



### IPCS Logo Designing Concepts

- The spherical and undulating lines indicate perpetual circulation and sustainability.
- The lower part blue pattern, when viewed as ocean waves, indicates sea-level rise under global warming may affect humankind (represented by the white icon); it also looks like a pair of hands (of Gaia) holding up or provide for life and human culture.
- The green leaf at the top represents the ecosystem, coexist harmonically with human in the natural environment; it also symbolizes a green-wave of sustainable resources.



**Abstract Logo**

#### **Leaf**

ecosystem; life sciences

#### **Human icon**

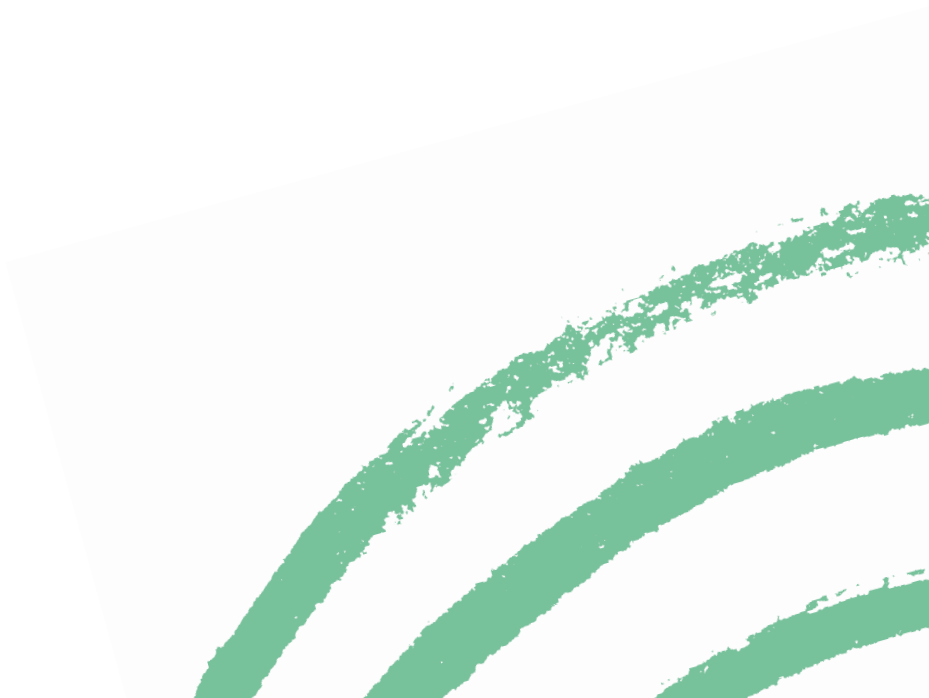
humanity; social sciences

#### **Wave**

ocean wave, wind wave,  
or landscape; earth sciences

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# 1. INTRODUCTION

The “International Master’s/ Doctoral Degree Program in Climate Change and Sustainable Development (IPCS)” in the College of Science, National Taiwan University, is an inter-disciplinary program which integrates both scientific and humanistic faculty members and courses within the university. IPCS is set up to raise talents with multi-disciplinary professions as well as global perspective. The degree program was established in the 2016 academic year, and had successfully admitted 3 doctoral and 14 master’s degree students during the first year.

## 1.1 Educational Objectives

### **NTU Educational Objective:**

To cultivate intellects and leaders with strong character, solid knowledge, heart for humanity and global vision and who can enhance the overall well-being of the nation and humankind.

### **College of Science Educational Objective:**

To cultivate leaders with scientific mentality and care for humanity, who can enhance the overall well-being of humankind.

### **IPCS Educational Objective:**

To cultivate interdisciplinary experts in climate change and sustainable development with global perspective.





### 1.1.1 Program Mission

- ① Through comprehensive and in-depth teaching strategies, IPCS leads students into understanding the core issues and enhance their experience and perspectives in climate change and sustainable development.
- ② To develop students interest and passion in exploring the human-environment interaction, their active learning, data collection, and dialectical, analytical, apparatus usage, and practical abilities, as well as to prevent the biased views caused by "specialization of knowledge", and to restore the "holistic" nature of knowledge.
- ③ To foster students into interdisciplinary experts in climate change and sustainable development by integrating global and local experience, employing scientific and humanistic wisdom, and the individual or collective interdisciplinary problem-solving skills towards complex and multifaceted issues.

### **1.1.2 Core Capabilities IPCS Provides Students With**

- ❶ To lay the interdisciplinary academic foundation of climate change and sustainable development for students.
- ❷ To diversify the perspective, experience, and expertise of students when handling issues regarding climate change and sustainable development.
- ❸ To advance students' communication and expression skills, as well as to restore their holistic thinking capability.
- ❹ To develop students' interest and passion to explore knowledge, and their abilities in active learning, independent research, team work, and problem-solving skills.
- ❺ To develop students' capability of composing international academic publication.

## **1.2 History of IPCS**

- ❶ In view of the rising importance of domestic and international researches on global change, the National Taiwan University had begun the preparation of establishing a world class research center since 1989, which would allow scholars to converge, to focus on, and to establish research goals together on the study of global change. Moreover, it is to advance the standard of scientific works in Taiwan. The proposal of founding the Global Change Research Center (GCRC) was approved in the University Affairs Meeting on the 29th of June, 1991; the GCRC was officially brought into operation in 1992.
- ❷ The GCRC founded the first inter-collegial undergraduate program at NTU, the "Earth System Science Program" in 1997, which combined courses from the departments of Atmospheric Sciences, Geography, Geosciences, the Institute of Oceanography, the College of Life Science and the College of Bioresources and Agriculture. Such program enabled graduates to better meet the concerns that workplaces as well as the entire society have on planetary environment and ecological conservation.

- ③ In 1998, the GCRC introduced its second program, the “Sustainable Resources Program”. In 2008, the GCRC established its third program: the “Energy Technology Program”. Through these programs, the GCRC intended to increase the interdisciplinary interests and capabilities of college students.
- ④ In 2011, the GCRC began the preparation of establishing the “International Degree Program in Climate Change and Sustainable Development”, developing interdisciplinary courses on climate change and sustainable development by undertaking the “Climate change and Sustainable Development Course Group (CCSD)”, funded by the Ministry of Education.
- ⑤ Approved by the Ministry of Education, the “International Degree Program in Climate Change and Sustainable Development” was officially founded in 2016, and it began the master’s and doctoral degree students’ admission in the 2016/17 academic year.

### **1.3 Our Building and Location**

The IPCS office is located on the northwest corner of the National Taiwan University (NTU) main campus, inside the Global Change Research Centre (GCRC), which is facing the Drunken Moon Lake, and close to intersection of Xinhai Road and Xinsheng South Road (the 8th Avenue). This facility also houses the Chinese (R.O.C.) Geoscience Union, the Marine Exploration Division of the NTU Instrumentation Centre, The UV Instrument Calibration Laboratory of the Environmental Protection Administration, and several laboratories of the Institute of Oceanography and the Department of Geosciences.

IPCS program office is in room G201 of the front building. Other than the program office, there is an air conditioned multi-purpose conference room, equipped with a personal computer and a projection system, which is designed to hold speeches, lectures, seminars, and other activities. GCRC will also designate a number of research offices to IPCS faculty and students.

## NTU Map

Center for Condensed Matter Sciences

Drunken Moon Lake

Main Library

1

### Department of Geography

Prof. Sue-Ching Jou  
Prof. Jiun-Chuang Lin  
Prof. Shiuh-Shen Chien  
Prof. Jehn-Yih Juang

2

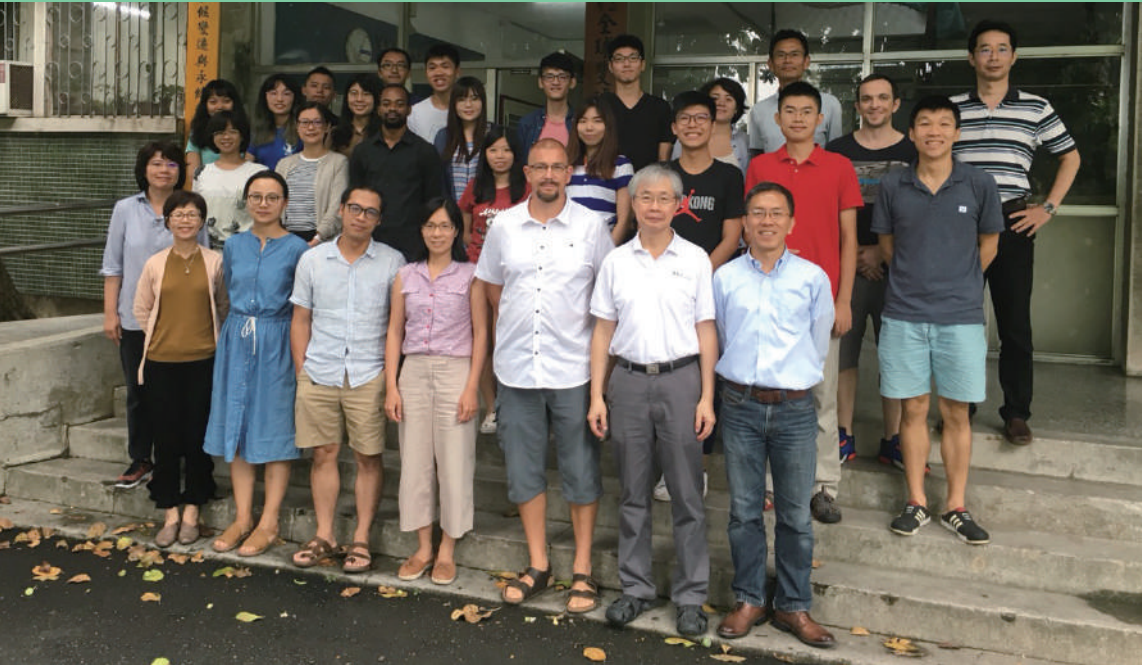
### Department of Atmospheric Sciences

Prof. Jen-Ping Chen  
Prof. Chun-Chieh Wu  
Prof. Po-Hsiung Lin  
Prof. Min-Hui Lo  
Prof. Wei-Ting Chen

- 3 Department of Geosciences**
  - | Prof. Ludvig Löwemark
  - | Prof. Hao-Jia Ren
  - | Prof. Yih-Min Wu
- 4 Department of Bioenvironmental Systems Engineering**
  - | Prof. Ching-Pin Tung
- 5 School of Forestry and Resource Conservation**
  - | Prof. Chyi-Rong Chiou
- 6 IPCS Office**
  - | Prof. Hikaru Komatsu
  - | Prof. Syuan-Jyun Sun
  - | Prof. Yi-Huan Hsieh
- 7 Institute of Oceanography**
  - | Prof. Chin-Lin Wei
  - | Prof. Hui-Yu Wang
- 8 Graduate Institute of National Development**
  - | Prof. Kuei-Tien Chou
- 9 College of Law**
  - | Prof. Wen-Chen Chang
- 10 Department of Political Science**
  - | Prof. Tze-Luen Lin
- 11 Graduate Institute of Building & Planning**
  - | Prof. Sheng-Lin Chang
- 12 Hydrotech Research Institute**
  - | Dr. Jihn-Sung Lai
- 13 Bio-Industrial Mechatronics Engineering**
  - | Prof. Chen-Kang Huang
- 14 Department and Graduate Institute of Business Administration**
  - | Prof. Bou-Wen Lin
- 15 Department of Sociology**
  - | Prof. Chung-En Liu



## 2. FACULTY and STAFF



### 2.1 Faculty

**Program Director**

Professor Shih Shen Chien

## Earth Sciences

Title	Name	Affiliation
Professor	Jen-Ping Chen	Atmospheric Sciences & IPCS, NTU
Professor	Yih-Min Wu	Geosciences, NTU
Professor	Jiun-Chuan Lin	Geography, NTU
Professor	Ching-Pin Tung	Bioenvironmental Systems Engineering, NTU
Professor	Chun-Chieh Wu	Atmospheric Sciences, NTU
Professor	Ludvig Löwemark	Geosciences, NTU
Associate Professor	Po-Hsiung Lin	Atmospheric Sciences & IPCS, NTU
Associate Professor	Jehn-Yih Juang	Geography & IPCS, NTU
Associate Professor	Min-Hui Lo	Atmospheric Sciences & IPCS, NTU
Associate Professor	Hao-Jia Ren	Geosciences & IPCS, NTU
Associate Professor	Wei-Ting Chen	Atmospheric Sciences, NTU
Associate Professor	Jia-Kun Chen	Public Health, NTU
Project Assistant Professor	Yi-Huan Hsieh	IPCS, NTU
Research Fellow	Jin-Sung Lai	Hydrotech Research Institute & IPCS, NTU

## Social Sciences

Title	Name	Affiliation
Professor	Sue-Ching Jou	Geography & IPCS, NTU
Professor	Kuei-Tien Chou	Graduate Institute of National Development, NTU
Professor	Sheng-Lin Chang	Graduate Institute of Building and Planning, NTU
Professor	Wen-Chen Chang	College of Law, NTU
Professor	Shiuh-Shen Chien	Geography & IPCS, NTU
Professor	Chen-Kang Huang	Bio-Industrial Mechatronics Engineering, NTU
Professor	Bou-Wen Lin	Business Administration, NTU
Professor	Thung-Hong Lin	Institute of Sociology, Academia Sinica
Associate Professor	Tze-Luen Lin	Political Science, NTU
Associate Professor	Hikaru Komatsu	IPCS, NTU
Associate Professor	Chung-En Liu	Sociology & IPCS, NTU
Associate Professor	Hsin-Chi Li	National Science and Technology Center for Disaster Reduction
Associate Professor	Chia-Wei Chao	Taiwan Environment and Planning Association
Associate Professor	Ming-Kuang Chung	Institute of Information Science, Academia Sinica
Adjunct Instructor Rank Specialist	Jin-Yung Wu	National Taiwan University Building & Planning Foundation



**Life Sciences**

Title	Name	Affiliation
Associate Professor	Chyi-Rong Chiou	School of Forestry and Resource Conservation, NTU
Associate Professor	Sheng-Feng Shen	Biodiversity Research Center, Academia Sinica & IPCS, NTU
Associate Professor	Hui-Yu Wang	Institute of Oceanography & IPCS, NTU
Associate Professor	Chi-Lin Wei	Institute of Oceanography, NTU
Associate Professor	Shipher Wu	Biodiversity Research Center, Academia Sinica
Assistant Professor	Syuan-Jyun Sun	IPCS, NTU

**2.2 Administrative Staff**

Name	Position Details
I-Ching Tu	1. Academic affairs. 2. General affairs. 3. Student affairs.

## 3. COURSES and CAREER

### 3.1 Course Structure

#### Required Core Courses

##### 1. Problem-based

- 1 Climate Change: Issues and Solutions
- 2 Analysis and Application of Climate Data

##### 2. Project-based

Workshop on Climate Change and Human Settlements

##### 3. Frontier Research Topics

- 1 Climate Service and Environmental Sustainability
- 2 Micro Environmental Monitoring and Disaster Management

##### 4. Seminar Series

- \* Seminar (I) Interdisciplinary workshop
- \* Seminar (II) Academic seminars participation
- \* Seminar (III) Progress report
- \* Seminar (IV-VI) Thesis/Dissertation draft presentation

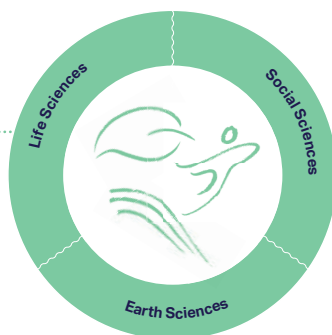
#### Elective Courses

IPCS offers more than 23 elective courses in earth sciences, life sciences and social sciences that are relevant to climate change and sustainable development. The students are required to select cross-disciplinary topics to enrich their knowledge base.

Required Courses

Elective Courses

Problem-based  
Thesis  
Project-based  
Frontier Topics



## 3.2 Career Paths

Due to the increasing frequency in extreme climatological anomalies (e.g., torrential rains, droughts, heat waves, etc.), climate change has become a critical issue that nations need to confront in the 21st century.

Besides climate change related interdisciplinary research institutions, the integrated talents trained by IPCS are also desperately needed by central or local government's forecasting, disaster reduction, and emergency response agencies. For example:

- ❶ Environmental forecasts: The Central Weather Bureau, the Environmental Protection Administration, National Council for Sustainable Development, or the department of environmental protection of municipal governments.
- ❷ Disaster Reduction: National Science and Technology Center for Disaster Reduction, Homeland Management Agency, and Water Resource Agency.
- ❸ Emergency Services: the military, fire agencies, healthcare, and transportation authorities.
- ❹ There are also private sector seeking talents who possess both theoretical and practical expertise in environment, security, and hygienic, to meet the human resources demands.

Policies mitigating the effect of climate change also rely heavily on corporate efforts. Future IPCS graduates will have the ability to benefit companies through successfully executing the reduction of carbon emission, as well as the R&D of relevant products or collaborative applications. As the founding of IPCS is unprecedented in universities across Asia, graduates may also consider assisting countries or regions in the continent to devise corporate or governmental climate change accommodative strategies, or to engage in academic exchange of corresponding fields.



## 4. IPCS Academic Affairs Regulations

- *The regulations stated in this handbook take effect from the first semester of the 2021/22 academic year. Future revisions precede the effect of articles in this handbook.*



### 4.1 Course Registration

- ❶ Students should register through NTU Course Selection System. For more information, please visit: <https://if192.aca.ntu.edu.tw/default.asp?lang=en>

## 4.2 Credit Transfer and Exemption

- ❶ IPCS master's degree student who has taken relevant graduate courses within the past 5 years, may file course exemption applications for 6 credits in total utmost. Students must have attained a grade of B- or better (in NTU grading system), or grade points of 70 (out of 100) or above in a course, in order to enter the course exemption and credit transfer review procedure.
- ❷ IPCS doctoral degree student who has taken relevant graduate courses within the past 5 years, may file course exemption applications for 9 credits in total utmost. Student must have attained a grade of A- or better (in NTU grading system), or grade points of 80 (out of 100) or above in a course, in order to enter the course exemption and credit transfer review procedure. Seminars or independent researches cannot be exempted.
- ❸ Applicant of course exemption or credit transfer must prepare detail course information and complete transcript to the IPCS curriculum committee, along with faculty members offering courses with the same title or related to. If necessary, applicants may be required to attend interviews, oral examinations, or written examinations to acquire the exemption. Such exemptions will only become effective after the academic committee (assembled by program director) has approved the applications.
- ❹ Student has to file the on-line ([http://curri.aca.ntu.edu.tw/aca\\_doc/waive.asp](http://curri.aca.ntu.edu.tw/aca_doc/waive.asp)) application of course exemption or credit transfer in the first semester of every academic year on time, in accordance with NTU calendar. The required documents are:
  - ❶ Credit Transfer Application Form  
(log onto the system to register and print out).
  - ❷ Transcript (original copy).
  - ❸ The "Course Outline" of the course being exempted.
  - ❹ Certification of "Graduate School Course Completion" (Please download this form from the website of the Graduate Academic Affairs Division; This form is not required if applicant was originally an NTU student).

- ❖ Fail to log onto NTU Academic Affairs System and register online, data does not match with the application form, cannot provide complete information and documentation, or overdue, are all considered as application denied.
- ❖ Please refer to the “National Taiwan University Rule of Student Credit Transfer” for any subject matter not being mentioned here.

### 4.3 Master’s Degree Courses/Credits Requirement

- ❶ The Period of Study of IPCS Master’s Degree is 1 to 4 years.
- ❷ IPCS students need to complete at least 30 credits during the period of study (including 6 credits of M.S. thesis).
- ❸ Students should only register in the course “M.S. Thesis” (6 credits) in the same semester of taking Master’s Degree Examination. For more information regarding thesis composition, please visit: NTU Academic Writing Education Center. Students may also refer to courses such as “Scientific English and Basic Writing” or “Advanced Research Writing” offered by interrelated departments or graduate institutes.
- ❹ Master’s degree students enrolled in and after the 2021/22 academic year need to comply with the following course registration requirements:

Important Reminder: students who enrolled during and after the 2018 Fall semester should take 6 hours Academic Ethics Course in the first academic year. (<https://ethics.moe.edu.tw/>)

**Table I. Required Courses: 20 Credits**

Course Title	Credits	Remark
Climate Change: Issues and Solutions	3	• Start from the first semester.
Workshop on Climate Change and Human Settlements	3	• Start from the second semester. • Students who have taken this workshop during their bachelor’s degree studies cannot be exempted.
Analysis and Application of Climate Data	2	

Course Title	Credits	Remark
*Seminars (I)-(IV)	4	<ul style="list-style-type: none"> <li>• Seminar (I) (1 credit): Interdisciplinary workshop</li> <li>• Seminar (II) (1 credit): Academic speech participation</li> <li>• Seminar (III) (1 credit): Progress report (literature review, proposal writing and etc.)</li> <li>• Seminar (IV) (1 credit): Thesis draft presentation</li> </ul>
Frontier Research Topics (I)-(IV)	2	<ul style="list-style-type: none"> <li>• Frontier Research Topic (I) &amp; (II) (1 credit): Climate Service and Environmental Sustainability</li> <li>• Frontier Research Topic (III) &amp; (IV) (1 credit): Micro Environmental Monitoring and Disaster Management</li> </ul>
M.S. Thesis	6	see ❶, page 18

\* Seminar (I) should be taken during the first (Fall enrollment) or second (Spring enrollment) semester of entrance year. Under extraordinary circumstances, and upon approval by the IPCS academic committee, may the student take Seminar (III) before Seminar (I) has been taken. Seminar (II) requires students to participate certain hours of on or off campus academic seminars. A list of seminar (II) related presentations is released before the beginning of each academic year and could be added during the semester. Seminar (III) should be taken after a pre-proposal is finished and approved by the student's thesis adviser. Seminar (IV) should be taken in the semester that the student plans to graduate. A long abstract summarizing their research results should be prepared as a final report of the seminar IV class.

For students who take the seminar (III) in advance:

Review of application qualifications: Excellent students are approved by the advisor and apply for advanced seminar courses with credits before January 31 or July 31 each year. Applicants must submit complete written materials [thesis proposal, and the advisor's letter of recommendation (clearly evaluate the performance and potential of the student's coursework, research, and reasons)], and need the approval of the academic committee before the class with credits.

## II. Elective Courses: 4 credits

- In addition to core courses, students need to register in at least 2 required elective courses instructed by IPCS faculty and on subjects related to IPCS.

## III. Supplementary Courses: 6 credits

- All NTU courses at the U or M levels of the “Curriculum Identity Number” are considered elective courses (including courses instructed by IPCS faculty).
- 5 The IPCS grade of pass is B- (in NTU grading system) for all courses.
  - 6 Students need to register in at least 1 IPCS course each semester. For those who fail to meet this standard, the program office retains the right to withdraw matriculation in the following semester.
  - 7 Master’s degree students seeking to register in IPCS doctoral level courses need to acquire course instructor’s endorsement beforehand.
  - 8 In principle, IPCS master’s degree students should register in courses offered by the program; the validity of credits from courses offered by non-IPCS departments or graduate institutes would require Curriculum Committee approval.
  - 9 IPCS master’s students need to satisfy one of the following English Graduation Requirements in order to graduate:

Name of Examination	Minimum Graduation Requirement
GEPT	High-intermediate
IELTS	5.5 (overall score)
TOEFL iBT	72
TOEFL ITP	543
TOEIC	785
FLPT	195
FCE	Grade B (score 160)



Or:

- ① Acquired a bachelor's degree (or higher) from an institution located in English speaking countries, which is included in the Reference List of Foreign Universities of the Ministry of Education;
- ② Had taken and passed the "NTU Graduate Student On-line English Program (III) or above".

## 4.4 Master's Degree Examination

- ① Students who have satisfied the IPCS course regulations within the period of study may request for the "Master's Degree Oral Defense" once acquired consent by their advisors. The application deadlines are April 23 and November 24 every year. Students who failed their first degree examination may retake the second examination in the next semester or in the following academic year. Only ONE retake is allowed. Students failed the degree examination for the second time may be expelled from NTU.
- ② The Master's Degree Examination Committee needs to comprise 3 to 4 members (advisor included). The List of Master's Degree Examination Committee Members is proposed by the advisor, and has to be approved by the academic committee and the program director.
- ③ Students who have filed degree examination application, but could not have completed it within the semester of application, should request withdrawal of their applications before the last day of the semester. Students who do not comply will be considered fail in the examination.
- ④ Graduate students may complete the degree examination in the following ways:
  - ① Academic Track: Take 6 credits of thesis research, complete the master's thesis oral examination and submit the master's thesis.
  - ② Practical Track: Take 6 credits of professional internships, complete the master's thesis oral examination, and submit the master's thesis.

⑤ Rules for the practical track:

- ① Graduate students who wish to participate in professional internships must complete a designated course before submitting the application form for the internship program, which will be approved by the Internship Committee. Only those who pass the application may take Internship I and Internship II, and participate in professional internship trainings. Those who do not pass the application may apply again at the beginning of the next semester.
  - ② Graduate students in the practical track need to complete 8 credits (inclusive) of professional courses before graduation. The list of professional courses and designated courses for each academic year will be announced at the beginning of the school year.
  - ③ Graduate students who have completed or are currently taking Internship II can apply for the master's thesis oral examination with the consent of their advisor.
- ⑥ Please refer to the NTU academic codes for any subject matter not being mentioned here.

## 4.5 Doctoral Degree Admission

### ① International student application

Please refer to the Office of International Affairs website:

<https://oia.ntu.edu.tw/>

### ② Domestic student application

Please refer to the Office of Academic Affairs website:

<http://www.aca.ntu.edu.tw/>

### ③ "Direct Pursuit of Doctoral Degree" project for the IPCS master's degree students

#### ① Application Prerequisites:

For graduating senior college students or IPCS Master students with one-year study of the NTU System, with a GPA ranked amongst the top 1/3 in the class, who demonstrated research potential.

#### ② Application material:

- i. The form "Application for Direct Ph.D. Program"
- ii. Undergraduate applicant: academic transcripts for all semesters attended; Graduate applicant: academic transcript(s) for at least one semester
- iii. Two recommendation letters from academic faculty (at the level of assistant professor or above)
- iv. A research plan written in English (Shall clearly indicate at least one IPCS faculty to work on the research topic and the connection between the research topic and the faculty)
- v. Other supportive documents (optional, e.g., graduating thesis, published journal article, draft of the graduating thesis).

Original student status will be terminated upon acceptance consequently.

#### ③ Application time and Procedures: according to the university's notice of 2nd phase (April).

## 4.6 Doctoral Degree Courses/Credits Requirement

- ❶ The Period of Study of IPCS doctoral students is 2 to 7 years. For the “Direct Pursuit of Doctoral Degree” (DP) students who transferred into IPCS Doctoral Degree without the completion of their master’s degrees, the period of study is in accordance with this article.
- ❷ Ph.D. students should complete 30 credits of coursework.
  - ❶ The required courses are “Climate Change: Issues and Solutions”, “Workshop on Climate Change and Human Settlements”, Seminars (I)-(VI), and Dissertation.
  - ❷ With the assistance of their advisors, students are expected to design appropriate doctoral level independent researches, and instructed by faculty members other than their main advisor.
- ❸ IPCS doctoral students need to make oral reports of research or study plan in seminars every academic year. The reports will be evaluated by all faculty members and to provide students with written comments as reference of improvement. Under extraordinary circumstances (e.g., combining seminar with dissertation oral defense or preliminary defense), students may file applications to the IPCS academic committee for exemption, and the report will be exempted upon approval. IPCS doctoral students may only be exempted from their reports once during the entire period of study.
- ❹ Students should only register in the course “Dissertation (Ph.D.)” (12 credits) on the semester of taking Doctoral Degree Examination. For more information regarding dissertation composition, please visit: NTU Academic Writing Education Center. (<https://www.awec.ntu.edu.tw/>)
- ❺ Doctoral advisor
  - ❶ Graduate students may choose the thesis advisor from among members of the program committee (referred to as program members) and program teachers according to their research interests and research directions. The thesis advisor is also the advisor of the graduate student. After both parties agree, it will be formally approved by the director of the program.
  - ❷ If the graduate students of this program want to choose other teachers who are not the members of the IPCS and the program

teacher as the main professor of the thesis, they must apply separately, asking a teacher of IPCS to co-instruct and go through the program approved after the IPCS director agrees.

- ③ After confirming the instructor, the student needs to submit the "Instructing Professor Consent" signed by the teacher before the end of the first semester. If it is not submitted, your advisor will be appointed after discussion with the IPCS committee.

## 4.7 Doctoral Degree Examination

❶ The Doctoral Degree Examination is divided into the following four parts:

- ① Annual Assessment
- ② Qualification Examination
- ③ Dissertation Oral Defense

❷ Annual Assessment and Qualification Examination:

- ① A Doctoral Supervisory Committee (DSC) needs to be assembled before the beginning of the 2nd semester of doctoral students' admission, which is responsible for the students' course registration advisory, annual assessment and qualification examination.
- ② The DSC is consisted of 5 teaching staff convened by the advisor, 3 of which need to be IPCS faculty members (including the advisor), and at least 1 of the faculty members has to be an interdisciplinary faculty. A list of committee members has to be approved by the IPCS academic committee before taking effect.
- ③ Content of the annual assessment includes:

- i. Seminar report.
- ii. Progress on research and study.

The assessment should be completed 1 month before the end of the Final Exam Week in the second semester of every academic year.

- ④ The result of the annual assessment is either "Pass" or "Fail".  
Students who have not participate in the annual assessments are considered fail in that particular academic year. A student who has received 2 fails during the period of study will be expelled from NTU.
- ⑤ The DSC should advise on the assessed students' research and study plans.
- ⑥ IPCS doctoral students need to pass the qualification examination within 3 academic years after admission. The suggested types of qualification examination include the following:
  - i. Oral or Written exam:  
  
The DSC composes the examination questions, and the DSC has to decide whether the students pass or fail the qualification examination.
  - ii. Compose a review article:  
  
The article should provide a comprehensive review of studies relevant to the intended topic of thesis research and assessment of gaps in current understanding. The article should be evaluated by at least three readers from the DSC. The DSC can also invite readers from outside. The DSC will decide whether the students pass or fail the qualification examination based on the comments from the readers.
  - iii. Publish an international journal article, book or book chapters (see ⑩) as a first or second author.
- ⑦ Under extraordinary circumstances, and upon approval by the IPCS academic committee, may the student take Seminar (V) before qualification examination, only if a proposal is finished and approved by the student's thesis advisor.
- ⑧ Followed by the completion of required courses except Seminar (V) and (VI) (including the credits students expect to receive by the end of the same semester), IPCS doctoral students need to provide the following certificates and meet the minimum graduation standards before applying for the qualification examination:

Name of Examination	Minimum Graduation Requirement
GEPT	High-intermediate
IELTS	5.5 (overall score)
TOEFL iBT	72
TOEFL ITP	543
TOEIC	785
FLPT	195
FCE	Grade B (score 160)

Under extraordinary circumstances, and upon approval by the IPCS academic committee, may the student take Seminar (V) before qualification examination, only if a proposal is finished and approved by the student's thesis advisor.

- ⑨ The qualification examination is held once per semester. The application documents that students need to submit to the IPCS Office before the designated deadline are as follows:
  - i. The application form of "The Qualification Examination and the Dissertation Publication"
  - ii. Full transcript
- ⑩ Upon approval by the IPCS curriculum committee may the annual assessment and the qualification examination be deferred for 1 year at most. Under extraordinary circumstances (e.g., pregnancy, illness or injury) may the student file qualification examination deferral application, once advisor's consent is acquired.
- ⑪ The qualification examinations may be combined with the students' annual assessments.
- ⑫ The result of the qualification examination is either "Pass" or "Fail" Students who failed their first attempt may retake their second qualification examinations 6 months later. Students who fail twice during the period of study will be expelled from NTU.
- ⑬ During the period of study, IPCS doctoral students may apply for qualification examination exemption by publishing an international

journals article, book, or book chapters that are related to their doctoral dissertation titles, in which the students are either the first or second authors. The students are considered passing the qualification examination once the DSC approved the exemptions. Research content of this publication must be made after attending the PhD program. After the approval of qualification examination exemption, the same publications may no longer be listed as the academic papers required for graduation.

### ③ Dissertation Oral Defense

- ① Once the students have passed the qualification examination and the annual assessments, they need to acquire acceptance of publication as the first author in one of the following forms before applying for the Dissertation Oral Defense:
  - i. An article in an SCI or SSCI journal as the first author
  - ii. An article in an A&HCI journal
  - iii. A book or book chapter, which is approved by the DSC
- ② Students should submit the first draft of their dissertations to the Oral Defense Committee for inspection 2 weeks prior to the Doctoral Degree Oral Defense.
- ③ The Oral Defense Committee should comprise the following members: 3 non-NTU members and 4 NTU members (including IPCS faculty and faculty on IPCS curriculum committee). The list of oral defense committee members is proposed by the advisor before holding the examination. The list should be approved by IPCS program director before taking effect.
- ④ Students transferred into the IPCS Doctoral Degree without the completion of their master's degrees, should complete at least 3 semesters of study before applying for the doctoral degree examination.
- ⑤ Please refer to the NTU academic codes for any subject matter not being mentioned here.



## 4.8 Thesis/ Dissertation Advisor and Graduate Student Relationship

- ❶ National Taiwan University College of Science International Degree Program of Climate Change and Sustainable Development graduate students may select a thesis/ dissertation advisor from the program faculty; upon approval, the advisor will become tutor of the student correspondingly. The Advisor-Student Relation is officially approved by the program director when the supervising faculty member and the supervised student are in agreement.
- ❷ IPCS students may also choose non-IPCS or non-NTU faculty as their co-advisor. Such applications need to be approved by the IPCS academic committee.
- ❸ Once the Advisor-Student Relation is established, student needs to submit the "Advisor Consent Form" (signed by the advisor), before the last day of the semester of enrollment. The program director and the curriculum committee shall assign advisor to students who failed to meet the deadline. If IPCS student demands to alter the choice of thesis/dissertation advisor, the student may file such application only when the following conditions are satisfied:
  - ❶ Student has been conducting research for a period of over 6 months under the instruction of the original advisor.
  - ❷ Student needs to sign a statement stating that unless a written consent from the previous advisor is obtained, the student shall not in any form publish or use the research results acquired under the instruction of the previous advisor, and the student is well understood the legal obligations and consequences of violating the statement.
  - ❸ Student conforms to the above conditions may only re-choose the thesis/ dissertation advisor once. Exception will have to be discussed and approved by the IPCS Admission Committee first.
- ❹ Each IPCS faculty members shall supervise no more than 3 Master-degree students each year, and no more than 4 Master students in 2 consecutive years. There is no restriction to the number of Ph.D. students.

## **4.9 Guidelines for Applying for the College of Science Dean's Award**

### **Article I: Purpose:**

The College of Science, National Taiwan University, establishes this Dean's Award to promote a culture of good academic performance in undergraduate or graduate programs. This guideline defines the eligibility and evaluation procedure for the Dean's Award among students in the IPCS program.

### **Article II: Eligibility:**

- ❶ Students may apply for the Dean's Award only once during their enrollment in the IPCS program.
- ❷ Students may apply for the Dean's Award only after they submitted the oral examination application form.
- ❸ Recipients of the Dean's Award must graduate in the year of application for this award. The College of Science may withhold this award from candidates who fail to graduate in time.

### **Article III: Evaluation procedure:**

- ❶ Applicants need to submit a long abstract as well as a recommendation letter from their thesis advisors, before the application deadline.
- ❷ The long abstract may be in electronic form and shall be no more than 8 pages, including tables and figures, with single spacing and double column format. The long abstract may be written in either Chinese or English.
- ❸ The academic committee will determine the Award's recipients based on evaluation of long abstracts and recommendation letters.
- ❹ Number of awards should be 10 % of number of the graduating students of the year. If this proportion yields a fraction, then it may be rounded to the nearest integer.

## 4.10 Guideline for the IPCS Student Achievement Award

- ❶ The IPCS student achievement award is granted to selected students who engage in research publications, activities, or contests in areas related to climate change and sustainability.
- ❷ This award recognizes IPCS students who exemplify excellence in the following categories:
  - ❶ students who have a first-authored paper under review by an international journal in an IPCS-related field (SCI\SCIE\SSCI), with quality of the paper being "minor revision" or above,
  - ❷ doctoral students who receive an award of a student presentation or poster contest at an international conference (equivalent awards at an international or domestic conference for master's students),
  - ❸ students who receive an award at any professional contest in an IPCS-related field, or
  - ❹ students who participated and have significant contribution to IPCS-related activities.
- ❸ Students should submit an application to the IPCS Office in either January or June each year.
- ❹ Applicants must submit (1) an application form and (2) a proof of record.
- ❺ IPCS academic committee will review the application and eligibility to select award recipients.
- ❻ Recipients of this award shall not receive other grants from the College of Science, NTU for the same cause.
- ❼ This guideline was approved by the program committee and effective once it is announced.

## 4.11 Transfer to another department/program

Students who wish to transfer to another department/program should complete at least the following two required courses: "Climate Change : Issues and Solutions" and "Workshop on Climate Change and Human Settlements". In addition, the application should not be proposed until the third semester.

