

成功大學生物醫學工程學系博士班修業辦法 (115.7.1 更新)

Requirements for Ph.D. Program in Biomedical Engineering Department, National Cheng Kung University

(Update July.1, 2026)

83 學年度醫學工程研究所第四次所務會議 (84.01.04) 通過 Approved at the 4th Faculty Meeting in 2003 fall semester, 10/13/2003	110 學年度第 1 學期第 2 次系務會議修正通過(110.09.07) Amended and Approved at the 2nd Faculty Meeting in 2021 fall semester, 09/07/2021
92 學年度醫學工程研究所第一學期第二次所務會議(92.10.13) 修正通過 Approved at the 3rd Faculty Meeting in 2003 fall semester, 10/13/2003	110 學年度第 2 學期第 1 次系務會議修正通過(111.02.22) Amended and Approved at the 1st Faculty Meeting in 2021 spring semester 02/22/2022
93 學年度醫學工程研究所第二學期第三次所務會議(94.03.30) 修正通過 Approved at the 3rd Faculty Meeting in 2004 spring semester, 3/30/2005	110 學年度第 2 學期第 3 次系務會議修正通過(111.04.11) Amended and Approved at the 3rd Faculty Meeting in 2021 spring semester, 04/11/2022
94 學年度醫學工程研究所第一學期第五次所務會議(95.01.25) 修正通過，95 學年度實施 Approved at the 5th Faculty Meeting in 2005 fall semester, 1/25/2006	110 學年度第 2 學期第 4 次系務會議修正通過(111.05.24) Amended and Approved at the 4th Faculty Meeting in 2021 spring semester, 05/24/2022
95 學年度醫學工程研究所第二學期第五次所務會議(96.04.20) 修正通過，96 學年度實施 Approved at the 5th Faculty Meeting in 2006 spring semester, 4/20/2007	111 學年度第 2 學期第 2 次系務會議修正通過(112.03.27) Amended and Approved at the 2nd Faculty Meeting in 2022 spring semester, 03/27/2023
96 學年度醫學工程研究所第二學期第一次所務會議(97.02.29) 修正通過 Approved at the 1st Faculty Meeting in 2007 spring semester, 2/29/2008	112 學年度第 1 學期第 1 次系務會議修正通過(112.08.23) Amended and Approved at the 1st Faculty Meeting in 2023 fall semester, 08/23/2023
98 學年度醫學工程研究所第一學期第二次所務會議(98.10.23) 修正通過 Approved at the 2nd Faculty Meeting in 2009 fall semester, 10/23/2009	113 學年度第 1 學期第 1 次系務會議修正通過(113.08.29) Amended and Approved at the 1st Faculty Meeting in 2024 fall semester, 08/29/2024
98 學年度醫學工程研究所第二學期第一次所務會議(99.03.26) 修正通過 Approved at the 1st Faculty Meeting in 2009 spring semester, 3/26/2010	113 學年度第 1 學期第 4 次系務會議修正通過(113.10.22) Amended and Approved at the 4th Faculty Meeting in 2024 fall semester, 10/22/2024 (本次修正適用所有未畢業之博士生)
101 學年度生物醫學工程學系第 1 學期第 1 次系務會議(101.08.21) 修正通過 Approved at the 1st Faculty Meeting in 2012 fall semester, 8/21/2012	113 學年度第 2 學期第 4 次系務會議修正通過(114.04.15) Amended and Approved at the 4th Faculty Meeting in 2025 Spring semester, 04/15/2025
104 學年度生物醫學工程學系第 1 學期第 3 次系務會議(104.10.26)修正通過，105 學年度實施 Approved at the 3rd Faculty Meeting in 2015 fall semester, 10/26/2015	113 學年度第 2 學期第 7 次系務會議修正通過(114.06.25) Amended and Approved at the 7th Faculty Meeting in 2024 spring semester, 06/25/2024
104 學年度生物醫學工程學系第 1 學期第 5 次系務會議(105.01.12)修正通過，105 學年度實施 Approved at the 5th Faculty Meeting in 2015 spring semester, 1/12/2016	114 學年度第 2 學期第 1 次課程會議修正通過(115/02/06) (本次修正適用於尚未提出博士資格考申請之所有博士生) Amended and approved at the 1st Curriculum Committee Meeting of the Spring Semester, 2026 (2/6/2026); applicable to all PhD students who have not yet applied for the doctoral qualifying examination.
106 學年度生物醫學工程學系第 1 學期第 1 次系務會議(106.09.14)修正通過 Approved at the 1st Faculty Meeting in 2017 fall semester, 9/14/2017	114 學年度第 2 學期第 3 次系務會議修正通過(115/05/04) Amended and Approved at the 3rd Faculty Meeting in 2026 Spring semester, 05/04/2026
107 學年度生物醫學工程學系第 1 學期第 3 次系務會議(107.11.08) Approved at the 3rd Faculty Meeting in 2018 fall semester, 11/08/2018	114 學年度第 2 學期第 4 次系務會議修正通過(115/06/18) (適用年度與對象詳見「115 年度博士班修業規範暨資格考相關規定修正公告」) Amended and Approved at the 4th Faculty Meeting in 2026 Spring semester, 06/18/2026
107 學年度生物醫學工程學系第 1 學期第 4 次系務會議(108.01.03) Approved at the 4th Faculty Meeting in 2018 fall semester, 1/03/2019	
107 學年度生物醫學工程學系第 2 學期第 1 次系務會議(108.03.07) Approved at the 1st Faculty Meeting in 2018 spring semester, 3/07/2019	
108 學年度生物醫學工程學系第 2 學期第 6 次系務會議(109.06.10) Approved at the 6th Faculty Meeting in 2019 spring semester, 6/10/2020	
109 學年度生物醫學工程學系第 1 學期第 1 次系務會議(109.08.06) Approved at the 1st Faculty Meeting in 2020 fall semester, 8/6/2020	
109 學年度生物醫學工程學系第 2 學期第 2 次系務會議(110.03.31) Approved at the 2nd Faculty Meeting in 2020 spring semester, 3/31/2021	

第一條 課程學分規定

Article 1: Course Requirements

一、博士班研究生至少應修滿 18 學分（含專題討論），論文、外國語文另計，不具醫學工程碩士學位者，應另補修醫學工程相關課程 26 學分（含經系務會議認可之抵免學分數。抵免申請應於入學第一學期第一個月向系務會議提出）。直攻博士者（含醫學士、學士、碩士直升者）應修滿 36 學分（含博士班 18 學分）。

Students of the Ph.D. program in Biomedical Engineering Institute are required to complete a minimum of 18 credits including 4 credits of seminars for graduation, not including thesis credits and foreign languages credits.

For students who got admitted without Biomedical Engineering research background, he or she has to take additional 26 credits. If the students wished to waive credits, he or she must file the application to BME faculty meeting in the first month of his or her first

registration semester. Only the credits that are approved by faculty meeting can be counted as credits for graduation.

Students who applied for Direct Pursuit of Ph.D. degree (including M.D. degree holders, those who got directly admitted to master degree, and bachelor degree holders) should complete 36 credits (including 18 credits for Ph.D. program).

二、第一款規定之外，博士班學生補修學分

In addition, the required courses for PhD program students are as follows

- (一) 甲乙組：選修本校生理學、解剖學或其他生命科學相關的課程（需提請系務會議通過）6 學分以上。選修其他生命科學相關課程學分超過 3 學分者，承認 3 學分。

Students must complete at least 6 credits in (1) *Physiology*, (2) *Human Anatomy*, or (3) other Biology-related courses offered at NCKU (subject to approval by the BME faculty meeting). If a student takes more than 3 credits in other life science-related courses, only 3 credits will be counted toward this requirement.

- (二) 丙組：選修本校大學部工程數學、研究所醫用數學或生物統計 6 學分以上。

Students in Group C are required to complete at least 6 credits in the following NCKU courses: (1) undergraduate-level *Engineering Mathematics*, (2) graduate-level *Engineering Mathematics in Medicine*, or (3) graduate-level *Biostatistics*.

- (三) 丁組：選修本系醫療器材創新設計(一)、(二)。若未修過生理學或解剖學者，須修本校生理學或解剖學 3 學分。若未修過工程數學者，須修研究所的醫用數學或生物統計（醫療器材生醫統計與臨床實驗）3 學分（註：大學部課程 60 分及格，但不計入畢業學分）。

Students in Group D are required to complete *Biodesign (I)* and *Biodesign (II)* offered by the BME program. Students who have not previously taken *Physiology* or *Human Anatomy* must complete 3 credits in either *Physiology* or *Human Anatomy* offered at NCKU. Those without prior credits in *Engineering Mathematics* must complete 3 credits in either *Engineering Mathematics in Medicine* or *Biostatistics (Biostatistics and Clinical Trials for Medical Devices)*.

(Note: A minimum passing grade of 60 is required for undergraduate-level courses; however, such credits will not be counted toward graduation requirements.)

三、上述課程需經指導教授及系主任同意

Enrollment in the above-mentioned courses requires prior approval from both the academic advisor and the department chair.

四、本系學、碩士直升博士者，至少應修習博士班專題討論二門（且含口頭報告 2 次）

Students who are directly admitted into the doctoral program from the undergraduate or master's level must complete at least two Doctoral Seminar courses, each including an oral presentation.

五、第二款所規定之解剖學，外籍生若因中文授課而無法修習時，得修習本校生醫相關科系英語授課 3 學分之細胞生物學相關科目抵免之。

For international students who are unable to take *Anatomy* due to it being taught in Chinese, a 3-credit, English-taught *Cell Biology*-related course offered by any department within NCKU's biomedical disciplines may be taken as a substitute, subject to approval.

六、碩博士班研究生依規定應修習研究生通識課程，含學術倫理至少 6 小時、中英文寫作能力及溝通表達能力各 1 小時。本系研究生通識規劃於專題討論(二)及專題討論(三)課程中，若因故無法修習上述兩門課程時，應另行補足研究生通識時數(可併計「臺灣學術倫理教育資源中心」線上課程時數)，並於畢業審查時檢據證明之。

Graduate students in the master's and doctoral programs are required to complete general education courses for graduate students, which include: at least 6 hours of *Academic Ethics*, and 1 hour each in *Chinese and English Writing Skills* and *Communication and Presentation Skills*.

These general education components are integrated into *Seminar (II)* and *Seminar (III)* courses offered by the department. Students who are unable to enroll in either of these two seminars must independently complete the required hours through alternative means. Starting from the Fall semester of 2023, students may fulfill the *Academic Ethics* requirement via online courses provided by the Taiwan Academic Ethics Education Resource Center. Proof of completion must be submitted at the time of graduation review.

第二條 選定指導教授

Article 2: Thesis Advisor

一、入學第一學年結束前必須選定，異動者，依「國立成功大學生物醫學工程學系研究生選擇及更換指導教授原則」提出申請。

Students must select a thesis advisor before the end of their first academic year. Any change of advisor must be made in accordance with the “Guidelines for the Selection and Change of Thesis Advisor for Graduate Students in the Department of Biomedical Engineering, NCKU” and submitted to the department office for approval.

二、主要指導教授須為本系專任教師。

The primary thesis advisor must be a full-time faculty member of the Department of Biomedical Engineering, NCKU.

第三條 資格考試

Article 3: Qualification Examinations

甲、乙組學生得自行選擇考試組別為甲/乙或丁組。

Students in Group A or B may choose to take the qualification examination under Group A/B or Group D.

一、筆試

Written test

(一)分組考試科目規定由本系另行公告於系所網站。

The examination subjects for each group will be separately announced on the department's official website.

(二)選考科目須經指導教授或系主任簽名同意後始可提出申請，選考科目必須於入學後 4 年內完成修課與資格考試始得發放資格考通過證書，未於期限內完成者視同未通過資格考，應予退學。

Selected examination subjects must be approved and signed by the student's advisor or the department chair prior to application. Students must complete the coursework and written examinations within four years of enrollment in order to be issued the certificate. Failure to meet this requirement within the specified timeframe will be considered as failure of the qualification examination, and the student will be dismissed from the program.

- (三) 筆試時，所有考試科目同時考，及格之科目成績得保留，筆試有 3 次考試之機會，若未如期通過者，應予退學。

All written examination subjects must be taken simultaneously. Subjects passed in each attempt may be retained. Each student has a maximum of three attempts to pass all required subjects. Failure to pass all subjects within the allowed attempts will result in dismissal from the program.

- (四) 研究生若於時限內，跨組科目無法通過，經指導教授推薦，系主任認可後，得以選修相關學科及格，取代該跨組科目考試，但以選考前已經修過該科目學分者為限。

If a student fails to pass a cross-group subject within the allowed attempts and within the specified time limit, the student may substitute the written exam by passing a corresponding course, provided that the course was completed for credit prior to the qualification examination. This substitution must be recommended by the advisor and approved by the department chair.

- (五) 資格考試應於入學 4 年內完成。

The qualification examination must be completed within four years from the date of admission.

- (六) 資格考得以發表論文方式抵免為之（應於入學 4 年內完成）。學生仍需依規定申請資格考科，至少需選考一科所屬組別之專業科目，一篇至多抵三科，以三科為限（ $\text{Ranking} \leq 5\%$ 可抵三科、 $5\% < \text{Ranking} \leq 25\%$ 可抵二科， $25\% < \text{Ranking} \leq 50\%$ 可抵一科，Q1 與 Q2 之排名認定以投稿或發表當年度 JCR 擇優計算）。該論文比照本辦法第四條畢業論文條件且須為 IF 排名前 50%（含），不得與畢業論文積分重覆計算，抵免科目與資格考成績一併提送系務會議審議。

The qualification examination may be waived upon journal publication, provided the journal is published within four years of the date of admission. Students must still apply for qualification exam subjects in accordance with regulations, and must select at least one professional subject from their respective division. A single paper may waive up to three subjects, with a maximum limit of three subjects in total ($\text{Ranking} \leq 5\%$ can waive three subjects, $5\% < \text{Ranking} \leq 25\%$ can waive two subjects, and $25\% < \text{Ranking} \leq 50\%$ can waive one subject). The ranking certification of Q1 and Q2 shall be determined based on the higher optimal JCR journal ranking in either the year of submission or publication.

The journal paper used for substitution must meet the same criteria as outlined in Article 4 for graduation thesis requirements, including being ranked within the top 50% (inclusive) by Impact Factor (IF). Publications used for exemption from the qualification examination may not be double-counted toward the required research publication points for graduation. All waived subjects and remaining exam results must be submitted to the department faculty meeting for review and approval.

(七) 資格考試之筆試應於每學期之學期結束前提出申請，第二學期開學後第一個月舉行，相關日期每學期另行公告之。

Students who intend to take the written qualification examination in a given semester must submit their application before the end of the preceding semester. The examination will be held within the first month of the designated semester. Specific dates will be announced by the department at the beginning of each semester.

二、通過資格考試者為博士學位候選人。

Students who pass the qualification examination will be recognized as doctoral candidates.

三、學位口試至少 3 個月前，必須完成論文研究計畫書審查。

The thesis research proposal must be reviewed and approved at least three months prior to the doctoral oral defense.

第四條 學位口試：

Article 4: Doctoral Degree Examinations

一、申請者須為博士學位候選人，且已修畢應修學分。

The applicant must be a doctoral candidate and must have completed all required coursework and credits for graduation.

二、博士論文以英文撰寫，內容須為修讀博士學位期間所完成之研究。申請學位口試前，應檢附下列資料，提送系務會議審核通過後，始得提出學位口試申請：

The doctoral dissertation must be written in English and must present research conducted during the applicant's enrollment in the Ph.D. program. Before applying for the doctoral oral defense, the candidate must submit the following documents for review and approval by the departmental faculty meeting.

三、本系博士班學生於畢業前發表之論文積分，需符合以下規範：

Doctoral students of the Department must fulfill the following publication credit requirements prior to graduation:

(一) 論文積分累積須達 5 點以上（含 SCI 論文至少 3 點）。

A cumulative total of at least 5 points is required, of which at least 3 points must be derived from SCI-indexed journals.

(二) 學生至少須有一篇為列名**排序**第一位之論文。

The student must be the **first-listed author (the author whose name appears first in the author order)** of at least one paper.

(三) 學生非第一作者或共同第一作者之論文，不予計分。

Papers where the student is neither the first author nor a co-first author shall not be counted toward the publication points.

(四) 該博士生之指導教授須為通訊作者（Corresponding Author）之一，且本系（Department of Biomedical Engineering, National Cheng Kung University）須為論文之首位所屬單位。

The student's advisor must be a Corresponding Author of the paper. Furthermore, the

"Department of Biomedical Engineering, National Cheng Kung University" must be listed as the primary (first) affiliation for the student.

- (五) 論文記點之計算，以申請審查當時 JCR 的最新的期刊影響係數 (impact factor, I.F.) 及排名 (category ranking) 計算點數，採 JIF Rank (影響因子排名) 及 IF Percentile (影響因子百分位數) 雙軌制，但僅能擇一方式計算所有論文之積分，不可混用；如論文投稿 (date of receiving) 時之期刊論文點數高於最新期刊排名點數者，可從優採計。

Point calculation shall be based on the latest Journal Citation Reports (JCR) at the time of application for review, including the journal's Impact Factor (IF) and category ranking.

Two systems are available for point evaluation:

- (1) JIF Rank (journal category ranking), and
- (2) IF Percentile (impact factor percentile ranking).

Only one method may be used consistently across all submitted papers; mixing the two is not permitted. If the journal ranking or impact factor at the time of submission (based on the "date of receiving") is higher than that at the time of review, the higher value may be adopted.

- (六) 論文積分計算如下：

Paper point calculation is as follows:

1. IF 排名在該領域前 10% (含) 或 $IF \geq 7.0$ 者為 5 點。
Journals ranked in the top 10% (inclusive) of their subject category or with an Impact Factor (IF) ≥ 7.0 will be awarded 5 points.
2. IF 排名在該領域前 25% (含) 或 $IF \geq 5.0$ 者為 4 點。
Journals ranked in the top 25% (inclusive) or with an IF ≥ 5.0 will be awarded 4 points.
3. IF 排名在該領域前 50% (含) 或 $IF \geq 3.0$ 者為 3 點。
Journals ranked in the top 50% (inclusive) or with an IF ≥ 3.0 will be awarded 3 points.
4. IF 排名在該領域前 75% (含) 或 $IF \geq 2.0$ 者為 2 點。
Journals ranked in the top 75% (inclusive) or with an IF ≥ 2.0 will be awarded 2 points.
5. 其他 SCI (含 SCIE) 為 1 點。(以 2 點為限)
Other SCI-indexed papers (including SCIE) that do not meet the above thresholds will be awarded 1 point. (A maximum of 2 points may be counted under this category.)
6. 與論文研究相關的醫療器材查驗登記文件 (如 FDA 510k, PMA 或 CE) 備齊並完成登記者或 TFDA Class II 以上獲證者為 1 點，本項累計以 1 點為限。

Medical device regulatory approvals directly related to the dissertation—such as

FDA 510(k), PMA, CE certification, or TFDA Class II or above **medical device** approval—may be recognized for 1 point, provided the application is complete and the approval **or certification has been obtained. The maximum cumulative score recognized under this category is 1 point.**

7. 修業年限（不含休學）在 6 年(含)以上者，其第一作者的國際會議論文、EI 的英文期刊論文或獲得國內外發明專利（不含新型專利）者為 0.5 點，**本項累計以 1 點為限。**

For Ph.D. candidates with 6 years or more of study (excluding periods of leave of absence), the following achievements may be recognized at 0.5 point each, **with a maximum cumulative total of 1 point under this category:**

- (1)First-author international conference papers
- (2)English-language papers published in EI-indexed journals.
- (3)Granted invention patents (excluding utility model patents), either domestic or international.

8. **論文發表於僅收錄於 SSCI（Social Sciences Citation Index）之期刊者，依本條第 1 至 5 款之 SCI 排名計分標準，以兩倍點數計算；若期刊同時收錄於 SSCI、SCI 或 SCIE 期刊，則不適用兩倍點數計算。**

Papers published in journals exclusively indexed in the Social Sciences Citation Index (SSCI) are evaluated using the same ranking criteria as SCI journals, and the points will be counted as double. However, if a journal is indexed in both SSCI and SCI or SCIE, the double-point calculation shall not apply.

- (七) 以上資料檢附格式另訂之，如獲專利暫時無法發表者，須檢附專利文件及完成之文稿，交由系務會議審議之。

The required submission format shall be specified separately. If the dissertation-related work has obtained a patent and cannot yet be publicly published, the applicant must submit the patent documentation along with the completed manuscript for review by the departmental faculty meeting.

- 四、口試委員：由指導教授推薦 5 至 9 位委員組成，校外委員須 1/3 以上。召集人由校內委員（非指導教授）一人擔任，其餘委員選任相關規定依本校規定辦理。

Oral Defense Committee Members: The committee shall consist of 5 to 9 members and must be recommended by the advisor. At least one-third of the members must be from outside NCKU. The convener must be an internal NCKU faculty member (excluding the advisor). All member selections and appointment procedures shall be handled in accordance with NCKU regulations.

- 五、學位考試方式：依本校及本系規定辦理，且應於一週前公告之。

Examination Procedure: The doctoral degree examination shall be conducted in accordance with both NCKU and departmental regulations, and the examination date must be publicly announced at least one week in advance.

第五條 其他相關規定：

Article 5: Other Regulations

- 一、 博士班學生得視需要擔任助教工作。
Ph.D. students may be assigned to serve as teaching assistants when needed.
- 二、 研究生校外有專職者須向指導教授報備。
Graduate students holding full-time employment outside the university must report to their academic advisor in advance.
- 三、 博士班學位候選人若需至設備較本系為佳之機關做實驗時，應提出書面申請，經指導教授及系主任同意後，得至該機關研究。
Doctoral candidates who intend to conduct research or experiments at external institutions with more advanced equipment must submit a written application. Approval from both the advisor and the department chair is required prior to conducting research off-campus.
- 四、 參與本系與他校雙聯碩、博士學位的學生，其修業規定參照該雙聯學位同意書所制定之「碩、博士論文共同指導協議書」。
Students participating in dual-degree master's or doctoral programs jointly offered by the department and other institutions must comply with the study regulations and co-advising agreements specified in the official dual-degree program memorandum.

第六條 如有未盡事宜依本系、本校及教育部相關規定辦理。

Article 6: Any unstated issues derived from this regulation, must follow the direction of BME Department, NCKU and/or Taiwan's Ministry of Education.