

化學工程學系(學位學程)學士班學生畢業條件明細表 (114學年度起入學適用)

項 目		項 目																																																																																											
<p>一、修業年限：</p> <p>(一)最低修業年限：四年（獸醫系五年）</p> <p>(二)可延長修業二年（不包括休學二年）</p> <p>二、應修最低畢業總學分數：共 137 學分(不含體育課程)。</p> <p>三、校必修課程及學分數：</p> <p>(一)體育課程：必修2學分，不計入畢業學分。運動績優生另依體育室相關規定辦理。</p> <p>(二)英文能力檢定：0學分。 學系自訂更高之標準者從其規定：(請敘明)</p> <p>(三)通識課程：28 學分。(課程分類請參閱選課系統)</p> <p>1.核心素養課程：共10類，至少3學分。 其中「資訊素養：程式設計與AI應用」修課規定如下： (請勾選) <input type="checkbox"/>必修1學分(外籍生得免修)。 <input checked="" type="checkbox"/>免修，學生如修習<input checked="" type="checkbox"/>可以<input type="checkbox"/>不可以採計為通識畢業學分。</p> <p>2.語文素養課程：至少8學分。 (1)本國語文：4學分 敘事表達：語文素養2學分。 敘事表達：語文應用2學分。 (2)外國語文：4至6學分：(請勾選) <input checked="" type="checkbox"/>英語溝通與表達2學分。 <input checked="" type="checkbox"/>學術英文聽讀2學分。 <input type="checkbox"/>學術英文說寫2學分。</p> <p>3.領域素養課程：至少10學分。 (1)應修習「人文、社會、自然」三領域各1門課程，合計至少6學分。 (2)應修習「統合領域」課程至少4學分。 (3)國防教育類課程(非必修)不採計為通識畢業學分。 (4)本系隸屬 <u>工程科技</u> 學群，該學群課程至多採計1門為通識畢業學分，超修該學群課程 <input type="checkbox"/>可以 <input checked="" type="checkbox"/>不可以(請勾選)採計為外系學分。</p> <p>4.除學術英文說寫課程外，超修之通識課程<input type="checkbox"/>可以 <input checked="" type="checkbox"/>不可以採計為畢業學分。</p> <p>5.其他規定：<u>無</u></p> <p>四、院專業必修課程及學分數：<u>無</u></p> <p>五、系專業必修課程及學分數：最低應修 82 學分</p> <table border="1"> <thead> <tr> <th>科目名稱</th> <th>全或半</th> <th>學分</th> </tr> </thead> <tbody> <tr><td>(1) 化工概論與工業安全衛生</td><td>半</td><td>3</td></tr> <tr><td>(2) 微積分(一)</td><td>半</td><td>3</td></tr> <tr><td>(3) 微積分(二)</td><td>半</td><td>3</td></tr> <tr><td>(4) 普通物理學</td><td>全</td><td>6</td></tr> <tr><td>(5) 普通物理學實驗</td><td>全</td><td>2</td></tr> <tr><td>(6) 普通化學</td><td>全</td><td>6</td></tr> <tr><td>(7) 普通化學實驗</td><td>全</td><td>2</td></tr> <tr><td>(8) 計算機程式語言</td><td>半</td><td>3</td></tr> <tr><td>(9) 質能均衡</td><td>半</td><td>3</td></tr> <tr><td>(10) 工程數學(一)</td><td>半</td><td>3</td></tr> </tbody> </table>		科目名稱	全或半	學分	(1) 化工概論與工業安全衛生	半	3	(2) 微積分(一)	半	3	(3) 微積分(二)	半	3	(4) 普通物理學	全	6	(5) 普通物理學實驗	全	2	(6) 普通化學	全	6	(7) 普通化學實驗	全	2	(8) 計算機程式語言	半	3	(9) 質能均衡	半	3	(10) 工程數學(一)	半	3	<table border="1"> <thead> <tr> <th>科目名稱</th> <th>全或半</th> <th>學分</th> </tr> </thead> <tbody> <tr><td>(11) 工程數學(二)</td><td>半</td><td>3</td></tr> <tr><td>(12) 有機化學</td><td>全</td><td>6</td></tr> <tr><td>(13) 有機化學實驗</td><td>全</td><td>2</td></tr> <tr><td>(14) 物理化學</td><td>全</td><td>6</td></tr> <tr><td>(15) 物理化學實驗</td><td>全</td><td>2</td></tr> <tr><td>(16) 輸送現象(一)</td><td>半</td><td>3</td></tr> <tr><td>(17) 輸送現象(二)</td><td>半</td><td>3</td></tr> <tr><td>(18) 單元操作</td><td>半</td><td>3</td></tr> <tr><td>(19) 化工熱力學</td><td>半</td><td>3</td></tr> <tr><td>(20) 化學反應工程</td><td>半</td><td>3</td></tr> <tr><td>(21) 程序控制</td><td>半</td><td>3</td></tr> <tr><td>(22) 以下必修課程二選一： 專題研究、文獻選讀</td><td>全</td><td>2</td></tr> <tr><td>(23) 儀器分析</td><td>半</td><td>3</td></tr> <tr><td>(24) 儀器分析實驗</td><td>半</td><td>1</td></tr> <tr><td>(25) 程序設計</td><td>半</td><td>3</td></tr> <tr><td>(26) 化工實驗(一)</td><td>半</td><td>1</td></tr> <tr><td>(27) 化工實驗(二)</td><td>半</td><td>1</td></tr> <tr><td></td><td></td><td>82</td></tr> </tbody> </table> <p>六、系專業選修課程及學分數：最低應選修 27 學分。</p> <p>七、其他特別規定：</p> <ol style="list-style-type: none"> 應用生物化學：為必選之系專業選修課程。 材料科學導論：為必選之系專業選修課程。 高分子導論：為必選之系專業選修課程。 程序設計實務：為必選之系專業選修課程。 大學部學生可修習研究所課程，不限學分。 操行依學校規定辦理。 <p>其他選課規定請詳閱中興大學學生選課辦法。</p> <p>八、輔系：學生修習輔系之學分，應在其主系規定最低畢業學分以外加修之科目及學分數（至少二十學分），請見教務處課務組公告事項。</p> <p>九、雙主修：</p> <p>(一)學生修讀雙主修，其加修學系（所、學位學程）畢業條件以核准修讀學年度的畢業條件為基準。修讀雙主修學生，除應修滿所屬系（所、學位學程）規定畢業科目學分外，應至少修滿加修學系（所、學位學程）全部專業必修科目學分始可取得雙主修資格。</p> <p>(二)學士班學生如扣除所屬學系(學位學程)學分後，加修學系(學位學程)專業必修科目學分仍不足四十學分，或加修學系(學位學程)專業必修科目學分原本不足四十學分，應由加修學系(學位學程)指定選修科目學分補足之。</p> <p>十、跨域專長：</p> <p>本系<input checked="" type="checkbox"/>無 <input type="checkbox"/>有(請勾選)開設，申請對象<input type="checkbox"/>學士班 <input type="checkbox"/>進修學士班(請勾選)；跨域專長課程與學生本系（學位學程）、雙主修、輔系或其他跨域專長應修課程及學分重複者，由跨域專長的系（學位學程）或學院指定與專長相關選修課程補足。</p> <p>十一、入學資格：屬修業年限少於國內高級中等學校及專科學校之國外同等學校畢業生，如海外中五學制畢（結）業生，畢業學分數應增加至少12學分，其增加之學分數與修習科目為本系專業選修課程(不限科目)。</p>		科目名稱	全或半	學分	(11) 工程數學(二)	半	3	(12) 有機化學	全	6	(13) 有機化學實驗	全	2	(14) 物理化學	全	6	(15) 物理化學實驗	全	2	(16) 輸送現象(一)	半	3	(17) 輸送現象(二)	半	3	(18) 單元操作	半	3	(19) 化工熱力學	半	3	(20) 化學反應工程	半	3	(21) 程序控制	半	3	(22) 以下必修課程二選一： 專題研究、文獻選讀	全	2	(23) 儀器分析	半	3	(24) 儀器分析實驗	半	1	(25) 程序設計	半	3	(26) 化工實驗(一)	半	1	(27) 化工實驗(二)	半	1			82
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※必修科目及畢業學分數規定，由各系依課程規劃表填列。

※如無課程或學分異動，不須每學年提送。

系(學位學程)承辦人：助教顧玉茹 主任簽章：教授兼化學系主任李思禹 年 月 日修訂

Department of Chemical Engineering, National Chung Hsing University

Graduation Requirements for Undergraduate Students Enrolled after 2025

Items		Items		
I. Period of Study :		Core Course Title	Semester/Year	Credits
1. Minimum period of study : 4 years (5 years for Veterinary Medicine)		(16) Transport Phenomenon (I)	Semester	3
2. Can be extended for 2 more years (excluding 2 years of suspension)		(17) Transport Phenomenon (II)	Semester	3
II. Minimum graduation credits: 137 credits (excluding PE credits).		(18) Unit Operations	Semester	3
III. University Required Courses and Credits:		(19) Chemical Engineering Thermodynamics	Semester	3
1. Physical Education (PE) Course: 2 credits, not included in graduation credits. Student Athletes with outstanding sports achievements will be handled according to the relevant regulations of the Office of Physical Education and Sports.		(20) Chemical Reaction Engineering	Semester	3
2. English Proficiency Requirement: 0 credit.		(21) Process Control	Semester	3
3. General Education : 28 credits		(22) Undergraduate Research/Selected Reading	Year	2
i. Core Competencies: at least 3 credits. International students do not need to take the "Information Literacy" course.		(23) Instrumental Analysis	Semester	3
ii. Language Competencies: (at least 8 credits)		(24) Instrumental Analysis Lab	Semester	1
➢ Native Language and Literature : 4 credits		(25) Process Design	Semester	3
Narrative Expression: Language Literacy		(26) Chemical Engineering Laboratory(I)	Semester	1
Narrative Expression: Language Application		(27) Chemical Engineering Laboratory(II)	Semester	1
➢ Foreign Language: at least 4 credits and up to 6 credits.		Total		82
■ English Communication and Expression		VI. Professional elective courses within the department: A minimum of 27 credits must be completed is required.		
■ Academic English : Listening and Reading		VII. Other Regulations:		
□ Academic English : Speaking and Writing		1. Biochemistry: Compulsory departmental elective		
iii. Domain Competencies: at least 10 credits		2. Introduction to Materials Science: Compulsory departmental elective		
➢ Humanistic Domain, Social Science Domain, and Natural Domain: at least one course in each Domain, totaling at least 6 credits.		3. Introduction to Polymer Science: Compulsory departmental elective		
➢ Integrated Domain: at least 4 credits.		4. Practice in Process Design: Compulsory departmental elective		
➢ For National Defense Education courses can't be counted toward general education credits.		5. Undergraduate students may take graduate courses regardless of the number of credits.		
➢ Our program belongs to the area of <u>Engineering Technology</u> , therefore, only one course from this area will be recognized.		6. Moral shall be conducted in accordance with school regulations.		
iv. Except for the Academic English Speaking and Writing course, extra credits <input type="checkbox"/> can <input checked="" type="checkbox"/> can't be counted toward the graduation credits.		VIII. Minor Degree: To earn a minor degree, students are required to take 20 (or more) credits in addition to the department's minimum graduation credits. For more details, please see the bulletin of Curriculum Division website.		
IV. College Required Professional Courses and Credits: None		IX. Double Major: The graduation requirements for students in pursuit of a double major (department or degree program) shall be determined by relevant regulations in effect at the time when their application was approved. Double major students not only have to fulfill all graduation credit requirements of their first major (department or degree program), they must also complete all core courses for their second major (department or degree program). Only upon achieving a passing grade in these courses will students be eligible for a double major graduation qualification. Undergraduate students who have not complete or are short of 40 credits for the second major must make up for those credits by taking courses designated by the second major (department or degree program).		
V. Department Required Professional Courses and Credits: Minimum 82 credits.		X. Cross-Disciplinary Expertise Development Program: If the required professional courses of the program overlap with those of the affiliated departments (degree programs), double major, minor, or other cross-disciplinary expertise programs, students shall not take the said courses. Instead, they shall select other courses specified by the program's departments (degree programs) or colleges.		
Core Course Title	Semester/Year	Credits	XI. Students who graduate from educational institutions equivalent to senior high school or junior college with a secondary education study period of less than 6 years are required to complete at least 12 extra credits as part of their graduation requirements. The additional credits and courses to be taken shall be departmental professional electives (no restrictions on subjects).	
(1) Introduction to Chemical Engineering and Chemical Process Safety	Semester	3		
(2) Calculus(I)	Semester	3		
(3) Calculus(II)	Semester	3		
(4) General Physics	Year	6		
(5) General Physics Lab	Year	2		
(6) General Chemistry	Year	6		
(7) General Chemistry and Lab	Year	2		
(8) Fundamentals of Computer Programming Languages	Semester	3		
(9) Material and Energy Balances	Semester	3		
(10) Engineering Mathematics (I)	Semester	3		
(11) Engineering Mathematics (II)	Semester	3		
(12) Organic Chemistry	Year	6		
(13) Organic Chemistry Lab.	Year	2		
(14) Physical Chemistry	Year	6		
(15) Physical Chemistry Lab	Year	2		

Administrative Staff of the Department 系(所、學位學程)承辦人 :

助教顧玉茹

Signature of the Department Chair: 系所主管簽章 :

教授兼化學工程學系系主任 李思禹