(E)	2.0								2.0	系定選修(Departmental Elective Courses)	限本校本系學生(Only limited to students of Department of BIRS)
骨質密度測定及紅外線掃描(Densitometry & infrared scan)／20U000082	選(E)	1.0								1.0	系定選修(Departmental Elective Courses)	限本校本系學生(Only limited to students of Department of BIRS)
輻射劑量學(Radiation dosimetry)／20U000081	選(E)	2.0								2.0	系定選修(Departmental Elective Courses)	限本校本系學生(Only limited to students of Department of BIRS)
合計 選修 總學分(Elective subtotal)		73.0	9.0	6.0	12.0	15.0	13.0	11.0		7.0		

校內注意事項

Note of CMU

中國醫藥大學 醫學院生物醫學影像暨放射科學學系 選修畢業學分認定表 111 學年度入學適用

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111學年度入學生畢業學分認定表備註：
一、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。
二、體育課一年級為必修，每學期0學分，不及格不得畢業。大學部二年級以上為選修，每學期一學分。
三、國防軍事訓練改為選修，每週上課2小時為1學分，成績及格者，83年次以前同學以每8堂 課折算1日役期(1門課折抵4日役期，2門課折抵9日役期，以此類推)。83年次以後同學每門課折抵2日訓期。
四、通識教育課程分為正式課程及通識教育活動：
(一)正式課程：必修28學分
1.英文必修4學分
英文課程採分級制，分級以大學指考及學測成績為依據，分級結果於選課前公告。如達該學系英文畢業檢定標準，經所屬學系審核通過，得免修英文4學分，相關細則依「中國醫藥大學英文暨英語聽講必修課程免修學分實施要點」規定辦理。
2.資訊相關課程（2學分）
3.服務學習課程（1學分）
4.通識課程（21學分）
（1）核心通識課程：至少修習10學分，五大類中至少任選三大類。
A.語文類：國文、英文進階課程及第二外語課程等。
B.人文藝術類：文學藝術類、歷史文明類等。
C.社會科學類：法政類；社會、心理、人類、教育、性別研究類；管理、經濟類等。
D.自然科學類：基礎科學類；生命科學類；應用科學類；科學技術類等。
E.運動知能類：如運動心理學、運動生理學、國際賽事分析與博奕事業、運動與健康的學理探討等學術類課程。如屬該學系之必選修課程者，將設限不得認列為通識學分。
（2）跨學院通識課程：至少須修習跨學院課程4學分。
（二）通識教育活動：0學分，學生須於在學期間參與至少16小時通識教育中心所認定之演講與校內外所舉辦之展演活動；成績以通過/不通過計分。相關細則依「通識教育活動實施要點」規定辦理。
五、服務學習時數：需修習通識必修1學分（可認列18小時服務學習課程）（醫學系、中醫學系另於下學期開設系上必修1學分）之服務學習課程，以及6小時志願服務基礎教育訓練、6小時服務學習講座參與、18小時志工服務（不含服務學習講座），共計需完成48小時之服務學習時數，始符合畢業資格。
※志願服務基礎訓練由學務處服務學習中心舉辦（另行公告），其他未盡事宜請詳閱「服務學習課程實施要點」（學務處服務學習中心網頁）。
六、畢業前必須參加校內舉辦之基礎心肺復甦術訓練，方具畢業資格。相關規定依本校「學生基礎心肺復甦術訓練實施要點」辦理。
七、本學分表做為畢業學分認定之依據。

For students enrolled in the fall semester of 2022:
1.According to the regulation of CMU Students' English Proficiency Assessment, Students must pass the minimal English Proficiency Requirement before graduation.
2.Taking Physical Education Course is compulsory for first year students (0 credits), students must pass to graduate. For second year or above, Physical Education is elective with 1 credit per semester.
3.Defense Education Military Training Course is elective, with 2 hours per week (1 credit).
4.General education courses consist of formal courses and general education activities:
(1)Formal courses: 28 required credits
i.English (4 credits): A level-based class grouping system is adopted based on students' score of the entrance examination. Students who meet the department's English graduation standard and are approved by the department can be exempted from the course.
ii.Technology Information-related courses (2 credits)
iii.Service learning courses (1 credit)
iv.General education courses (21 credits)
Core general education courses: Minimum of 10 credits, with at least three of the five categories. (Language, Humanities and arts, Social sciences, Natural sciences, Sports)
Cross-college general education courses: Minimum of 4 credits.
(2)General education activities: 0 credits. Students must participate in at least 16 hours of activities held by the General Education Center, scores will be marked as pass/fail.
5.Service learning hours: 1 credit of compulsory general education (can be listed in 18 hours of service learning courses) (School of Medicine and Chinese Medicine will offer 1 credit of compulsory course in the 2nd semester), 6 hours of voluntary service basic training, 6 hours participation service-learning lectures, and 18 hours of volunteer service. A total of 48 hours is required to be eligible for graduation.
※Voluntary service basic training will be held by the Office of Student Affairs (to be announced).
6.Students must participate in the basic cardiopulmonary resuscitation training held by the university before graduation.
7.This list is used as the recognition basis of courses and credits required for graduation

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China Medical University Elective for Undergraduate Majors (Applicable for 2022-2023 Enrollees)

生物醫學影像暨放射科學學系注意事項

一、教育目標：培育具醫學影像暨放射科學專業能力之醫事放射師。
二、111學年度入學新生實施，本系四年制，最低畢業學分為133學分，含必修118學分(系課程必修90學分及通識課程必修28學分)，選修15學分（需有10分為本系開課之學分）。
三、須修畢5學分的EMI全英課程，為必修課程醫學影像處理(20U000195)及放射生物學(20U000025)。
四、臨床見實習說明：
(一)見習
1.必修(2學分)，及格者始符合畢業資格。
2.見習期間：二年級升三年級七月起見習共4週(共160小時、每學分80小時)。
3.擋見習課程：需修畢放射物理學(一)、放射物理學(二)、放射生物學、放射切面解剖學課程。
(二)實習
1. 需完成見習才能實習。
2.必修18學分，及格者始符合畢業資格。
3.實習期間：三年級升四年級自7月起實習共28週(共1120小時、每學分約62.2小時)。
4.擋實習課程制度：規定「放射物理學(二)、放射生物學、放射切面解剖學、放射診斷技術學、保健物理學」五科專業必修課程均不及格，即無法參加應屆臨床實習課程。

Note of

Note of Department of Biomedical Imaging and Radiological Science

1.Goal: Cultivate radiographers with professional capabilities in medical imaging and radiology.
2.This department is a four-year program. Students who enroll on or after 2022 fall semester must complete education courses of no less than 133 credits, including 118 credits from required courses (90 credits from the department and 28 credits from general education courses) and 15 credits from elective courses (10 credits from the department).
3.Students must complete 5 credits of EMI courses in English, including the required courses Medical Image Processing (20U000195) and Radiation Biology (20U000025).
4.Students clinical placement
(a)Clerkship
* Required course 2 credits. Students must complete the clerkship before the graduation.
* There will be a total of 4 weeks of clerkship starting in July before students become the third year students (A total of 160 hours, 80 hours per credit).
* Students must complete the following courses before starting the clerkship: Radiophysics (I)(II), radiobiology, and radiographic cross sectional anatomy.
(b)Internship
* Students must complete their clerkship before starting the internship.
* Required course with 18 credits. Students must complete the internship before the graduation.
* There will be a total of 28 weeks of internship starting in July before students become the fourth year students (A total of 1120 hours, 62.2 hours per credit).
* For students who fail all of the following courses, they can’ t start the internship:
Radiophysics (II), radiobiology, radiographic cross sectional anatomy, principles and techniques of diagnostic radiology, and health physics

單位主管簽章：