

國立成功大學智慧半導體及永續製造學院
智慧與永續製造學位學程博士學位候選人資格考核實施要點
Directions for Doctoral Qualifying Examination
of the Program on Smart and Sustainable Manufacturing
Under the NCKU Academy of Innovative Semiconductor and Sustainable Manufacturing

111 年 11 月 9 日 111 年度第 3 次院務會議通過
Approved at the 3rd meeting of the Academy Affairs Council on November 9, 2022

111 年 11 月 21 日 111 年度第 7 次管理委員會通過
Approved at the 7th meeting of the Management Committee on November 21, 2022

111 年 12 月 14 日 111 年度第 6 次監督委員會備查
Ratified at the 6th meeting of the Supervisory Committee on December 14, 2022

112 年 12 月 25 日 112 年度第 4 次管理委員會修正通過
Approved at the 4th meeting of the Management Committee on December 25, 2023

113 年 4 月 30 日 113 年度第 1 次監督委員會備查
Ratified at the 1st meeting of the Supervisory Committee on April 30, 2024

113 年 10 月 8 日 113 年度第 1 學期第 1 次學程課程委員會通過
Approved at the 1st meeting of the Curriculum Committee of the Program on October 8, 2024

113 年 12 月 2 日 113 年度第 2 次院務會議備查
Ratified at the 2nd meeting of the Academy Affairs Council on December 2, 2024

一、國立成功大學智慧半導體及永續製造學院（以下簡稱本學院）智慧與永續製造學位學程（以下簡稱本學程），為辦理博士學位候選人資格考核，依據國家重點領域產學合作及人才培育創新條例第 23 條及本學程博士班修業辦法，訂定本要點。

I. In accordance with Article 23 of National Key Fields Industry-University Cooperation and Skilled Personnel Training and Academic Regulations for the Doctoral Program on Smart and Sustainable Manufacturing, these Directions are established by the Program on Smart and Sustainable Manufacturing (hereafter the Program) under the Academy of Innovative Semiconductor and Sustainable Manufacturing (hereafter the Academy) at National Cheng Kung University (NCKU) to regulate the administration of its doctoral qualifying examination.

二、本學程博士候選人資格考試科目，應自本學程專業課程之固態熱力學、材料動力學、振動力學、化學工程(一)、高等反應工程學、結晶化學、智慧型製造系統、工業 4.1:零缺陷的智慧製造，八科任選兩科應試。

II. The Program doctoral students should choose two of the eight courses, including Solid State Thermodynamics, Kinetics of Materials, Mechanics of Vibrations, Chemical Engineering (1), Advanced Chemical Reaction Engineering, Crystal Chemistry, Intelligent Manufacturing Systems, and Industry 4.1: Intelligent Manufacturing with Zero Defects, as test subjects for the qualifying examination.

三、本學程博士候選人資格考試通過方式及通過期限：

(一)本學程博士候選人資格考試科目得以修課抵免，但暑修課程不適用之。

1.選修及抵免考試科目如下：

(1)固態熱力學:選修本學程所開設之固態熱力學課程；

- (2)材料動力學:選修本學程所開設之材料動力學課程；
- (3)振動力學:選修本學程所開設之振動力學課程；
- (4)化學工程(一):選修本學程所開設之化學工程(一)課程；
- (5)高等反應工程學:選修本學程所開設之高等反應工程學課程；
- (6)結晶化學:選修本學程所開設之結晶化學課程；
- (7)智慧型製造系統:選修本學程所開設之智慧型製造系統課程；
- (8)工業 4.1:零缺陷的智慧製造:選修本學程所開設之工業 4.1:零缺陷的智慧製造課程。

2.學期成績達修課班級的前(含)50%，始得申請抵免該考試科目。申請人應檢附修課成績在該班的成績排名，於入學後不含休學之六個學期內提出申請。

(二)本學程博士候選人資格考試得以論文抵免，抵免條件如下：

- 1.於入學後不含休學之六學期內發表一篇於 SCI 相關領域、影響係數(Impact factor)領域排名(JCI) Q2(含)以前之期刊(領域排名可擇優)，排名及影響係數之認定，以論文投稿日當年度或前五年度所公布之 ISI 資料庫排名及影響係數為準，但提出申請時之論文需為”已接受”，且：
 - (1)除指導教授、共同指導教授外，研究生應為論文第一作者；除有本款第 3 目之特殊原因外，隸屬單位(affiliation)應僅列 Program on Smart and Sustainable Manufacturing, Academy of Innovative Semiconductor and Sustainable Manufacturing, National Cheng Kung University。
 - (2)論文通訊作者應為指導教授,且列本校為服務單位(affiliation)之一。
- 2.論文發表在無明顯標示通訊作者之期刊時，應檢附指導教授為通訊作者之證明。
- 3.論文發表前，研究生有下列各細目情形時，可增(共)列隸屬單位(affiliation)：
 - (1)與校內各級單位、中心以上簽有正式合作備忘錄或意向書等單位合作，並有支領對方經費者；
 - (2)與簽准共同指導教授之單位合作，並有支領對方經費者；
 - (3)以在職生身分入學者，可共列其工作單位；
- 4.本款抵免之論文，不計入畢業所需論文數。但論文有多人相同貢獻第一作者時，則貢獻權重均分之，可累計發表論文數加總貢獻權重達一篇。

(三)本學程博士候選人資格考試得以發明專利抵免，抵免條件如下：

- 1.於入學後不含休學之六學期內獲核准發明專利一篇。
- 2.需為第一作者，指導教授需為發明人之一。
- 3.專利所有權所屬單位須為本校，若專利所有權非本校屬產學合作單位，則需檢附合約佐證。
- 4.本款抵免之專利，不計入畢業所需論文或專利篇數。

III. Requirements and Deadline for the Doctoral Qualifying Examination:

(I) An applicant may apply for exemption of subject tests for the doctoral qualifying examination of the Program with completion of semester courses for the corresponding test subjects (summer courses are not applicable).

1. Test subjects and courses eligible for exemption designated by the Program:

- (1) Solid State Thermodynamics: Solid State Thermodynamics offered by the Program
- (2) Kinetics of Materials: Kinetics of Materials offered by the Program
- (3) Mechanics of Vibrations: Mechanics of Vibrations offered by the Program
- (4) Chemical Engineering (1): Chemical Engineering (1) offered by the Program
- (5) Advanced Chemical Reaction Engineering: Advanced Chemical Reaction Engineering offered by the Program

- (6) Crystal Chemistry: Crystal Chemistry offered by the Program
 - (7) Intelligent Manufacturing Systems: Intelligent Manufacturing Systems offered by the Program
 - (8) Industry 4.1: Intelligent Manufacturing: Industry 4.1: Intelligent Manufacturing offered by the Program
2. Only with the designated course completed with a semester grade ranked among the top 50% of the class can an application for waiving the test subject be submitted. The applicant shall submit the transcript with the grade ranking information about the course within six semesters after admission (excluding the period of study suspension).
- (II) Paper publication requirements for exemption of the qualifying examination:
1. A paper authored by the doctoral student should be published in a SCI-related journal, ranked (JCI) Q2 and above by impact level (may use the journal's best ranking by subject) within six semesters after admission. The ranking and impact level of the journal can be referred to by the annual ISI database releases in the publication year or the previous five years. When an application is submitted for exemption, the paper must be one accepted for publication that meets the following requirements:
 - (1) In addition to the advisor and co-advisors, the applicant should be identified as the first author of the paper. Except for circumstances listed in Item 3 of Subparagraph (II), the paper should be identified as one published in affiliation with the Program on Smart and Sustainable Manufacturing, Academy of Innovative Semiconductor and Sustainable Manufacturing, National Cheng Kung University.
 - (2) The corresponding author of the paper should be the advisor, with NCKU listed as one of the author affiliations.
 2. In case of a paper published in a journal that does not clearly indicate the corresponding author, an application shall be submitted with a document certifying the advisor as the corresponding author.
 3. Students can list other affiliation units, in addition to NCKU, if they cooperate with other institutions before the publication of a paper under the following circumstances:
 - (1) They cooperate with a unit in the organization of the university on all levels or as a center with a signed cooperation memorandum or letter of intent, and receive funds from the unit.
 - (2) They cooperate with an institution that co-advisors are affiliated with, and receive funds from the institution.
 - (3) Those who enroll as in-service students can list their employment affiliation.
 4. The paper used for subject test exemption will not be counted among the papers required for graduation. Further, if several authors are identified as the first author of the paper, the applicant's contribution weight of the paper will be divided by the number of first authors. The applicant may cumulate his/her contribution weights of several papers to be one paper to meet the one paper requirement for exemption.
- (III) One invention patent for exemption of the qualifying examination under the following conditions:
1. One invention patent granted within six semesters after admission (excluding the period of study suspension).
 2. The student should be the first author and the advisor should be one of the inventors.
 3. The patent ownership belongs to NCKU. If the patent ownership belongs to an industry-NCKU cooperation institution, the contract must be provided.
 4. The patent is not included as one for publication or patent requirements for graduation.

四、以論文或發明專利抵免博士候選人資格考試者，須於論文投稿前或發明專利申請前送本學程登記，送業務會議備查，始具抵免資格。

IV. Individuals who wish to use a journal paper or an invention patent to waive the qualifying examination for doctoral candidacy must first submit the documents to the Program Affairs Council for record-keeping. This step must be completed before submitting the paper to the publisher or applying for the invention patent to the intellectual property office. Only after this procedure will they be eligible to apply for the exemption from the qualifying examination.

五、經本校核准至境外大學修讀博士雙聯學位之博士班研究生，於該境外大學通過之博士資格考試者，得抵免本學程博士候選人資格考試。

V. Doctoral students approved by NCKU to pursue a dual PhD degree at an overseas university can apply to waive the qualifying examination for the Program if they pass the doctoral qualifying examination at the overseas university.

六、本要點經本學程課程委員會通過後實施，送院務會議備查，修正時亦同。

VI. The Directions shall be approved by the Curriculum Committee of the Program and ratified by the Academy Affairs Council before taking effect. Amendments shall be processed accordingly.

These regulations were translated from the original Chinese. In the event of discrepancies between the two versions, the Chinese always takes precedence.

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智慧與永續製造學位學程博士學位候選人資格考核實施要點
修正草案條文對照表

修正條文	現行條文	說明
四、以論文或發明專利抵免博士候選人資格考試者，須於論文投稿前或發明專利申請前送本學程 <u>登記</u> ， <u>送</u> 業務會議 <u>備查</u> ，始具抵免資格。	四、以論文或發明專利抵免博士候選人資格考試者，須於論文投稿前或發明專利申請前送本學程業務會議審核通過後，始具抵免資格。	一、因論文發表及專利申請具有研究時效性，擬予修訂。