

中山醫學大學

Chung Shan Medical University

115 學年度入學新生應修科目及學分表

Courses and Credits for Freshmen Admitted in the 115th Academic Year

醫學科技學院醫學檢驗暨生物技術學系

Department of Medical Laboratory and Biotechnology

第一學年

1st Academic Year

科目名稱 Course Name in Chinese	英文科目名稱 Course Name in English	必修 Required Elective	合計 學分 Credits Subtotal	第一 學期 1 st Semester Credits	第二 學期 2 nd Semester Credits	備註 Remarks
普通化學	General Chemistry	必修 Required	2	2	0	
有機化學	Organic Chemistry	必修 Required	2	2	0	
普通生物學(一)	General Biology (I)	必修 Required	2	2	0	
組織學	Histology	必修 Required	2	0	2	
生理學	Physiology	必修 Required	2	0	2	
生物統計學	Biostatistics	必修 Required	2	0	2	
生物化學(一)	Biochemistry(I)	必修 Required	2	0	2	
生物化學實驗	Biochemistry Laboratory	必修 Required	1	0	1	
病理切片技術學	Histopathologic Techniques	必修 Required	1	0	1	
病理切片技術實驗	Histopathologic Laboratory	必修 Required	1	0	1	
英文	English	必修 Required	2	(2)	(2)	遠距教學 Distance Learning
解剖學	Human Anatomy	選修 Elective	2	2	0	
醫技概論	Introduction to General Medical Technology	選修 Elective	2	2	0	
分生概論	Introduction to Molecular Biology	選修 Elective	2	2	0	
輔助與另類醫學概論	Introduction to Complementary and Alternative Medicine (CAM)	選修 Elective	2	2	0	
細胞生物學	Cell Biology	選修 Elective	2	0	2	
毒物學	Toxicology	選修 Elective	2	0	2	
遺傳學概論	Introduction to genetics	選修 Elective	2	0	2	
普通生物學(二)	General Biology (II)	選修 Elective	2	0	2	
組織學實驗	Histology Laboratory	選修 Elective	1	0	1	
檢驗醫學專業發展	Professional Development in Laboratory Medicine	選修 Elective	2	0	2	全英授課 Taught in

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第一學年

1st Academic Year

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						English
必修學分合計 Required Credits Subtotal			19	6	11	

第二學年

2nd Academic Year

科目名稱 Course Name in Chinese	英文科目名稱 Course Name in English	必修 Required Elective	合計 學分 Credits Subtotal	第一 學期 1 st Semester Credits	第二 學期 2 nd Semester Credits	備註 Remarks
免疫學	Immunology	必修 Required	2	2	0	
臨床生理學	Clinical Physiology	必修 Required	2	2	0	
分子生物學(一)	Molecular Biology(I)	必修 Required	2	2	0	
生物化學(二)	Biochemistry(II)	必修 Required	2	2	0	
臨床生理學實驗	Clinical Physiology Laboratory	必修 Required	1	1	0	
醫學專題討論(一)	Seminar in Biomedicine (I)	必修 Required	1	1	0	
微生物學	Microbiology	必修 Required	3	0	3	
臨床血液學(一)	Clinical Hematology (I)	必修 Required	2	0	2	
寄生蟲學	Parasitology	必修 Required	2	0	2	
微生物學實驗	Microbiology Laboratory	必修 Required	1	0	1	
寄生蟲學實驗	Parasitology Laboratory	必修 Required	1	0	1	
醫學專題討論(二)	Seminar in Biomedicine (II)	必修 Required	1	0	1	
基因工程技術	Gene Engineering	選修 Elective	2	2	0	
癌症醫學	Cancer Medicine	選修 Elective	2	2	0	
幹細胞與再生醫學概論	Introduction to Stem Cell and Regeneration Medicine	選修 Elective	2	2	0	全英授課 Taught in English
濫用藥物分析	Abused Drug Analysis	選修	2	0	2	

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第 二 學 年

2stAcademic Year

科目名稱 Course Name in Chinese	英文科目名稱 Course Name in English	必選 修 Required Elective	合計 學分 Credits Subtotal	第一 學期 1 st Semester Credits	第二 學期 2 nd Semester Credits	備註 Remarks
		Elective				
食品藥物殘留分析	Analysis of Drugs Residue in Food	選修 Elective	2	0	2	
DNA 鑑定	DNA Analysis	選修 Elective	2	0	2	
生技藥品研發實例	Development of Biopharmaceuticals	選修 Elective	2	0	2	
臨床細胞遺傳學檢驗	Clinical Cytogenetics Technology	選修 Elective	2	0	2	
臨床細胞遺傳學檢驗實驗	Clinical Cytogenetics Technology Laboratory	選修 Elective	1	0	1	
必修學分合計 Required Credits Subtotal			20	10	10	

第 三 學 年

3stAcademic Year

科目名稱 Course Name in Chinese	英文科目名稱 Course Name in English	必選 修 Required Elective	合計 學分 Credits Subtotal	第一 學期 1 st Semester Credits	第二 學期 2 nd Semester Credits	備註 Remarks
臨床生化學	Clinical Biochemistry	必修 Required	3	3	0	
血庫學	Blood Banking	必修 Required	2	2	0	
臨床血液學(二)	Clinical Hematology (II)	必修 Required	2	2	0	
臨床鏡檢學	Clinical Microscopy	必修 Required	2	2	0	
臨床生化學實驗	Clinical Biochemistry Laboratory	必修 Required	1	1	0	
臨床血液學實驗	Clinical Hematology Laboratory	必修 Required	1	1	0	
臨床鏡檢學實驗	Clinical Microscopy Laboratory	必修 Required	1	1	0	
臨床微生物學	Clinical Microbiology	必修 Required	3	0	3	
病理學	Pathology	必修 Required	2	0	2	
臨床血清免疫學	Clinical Serology & Immunology	必修 Required	2	0	2	
臨床病毒學	Clinical Virology	必修 Required	2	0	2	

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Department of Medical Laboratory and Biotechnology

第三學年

3rd Academic Year

科目名稱 Course Name in Chinese	英文科目名稱 Course Name in English	必修 Required Elective	合計 學分 Credits Subtotal	第一 學期 1 st Semester Credits	第二 學期 2 nd Semester Credits	備註 Remarks
醫學分子檢驗學	Molecular Diagnostics in Medicine	必修 Required	2	0	2	
臨床微生物學實驗	Clinical Microbiology Laboratory	必修 Required	1	0	1	
臨床血清免疫學實驗	Clinical Serology & Immunology Laboratory	必修 Required	1	0	1	
臨床病毒與分子檢驗實驗	Clinical Virology and Molecular Diagnosis Laboratory	必修 Required	1	0	1	
分子遺傳學	Molecular Genetics	選修 Elective	2	2	0	
分子遺傳學實驗	Molecular Genetic Laboratory	選修 Elective	1	1	0	
多體學與精準醫學應用概論	Introduction to Applications in Omics and Precision Medicine	選修 Elective	2	0	2	
臨床檢驗數據判讀	Interpretation of Clinical Laboratory Test	選修 Elective	2	0	2	
生技產業實習(一)	Practice in Biotechnology Industry (I)	選修 Elective	2	0	2	
生技產業實習(二)	Practice in Biotechnology Industry (II)	選修 Elective	3	0	3	
必修學分合計 Required Credits Subtotal			26	12	14	

第四學年

4th Academic Year

科目名稱 Course Name in Chinese	英文科目名稱 Course Name in English	必修/選修 Required Elective	合計 學分 Credits Subtotal	第一 學期 1 st Semester Credits	第二 學期 2 nd Semester Credits	備註 Remarks
生物技術學	Biotechnology	必修 Required	2	(2)	(2)	
臨床微生物實習	Practicum in Clinical Microbiology	必修 Required	3	(3)	(3)	
臨床血庫實習	Practicum in Clinical Blood Banking	必修 Required	1	(1)	(1)	
臨床生化實習	Practicum in Clinical Chemistry	必修 Required	2	(2)	(2)	
臨床血清免疫實習	Practicum in Clinical Seroimmunology	必修 Required	2	(2)	(2)	
臨床血液實習	Practicum in Clinical Hematology	必修 Required	2	(2)	(2)	
臨床鏡檢實習	Practicum in Clinical Microscopy	必修	3	(3)	(3)	

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Department of Medical Laboratory and Biotechnology

第 四 學 年

4th Academic Year

科目名稱 Course Name in Chinese	英文科目名稱 Course Name in English	必/選修 Required Elective	合計 學分 Credits Subtotal	第一 學期 1 st Semester Credits	第二 學期 2 nd Semester Credits	備註 Remarks
		Required				
臨床生理實習	Practicum in Clinical Physiology	必修 Required	2	(2)	(2)	
病理切片與細胞診斷實習	Practicum in Clinical Histopathologic and Cytologic Diagnosis	必修 Required	1	(1)	(1)	
醫學分子檢驗實習	Practicum in Molecular Diagnostics in Medicine	必修 Required	1	(1)	(1)	
醫學實驗室管理及品質管理	Management of Medical Laboratory and Quality Management	必修 Required	2	(2)	(2)	
臨床病毒學實習	Practicum in Clinical Virology	選修 Elective	2	(2)	(2)	
臨床檢驗實務操作	Clinical Medical Laboratory Practice	選修 Elective	1	(1)	(1)	
臨床生化學特論	Special Lectures in Clinical Chemistry	選修 Elective	2	(2)	(2)	
臨床微生物學特論	Special Topics in Clinical Microbiology	選修 Elective	2	(2)	(2)	
醫學實驗室認證	Medical Laboratory Accreditation	選修 Elective	2	(2)	(2)	
免疫學與血清學特論	Special Topics in Immunology and Serology	選修 Elective	2	(2)	(2)	
血液學及血庫學特論	Special Topics in Hematology and Immunohematology	選修 Elective	2	(2)	(2)	
實驗室開發檢測	Laboratory Developed Tests	選修 Elective	2	(2)	(2)	
分子生物技術學特論	Special topics in molecular biology and related techniques	選修 Elective	2	(2)	(2)	
必修學分合計 Required Credits Subtotal			21	0	0	
最低畢業學分數 128 學分，必修 86 學分，通識 20 學分，體育 2 學分，選修 20 學分 Minimum graduation credits: 128 credits, compulsory 86 credits, general education 20 credits, physical education 2 credits, 20 elective credits						
說明：						

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第 四 學 年

4th Academic Year

科目名稱 Course Name in Chinese	英文科目名稱 Course Name in English	必/選修 Required Elective	合計 學分 Credits Subtotal	第一 學期 1 st Semester Credits	第二 學期 2 nd Semester Credits	備註 Remarks
一、通識教育課程總學分數為 20 學分，學生需修滿學分數，始得申請畢業。課程內容分為「基礎通識」及「博雅通識」等兩大部分，修習原則如下：(一)「基礎通識」課程：必修，共 6 學分。含括：「多元文化與語文」、「程式語言」、「大學之道」及「服務學習」等課程。(二)「博雅通識」課程：必修，共 14 學分。含括：文藝領域、社會領域、醫學人文領域和科普領域等四個領域，每個領域至少需修習 2 學分。通識教育課程畢業學分的認列，以 20 學分為上限。通識教育課程修習方式依照「中山醫學大學通識課程選課須知」辦理。「服務學習」依照「中山醫學大學服務學習課程實施辦法」辦理。 二、學生須於畢業前修滿 2 學分「體育」，始得畢業，但超修不列入畢業學分數。 三、大一「英文」分級及修課依照「雙語教學推動資源中心」所公告之規定辦理。 四、學生須於畢業前擇一修習雙主修、輔系、跨域學程或跨域微學程，符合修習規範者，始得畢業。 五、學生須於畢業前擇一參加經認定之校外官方英文能力檢定考試或校內「中山醫大英文能力檢測」(CEPT)英文檢定考試，相當全民英檢中級初試，並於每學期開學後繳交通過之成績證明文件至各系登錄，以作為畢業資格審定之依據。 六、學生須依「中山醫學大學深化醫能力百分百實施辦法」參加各項符合增益基本能力之活動並累積至少 100 點，始得畢業。						

Instructions :

- The total number of credits required for the General Education Curriculum is 20. Students must complete these credits to apply for graduation. The curriculum is divided into two main parts: Fundamental General Education and Liberal Arts General Education. The guidelines for course completion are as follows:
Fundamental General Education Courses: These are mandatory and total 6 credits. They include courses such as Multiculturalism and Languages, Introduction to Artificial Intelligence and Applications, Foundation of University Education, and Service Learning.
Liberal Arts General Education Courses: These are also mandatory and total 14 credits (16 credits for the Department of Medical Informatics). They cover four domains: Literature and Arts, Social Sciences, Medical Humanities, and Science and Technology. At least 2 credits must be completed in each domain.
The maximum number of credits recognized from the General Education Curriculum towards graduation is 20. Enrollment procedures for the General Education Curriculum are governed by the Guidelines for General Education Course Selection at Chung Shan Medical University. The Service Learning component must be conducted in accordance with the Implementation Guidelines for Service Learning Courses at Chung Shan Medical University.
- Students must complete 2 credits of Physical Education before graduation. However, excess credits will not be counted toward the total graduation credits.
- English course placement and enrollment are subject to the regulations of the English-Medium Instruction Center.

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Department of Medical Laboratory and Biotechnology

第 四 學 年

4th Academic Year

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4. Students are required to choose a double major, a minor, an interdisciplinary program, or an interdisciplinary micro-program before graduation. Only those who complete the requirements of their chosen program are eligible to graduate. 5. Students must pass an officially recognized external English proficiency test or the CSMU's internal English Proficiency Test (CEPT) before graduation. The required proficiency level is equivalent to the preliminary test of the GEPT Intermediate Level. Within the designated period at the start of each semester, students must submit their official score reports to their respective departments to verify graduation eligibility. 6. Students must participate in various activities that enhance their basic competencies in accordance with the Implementation Guidelines for Enhancing Soft Skills at Chung Shan Medical University and accumulate at least 100 points in order to graduate.						