

國立陽明交通大學物理研究所與境外大學辦理雙聯學制

111學年度碩博士生修業規章

National Yang Ming Chiao Tung University Institute of Physics
Academic Regulations for the Joint Dual-Degree of Master and Doctoral Program with
Overseas University in Academic Year 2022

110學年度第3次所務會議修訂通過(111/1/12)

Amended and approved at the 3rd Institute Affairs Meeting in Academic Year 2021 (January 12, 2022)

110年3月所務會議通訊審議修訂通過(110/3/30)

Amended and approved in March 2021 at the Communication of Institute Affairs Meeting (March 30, 2021)

109學年度第1次課程委員會會議修訂通過(110/3/24)

Amended and approved at the 1st Curriculum Committee Meeting in Academic Year 2021 (March 24, 2021)

第一條 國立陽明交通大學物理研究所（以下簡稱本所）為增進境外學術合作，加強本所與境外大學校院（以下簡稱境外大學）學生之境外交流學習，特訂定本規章。

Article 1 The Regulation is stipulated by the Institute of Physics of National Yang Ming Chiao Tung University (hereinafter referred to as the Institute) to promote overseas academic cooperation and to enhance students' exchanges and learning between the Institute and overseas universities, colleges, and institutions (hereinafter referred to as overseas universities).

第二條 本所辦理雙聯學制之境外大學，應符合下列規定：

Article 2 The overseas universities which conduct the joint dual-degrees with the Institute should comply with the following regulations:

一、須當地國政府或教育主管機關立案或認可，且與國立陽明交通大學（以下簡稱本校）或本所簽訂學術交流協議之境外大學。

1. Overseas universities should be registered in or recognized by the local country or the competent authority of education, and they should contract the agreement of academic exchange with National Yang Ming Chiao Tung University (hereinafter referred to as NYCU) or the Institute.

二、符合「大學辦理國外學歷採認辦法」或「大陸地區學歷採認辦法」規定之大學院校。

2. All universities, colleges, and institutes should comply with “Regulations Regarding the Assessment and Recognition of Foreign Academic Credentials for Institutions of Higher Education” or “Regulations Regarding the Assessment and Recognition of Academic Credentials of the Mainland Area.”

第三條 本規章所稱之辦理雙聯學制，係指本校或本所與境外大學依簽訂協議，協助所屬學生於原校修業至少滿二學期後，至對方學校進修學位，並於符合雙方畢業資格規定後，分別由兩校授予相同層級或不同層級之學位。

Article 3 The joint dual-degree of the Regulation is that NYCU or the Institute contracts the agreement with overseas universities for assisting students to visit other universities for advanced studies after studying in the original university for at least two semesters. After the students meet the graduation requirement of both universities, the two universities will confer the degrees with the same or different level upon the students separately.

第四條 依本規章修讀學位學生，在二校修業時間得予併計，修業期間除依本校學則規定外，應符合下列規定：

Article 4 For students who are acquiring the degree according to the Regulation, the study periods in the two universities can be combined together. Besides the academic regulations of NYCU, the study period should comply with the following requirements:

一、碩士班學生在本校碩士班修業時間至少二學期。

1. The study period of master's students in the master's program of NYCU should be two semesters at least.

二、博士班學生在本校博士班修業時間至少四學期。

2. The study period of doctoral students in the doctoral program of NYCU should be four semesters at least.

第五條 修課與論文指導規定

Article 5 Course Requirement and Thesis/Dissertation Advising Regulations

一、碩士生：

1. Master's students:

(一) 碩士班修業年限以一至四年為限，至少應修 19 學分。

必修課程：

量子力學(一)；書報討論 4 次；學術研究倫理教育：依本校「學生學術及研究倫理教育課程實施辦法」規定修課。

必選課程：

量子力學(二)、電動力學(一)、古典力學、統計力學(一)、固態物理(一)、粒子與宇宙、高等量子力學中必選二科。

電動力學(二)、原子與分子物理(一)、統計力學(二)、固態物理(二)、高等固態物理(一)、量子場論(一)(二)、宇宙學簡介、生物物理、半導體物理及元件(一)(二)、半導體製程技術、固態光學、物理光學中必選一科。

備註一：

修習書報討論 4 次並及格。早於 4 學期畢業者不在此限，但其在學期間每學期必須依規定修習書報討論並及格。

備註二：

除非本所當學年度之必修或必選課程未開，或經課程委員會同意，否則不得至外系所修課。

(1) The minimum and maximum study periods for master's programs must be one to four years, and the minimum graduation credits are 19.

Required courses:

Quantum Mechanics (I); Four seminars; Academic Research Ethics Education: In accordance with the "Students Research Ethics Education Program Implementation Rules" required by NYCU.

Required elective courses:

Choose two from Quantum Mechanics (II), Electrodynamics (I), Classical Mechanics, Statistical Mechanics (I), Solid State Physics (I), Particle Physics and Cosmology, Advanced Quantum Mechanics.

Choose one from Electrodynamics (II), Molecular Physics (I), Statistical Mechanics (II), Solid State Physics (II), Advanced Solid State Physics (I), Quantum Field Theory (I) (II), Introduction to Cosmology, Biophysics, Semiconductor Physics and Devices (I)(II), Semiconductor Process and Technology, Optical properties of solids, Physical Optics.

Remark 1:

Take four seminars, with all grades higher than the passing grade. Students whose study period is shorter than four semesters do not need to follow this regulation, but they should complete and pass the seminar for each semester during the master's program.

Remark 2:

Unless the required or required elective courses are not offered by the Institute in the current academic year or under the approval of the Curriculum Committee, students should not select courses outside of the Institute.

(二) 畢業學分

1. 依本規章修讀學位學生，在二校當地修讀學分數，累計需各達畢業應修總學分數之三分之一以上。
2. 抵免學分依「學生抵免辦法」提出申請，繳交申請單、成績單及課程相關資料，經所課程委員會議通過，送教務處複核。
3. 學生於修業年限內未修滿畢業學分或未完成畢業論文口試將予以退學。

(2) Minimum graduation credits

- A. For students who are acquiring the degree according to the Regulations, the number of their credits in the two universities should be accumulated to more than a third of graduation credits of each university.
- B. Students should submit an application for credit transfer in accordance with the Credit Transfer Regulations. The submitted application should include an application form, transcripts for all semesters, and other course-related documents. The applications should be approved by the Curriculum Committee of the Institute and submitted to the Office of Academic Affairs for examination.
- C. Students who fail to pass the oral defense or to complete all the required courses within study period are required to drop out of NYCU.

(三) 碩士生必須選擇本所專任教師及境外學校教師各一人為共同指導教授。

(3) A master's student should invite one full-time teacher of the Institute and one teacher of the overseas university to be co-advisors.

(四) 指導教授欲終止指導關係，應以書面文件向學生事務委員提出申請，審查結果由所長通知研究生。

(4) Advisors who wish to terminate the advising relationship should submit a written request to the Student Affairs Committee. The Institute Director will notify the graduate student of the review result.

(五) 更換指導教授，應填具申請書說明理由，申請理由須經由新指導教授同意、學生事務委員及所長審查通過，並於通知原指導教授後生效。在原指導教授提供原始構想或概念及受指導下所獲得之研究成果，須經原指導教授同意，始得作為學位論文。

(5) Students who wish to change their advisor should fill out an application form stating the reasons. The reasons stated must be approved by the new advisor, and reviewed and approved by the Student Affairs Committee and the Institute Director. The application shall take effect after the former advisor is notified. Students must have the consent of the former advisor to use the research findings obtained under the original idea or concept provided and advised by him/her as the student's degree dissertation.

本條文第四款、第五款追溯適用本所在學學生。

Paragraphs (4) and (5) of this Article apply retroactively to students enrolled in the Institute.

二、博士生：

2. Doctoral students:

(一) 博士班修業年限以二至七年為限，至少應修 18 學分。

必修課程：

量子力學（一）（二）；電動力學（一）；統計力學（一）；書報討論 4 學期；學術研究倫理教育：依本校「學生學術及研究倫理教育課程實施辦法」規定修課。

必選課程：

電動力學（二）及統計力學（二）中必選一科：3 學分。

在以下四項類別中，擇不同類別裡的兩個科目修習：

1. 固態物理（一）（二）或高等固態物理（一）
2. 量子場論（一）或粒子物理（一）
3. 原子分子物理（一）
4. 本所同意之物理子領域課程

備註一：

除非本所當學年度之必修或必選課程未開，或經課程委員會同意，否則不得至外系所修課。

(1) The minimum and maximum study periods for doctoral programs must be two to seven years, and the minimum graduation credits is 18.

Required courses:

Quantum Mechanics (I) (II); Electrodynamics (I); Statistical Mechanics (I); Seminar (four semesters); Academic Research Ethics Education: In accordance with the “Students Research Ethics Education Program Implementation Rules” required by NYCU.

Required elective courses:

Choose one course from Electrodynamics (II) and Statistical Mechanics (II): 3 credits.

Choose two from the four different categories as follows:

- A. Solid State Physics (I) (II) or Advanced Solid State Physics (I)
- B. Quantum Field Theory (I) or Particle Physics (I)
- C. Atomic and Molecular Physics (I)
- D. Courses in a subfield of Physics that are approved by the Institute.

Remark 1:

Unless the required or required elective courses are not offered by the Institute in the current academic year or under the approval of the Curriculum Committee, students should not select courses outside of the Institute.

(二) 畢業學分

1. 依本規章修讀學位學生，在二校當地修讀學分數，累計需各達畢業應修總學分數之三分之一以上。
2. 抵免學分依「學生抵免辦法」提出申請，繳交申請單、成績單及課程相關資料，經所課程委員會議通過，送教務處複核。
3. 學生於修業年限內未修滿畢業學分或未完成畢業論文口試將予以退學。
4. 博士生需先通過資格考試方能申請雙聯學位。本所認可境外學校所屬博士生於原校所通過之資格考試資格。

(2) Minimum graduation credits

- A. For students who are acquiring the degree according to the Regulations, the number of their credits in the two universities should be accumulated to more than a third of graduation credits of each university.
- B. Students should submit an application for credit transfer in accordance with the Credit Transfer Regulations. The submitted application should include an application form, transcripts for all semesters, and other course-related documents. The applications should

be approved by the Curriculum Committee of the Institute and submitted to the Office of Academic Affairs for examination.

C. Students who fail to complete all the required courses or to pass the oral defense within the study period are required to drop out of NYCU.

D. Doctoral students can apply for joint dual-degree only after passing the Qualifying Examination. The Institute recognizes overseas doctoral students' qualifications acquired by passing the Doctoral Qualifying Examination in their original universities.

(三) 博士生必須選擇本所專任教師及境外學校教師各一人為共同指導教授。

(3) A doctoral student should invite one full-time teacher of the Institute and one teacher of the overseas university to be co-advisors.

(四) 指導教授欲終止指導關係，應以書面文件向學生事務委員提出申請，審查結果由所長通知研究生。

(4) Advisors who wish to terminate the advising relationship should submit a written request to the Student Affairs Committee. The Institute Director will notify the graduate student of the review result.

(五) 更換指導教授，應填具申請書說明理由，申請理由須經由新指導教授同意、學生事務委員及所長審查通過，並於通知原指導教授後生效。在原指導教授提供原始構想或概念及受指導下所獲得之研究成果，須經原指導教授同意，始得作為學位論文。

(5) Students who wish to change their advisor should fill out an application form stating the reasons. The reasons stated must be approved by the new advisor, and reviewed and approved by the Student Affairs Committee and the Institute Director. The application shall take effect after the former advisor is notified. Students must have the consent of the former advisor to use the research findings obtained under the original idea or concept provided and advised by him/her as the student's degree dissertation.

本條文第四款、第五款追溯適用本所在學學生。

Paragraphs (4) and (5) of this Article apply retroactively to students enrolled in the Institute.

第六條 畢業口試

Article 6 Oral Defense for Graduation

一、碩士生：

1. Master's students:

(一) 本所碩士班學生之碩士學位考試，以口試行之。碩士班研究生申請學位考試，至遲應於口試日前兩周提出申請。論文考試舉行前，碩士班研究生應完成論文原創性比對報告並供考試委員參考；於論文考試結束後，由指導教授於學位考試成績資料表簽核確認。學位考試依本校研究生學位授予作業規章之規定，但所內有另行規定者，則依本所之規定。

(1) The degree examination for master's students of the Institute is conducted by an oral defense. Master's students should submit the application for degree examination at least two weeks before the oral defense date. Before the examination, master's students should complete the thesis originality comparison report and submit it to the Degree Examination Committee for reference. After the examination, the advisor should sign the Degree Examination Result Form for confirmation. The degree examination should follow the "Regulations for Master

and Doctoral Degrees Conferment” of NYCU, unless otherwise prescribed by regulations stipulated by the Institute.

- (二) 口試以公開舉行為原則，須於事前公佈口試時間、地點及論文題目。
- (2) All oral defenses must be conducted in an open manner. The time and place of the oral defense, as well as the title of thesis, must be announced in advance.
- (三) 學位考試委員應親自出席委員會，不得委託他人代表。至少應有委員三人出席，使得舉行。
- (3) All members of a Degree Examination Committee must attend the oral defense in person. Stand-ins are not permitted. Oral defense for master’s degree should be attended by at least three committee members.
- (四) 學位考試委員會由指導教授與口試委員組成，其中本所所內教師至少須 2 人，並指定 1 人為召集人，指導教授不得為召集人。
- (4) The Degree Examination Committee consists of the advisor and other members, among whom at least two members should be the teachers of the Institute. One member should be designated to be the convener, and the advisor should not be the convener.
- (五) 碩士論文考試成績以 B-(百分制七十分)為及格，A+(百分制一百分)為滿分，出席委員如有逾二分之一以上委員評定不及格者即以不及格論；論文考試成績以出席口試委員記名評定分數平均決定之。不及格而其延長修業年限尚未屆滿者，得於次學期或修業年限內申請重考，重考以一次為限，重考不及格者，即令退學。
- (5) The passing grade for the Master’s Oral Defense is B- (70 points on a 100-point scale), with A+ (100 points on a 100-point scale) being the top grade. The oral defense is deemed “failed” when the scores graded by more than half of the present members are below the passing grade. The results should be determined by the average signed scores graded by the present members. Students who fail the oral defense may apply for a retake in the following semester or within their extended study period. Each student is limited to one retake. Students who fail the retake of the oral defense are required to drop out of NYCU.
- (六) 論文有抄襲或舞弊情事，經學位考試委員會確定者，以不及格論。
- (6) A student definitely fails when plagiarism or cheating is discovered in the thesis and confirmed by the Degree Examination Committee.
- (七) 碩士學位考試委員會置委員三至五人，由系(所)就校內外學者專家中對研究生所提論文有專門研究，並具備下列資格之一者，向校長推薦，由校長遴聘組成之。
1. 現任或曾任教授、副教授、助理教授。
 2. 中央研究院院士、現任或曾任中央研究院研究員、副研究員、助研究員。
 3. 獲有博士學位，且在學術上著有成就。
 4. 研究領域屬於稀少性、特殊性學科或屬專業實務，且在學術上或專業上著有成就。
- 本項第三款、第四款之提聘資格由所教評會審核之。
- 碩士班研究生之配偶、前配偶或三親等內之血親、姻親，不得擔任其碩士學位考試委員。
- (7) The University President of NYCU will select three to five members to form a Master’s Degree Examination Committee from the scholars and experts recommended by the department (institute). The scholars and experts, whether from NYCU or an external

organization, must specialize in the area of research or study of the applicant and fulfill at least one of the following requirements:

- A. A current or former professor, associate professor, or assistant professor.
- B. An academician of Academia Sinica, a current or former researcher, associate researcher, or assistant researcher of Academia Sinica.
- C. A doctoral degree holder with outstanding academic accomplishments.
- D. Specializes in the field of study that is considered a rare or special discipline or with professional practice, and is with outstanding academic or professional accomplishments.

The criteria for determining the qualifications of 3 and 4 should be determined by the Teacher Evaluation Committee.

The master's students' spouses, ex-spouses, or those who are related to the students by blood or marriage within the third degree of consanguinity are not allowed to serve as a member of the Master's Degree Examination Committee.

二、博士生：

2. Doctoral students:

(一) 博士學位候選人之學位考試，以口試行之。博士班研究生申請學位考試，至遲應於口試日前兩周提出申請。論文考試舉行前，博士班研究生應完成論文原創性比對報告並供考試委員參考；於論文考試結束後，由指導教授於學位考試成績資料表簽核確認。學位考試依本校研究生學位授予作業規章之規定，但所內有另行規定者，則依本所之規定。

(1) The degree examination for doctoral candidates of the Institute is conducted by an oral defense. Doctoral students should submit the application for degree examination at least two weeks before the oral defense date. Before the examination, doctoral students should complete the dissertation originality comparison report and submit it to the Examination Committee for reference. After the examination, the advisor should sign the Degree Examination Result Form for confirmation. The degree examination should follow the "Regulations for Master and Doctoral Degrees Conferment" of NYCU, unless otherwise prescribed by regulations stipulated by the Institute.

(二) 口試以公開舉行為原則，須於事前公佈口試時間、地點及論文題目。

(2) All oral defenses must be conducted in an open manner. The time and place of the oral defense, as well as the title of dissertation, must be announced in advance.

(三) 學位考試委員會應親自出席委員會，不得委託他人代表，博士學位考試委員會至少應有委員五人出席，始得舉行。

(3) All members of a Degree Examination Committee must attend the oral defense in person. Stand-ins are not permitted. Oral defense for doctoral degree should be attended by at least five committee members.

(四) 學位考試委員會由指導教授與口試委員組成，其中校外及校內委員人數各須三分之一以上，並指定 1 人為召集人，指導教授不得為召集人。

(4) The Degree Examination Committee consists of the advisor and other Oral Defense Committee members, among whom both the members inside and outside NYCU should account for more than one-third of the committee. One member should be designated to be the convener, and the advisor should not be the convener.

(五) 博士論文考試成績以 B-(百分制七十分)為及格，A+(百分制一百分)為滿分。出席委員如有逾三分之一以上委員評定不及格者即以不及格論；論文考試成績以出席口試

委員記名評定分數平均決定之。不及格而其延長修業年限尚未屆滿者，得於次學期或修業年限內申請重考，重考以一次為限，重考不及格者，即令退學。

(5) The passing grade for the Doctoral Oral Defense is B- (70 points on a 100-point scale), with A+ (100 points on a 100-point scale) being the top grade. The oral defense is deemed “failed” when the scores graded by more than a third of the present members are below the passing grade. The results should be determined by the average signed scores graded by the present members. Students who fail the oral defense may apply for a retake in the following semester or within their extended study period. Each student is limited to one retake. Students who fail the retake of the oral defense are required to drop out of NYCU.

(六) 論文有抄襲或舞弊情事，經學位考試委員會確定者，以不及格論。

(6) A student definitely fails when plagiarism or cheating is discovered in the dissertation and confirmed by the Degree Examination Committee.

(七) 博士學位考試委員會置委員五至九人，由系(所)就校內外學者專家中對研究生所提論文有專門研究，並具備下列資格之一者，向校長推薦，由校長遴聘組成之。

1. 現任或曾任教授、副教授。
2. 中央研究院院士、現任或曾任中央研究院研究員、副研究員。
3. 獲有博士學位，且在學術上著有成就。
4. 研究領域屬於稀少性或特殊性學科，且在學術或專業上著有成就。

本項第三款、第四款之提聘資格由所教評會審核之。

博士班研究生之配偶、前配偶或三等親內之血親、姻親，不得擔任其博士班學位考試委員。

(7) The University President of NYCU will select five to nine members to form a Doctoral Degree Examination Committee from the scholars and experts recommended by the department (institute). The scholars and experts, whether from NYCU or an external organization, must specialize in the area of research or study of the applicant and fulfill at least one of the following requirements:

- A. A current or former professor or associate professor.
- B. An academician of Academia Sinica, a current or former researcher or associate researcher of Academia Sinica.
- C. A doctoral degree holder with outstanding academic accomplishments.
- D. Specializes in the field of study that is considered a rare or special discipline, and is with outstanding academic or professional accomplishments.

The criteria for determining the qualifications of 3 and 4 should be determined by the Teacher Evaluation Committee.

The doctoral students' spouses, ex-spouses, or those who are related to the students by blood or marriage within the third degree of consanguinity are not allowed to serve as a member of the Doctoral Degree Examination Committee.

三、論文通過口試者由口試委員明示論文修改方向及要點，做為學生修改論文之依據，學生修改論文後應提交論文審查，論文審查至少須經三分之二考試委員同意始為通過。論文審查不另評分，論文審查通過者，由出席論文考試之委員簽署「論文口試委員會審定書」。完成論文審定者，論文考試成績即為學位考試成績。

3. Students who have passed the oral defense should revise their thesis/dissertation according to the revision direction and main points indicated by the oral defense members. Students should submit the revised thesis/dissertation for review and the revision must be approved by at least two-thirds of the oral defense members to pass the degree examination.

The revised thesis/dissertation will not be further graded during the review process. After students passing the thesis/dissertation review, the oral defense members will sign the Authorization of the Oral Thesis Examination Committee. For those who have completed the process of thesis/dissertation review, the thesis examination result will be the degree examination result.

四、學位考試通過後，應於考試當學期繳交「學位考試成績資料表」至註冊組，第一學期需於1月31日前繳交；第二學期需於7月31日前繳交。

學位論文紙本之繳交期限為舉行學位考試日的次學期開學前最後一個工作日，逾期未繳交論文紙本且未達修業年限者，次學期仍應註冊。

修業年限屆滿者，未於年限屆滿當學期繳交學位考試成績資料表或未於次學期開學前最後一個工作日前繳交紙本論文，應予退學。

本條文追溯適用本所在學學生。

4. After passing the degree examination, students are required to submit the Degree Examination Results Form to the Registration Section in the semester in which the examination is taken, by January 31 for the first semester and by July 31 for the second semester.

The hardcopy of the degree dissertation should be submitted by the last working day of the semester in which the degree examination is taken, before the start of the following semester. Nevertheless, students who have not submitted the hardcopy of the dissertation by the deadline and are within the study period should register their study status in the following semester.

Students who have not submitted the Degree Examination Results Form by the semester in which the limit of study period has reached or have not submitted the hardcopy of dissertation by the last working day before the start of the following semester are required to drop out of NYCU.

This Article applies retroactively to students enrolled in the Institute.

第七條 學位論文須符合本校學位論文格式規範。學位考試通過後應將論文摘要及全文電子檔上網建檔(依照本校圖書館學位論文摘要及全文電子檔建檔規範辦理)。

Article 7 Degree thesis/dissertation must be written by conforming to the degree thesis/dissertation format of NYCU. After passing the Degree Examination, students are required to upload the electronic file of the thesis/dissertation abstract and full-text article to the Internet (in accordance with the Regulations for Archiving Electronic Files of Degree Thesis/Dissertation Abstracts and Full-text Articles in National Yang Ming Chiao Tung University Libraries).

一、碩士生繳交論文二冊(平裝一冊本校圖書館陳列，平裝一冊由國家圖書館收藏)。

1. Master's students are required to submit two hardcopies of their thesis (a copy in softcover each for display in NYCU Library, and for collection at the National Central Library).

二、博士生繳交論文三冊(平裝一冊本所收藏，精裝一冊本校圖書館陳列，平裝一冊由國家圖書館收藏)。

2. Doctoral students are required to submit three hardcopies of their dissertation (a copy in softcover each for collection at the Institute and at the National Central Library, and a copy in hardback for display in NYCU Library).

第八條 本規章依實際需要，與辦理雙聯學制之境外大學，另訂雙聯學制之應修科目及學分，**經所務會議**、院課程委員會、校課程委員會通過，送教務會議核備後實施。

Article 8 The Regulation takes actual need into consideration, cooperating with the overseas universities in charge of joint dual-degree to set up required courses and credits of joint dual-degree. The

Regulations will be implemented after being approved by the Institute Affairs Meeting, both Curriculum Committees of the College and of NYCU, and submitted to Academic Affairs Meeting for future reference.

第九條 本辦法未盡事宜，悉依本校學則及相關規定辦理。

Article 9 All matters not covered in the Regulations should be handled in accordance with the academic regulations of NYCU and the relevant regulations.