



# AGREEMENT ON DOUBLE DEGREE PROGRAM BETWEEN

# DEGREE PROGRAMS IN LIFE AND EARTH SCIENCES, GRADUATE SCHOOL OF SCIENCE AND TECHNOLOGY, UNIVERSITY OF TSUKUBA, JAPAN

AND

# COLLEGE OF LIFE SCIENCE, NATIONAL TAIWAN UNIVERSITY, TAIWAN

This Agreement is entered into by Degree Programs in Life and Earth Sciences, Graduate School of Science and Technology (as LES-GSST), University of Tsukuba (as UT) and College of Life Science (as COLS), National Taiwan University (as NTU) for the purpose of establishing an effective partnership to advance academic cooperation to foster students who will play important roles in globalization in years to come.

Both institutions agree to implement "Double Degree Program" that offers students to receive two Master's degree diplomas (from UT and from NTU) to be bound by the following terms and conditions.

#### Article 1. Aims

This Agreement is aiming at offering global academic education for the students of both graduate schools to encourage them to adapt to a variety of aspects in the international society. Both institutions agree to approve Master's candidates for diplomas of the UT and NTU for the full formulation and implementation of scientific and technical collaboration between Japan and Taiwan.

#### Article 2. Objective of the Double Degree Program

The objective of the Double Degree Program is to provide UT and NTU students the opportunity to obtain Master's degrees from both UT and NTU by spending at least two semesters at the partner institution and by developing a substantive research collaboration with a faculty member at the partner institution. This Double Degree Program is naturally embedded in the general program between the two universities.

#### Article 3. Degrees of the Double Degree Program

The qualified graduates who have followed the two years study program with success under the proposed Double Degree Program will be conferred the two Master's diplomas from UT and NTU recognized by the two countries. The diplomas awarded by UT and NTU will be for the degrees appropriate to the programs in which the student was enrolled.

The diploma awarded by UT is "Master of Science" and the diploma awarded by NTU is "Master of Science". The UT and NTU student pathways are described in Annex 2.

- 3.1 UT recognizes the first and fourth semesters of the Master performed at NTU. This only applies to the students of NTU recruited according to the terms and conditions of this Agreement.
- 3.2 NTU recognizes the first and fourth semesters of Master performed at UT. This only applies to the students of UT recruited according to the terms and conditions of this Agreement.

- 3.3 For UT students entering the Master: the rules and procedures of UT apply in order to validate the first and forth semesters study at UT; the rules and procedures of NTU apply in order to validate the second and third semesters study at NTU.
- 3.4 For NTU students entering the Master: the rules and procedures of NTU apply in order to validate the first and fourth semester study at NTU; the rules and procedures of UT apply in order to validate the second and third semesters study at UT.

#### Article 4. Participants and the Number

The participants in the Double Degree Program shall be full-time graduate students of either institution. In principle, during the valid period of this statement of intent, maximum of five students from each institution would be allowed to participate in this program each year. The students who apply for this program must be one of following:

- 4.1 The enrolled Master students of LES-GSST -UT
- 4.2 The enrolled Master students of COLS-NTU

#### Article 5. Recruitment and Admission of Participants

Both institutions can recruit students for the Double Degree Program. The candidates for this program should be Master students from one of both institutions. The students of each institution must be enrolled in their home institution.

- 5.1 Recruitment of UT students is under the responsibility of UT. The normal terms and conditions for application and acceptance to UT apply.
- 5.2 Recruitment of NTU students is under the responsibility of NTU. The normal terms and conditions for application and acceptance to NTU apply.
- 5.3 Final validation and selection of students will be decided by a joint committee composed of faculty members from each institution, which include a principal investigator and an advisor in a partner university. The final decision will be taken upon the application file and face-to-face or videoconference interviews. The final decision of candidates for Double Degree Program will be executed before end of the first semester in each institution.
- 5.4 Students from either UT or NTU should be enrolled in both institutions, despite that the students start their study first at their own home university.

#### Article 6. Registration, Withdrawal, and Reinstatement and Credits Waived

Participating students shall comply with the regulations of both institutions, to complete the process of registration, withdrawal and resumption. Transferred credits shall be approved in compliance with the regulations of both institutions and the terms of this Agreement.

All students will pay fees and tuition at their home institution. Students will register for courses at the institution at which they take the courses.

- 6.1 Students will register at their home university and pay tuition and fees to the home university only.
- 6.2 For period in which the student is at the partner institution, the students will register at their home university and pay tuition and fees to the home university only. Each university will fully recognize the tuition and fees paid to the other university and will not charge extra regular tuition or fees. However, additional fees will be

necessary to cover necessary social insurance as defined by each country's laws.

- 6.3 The tuition or fees paid by UT and NTU students does not cover the costs of stay in Japan and Taiwan. Students will be responsible for paying all other costs related to their participation in this program, which include:
  - 6.3.1 Accommodation, food and travel expenses
  - 6.3.2 Medical insurance, civil liability including any mandatory requirements from the host institution or country, unless paid by their home institution.
  - 6.3.3 Textbooks, clothing, and personal expenses
  - 6.3.4 Costs for passports, visas, visa extensions, or residency permits
  - 6.3.5 All other debts and incidental expenses incurred during the training stay
  - 6.3.6 Transportation expenses to and from the host institution
  - 6.3.7 Tuition fees (both administrative and pedagogic) at UT for UT students and at NTU for NTU students
  - 6.3.8 For UT students studying at NTU, an additional TWD 400 for NTU Wireless Network will be applied.

#### Article 7. Insurance

Participating students shall purchase the insurance, complying with the regulations of both institutions.

#### Article 8. Research Work

Each student in the Double Degree Program must have an advisory committee that consists of three faculty members from the home institute and two or three faculty members from the partner institute. One faculty member from each university will serve as a co-advisory, and have primary responsibility for the student while the student is at that university (e.g., provide research & study space, access to research materials and equipment). Each student's advisory committee must be approved by the UT Dean of Degree Programs in Life and Earth Sciences, LES-GSST and by the NTU Dean of College of Life Sciences.

The student's advisory committee will review and approve the Program of Study, which will include the coursework, including seminars and co-taught courses, and research credits that comprise the student's degree program. The Program of Study should be approved by the end of the first semester that the student is in the Double Degree Program.

Under normal circumstances, study and research work is expected to last 2 years for Master's students. Under exceptional circumstances, this period may be extended subject to a specific agreement between both institutions signing this Agreement, following a joint proposal by both thesis supervisors.

The thesis topic must be approved by the student's advisory committee. Time spent preparing the thesis will be divided between the two establishments involved in joint supervision. Master students participating in this program must spend no less than two semesters in one of the two institutions.

8.1 UT students will perform the first and fourth semesters of the Double Degree Program at UT and the second and third semesters at NTU. For UT students the Double Degree Program of the first semester is UT-oriented. Then the students move to NTU for two semesters of the NTU Double Degree Program. Finally, students return to UT for the final semester (Annex 2). Master thesis work will be performed at UT or at NTU or in any other laboratory or company accredited by UT and NTU. The Master thesis program will be defined in collaboration between the Principal Investigator of the Master student selected and laboratory where the thesis will be performed. The Master thesis defense at the end of the final, fourth semester will be done at UT under the conditions of UT. If successful, the students will obtain the NTU Master degree at the end of the final, fourth semester.

- 8.2 NTU students will perform first and fourth semesters of the Double Degree Program at NTU and the second and third semesters at UT. For NTU students, the Double Degree Program of the first semester is NTU-oriented. Selected students move to UT for two semesters of the UT Double Degree Program. Students will be selected at the end of the first semester of the Master at NTU by a mixed commission composed on the NTU side. Description of courses at UT is provided in Annex 3. Master thesis work will be performed during the second year at UT and at NTU, and will be defined in collaboration between NTU and UT. The Master thesis defense at the end of the final, fourth semester will be performed at NTU under the conditions of NTU. If successful, the students will obtain the UT Master degree at the end of the final, fourth semester.
- 8.3. Upon successful completion of the Double Degree Program, a student may apply to doctoral programs in UT or NTU or in any other university in Japan or Taiwan. However, successful completion of the Double Degree Program does not guarantee admission into a doctoral program.

#### Article 9. Curriculum and Credits

Depending on the educational requirements of each university and considering the specialties of the curriculum on each side, a curriculum for the Double Degree Program will contain required modules and meet the required credits of both universities (Annex 3). The home institution recognizes the credits, which can be transferred to the home institution, offered by the partner institution. All courses that are offered as part of the Double Degree Program will be taught in English. Curriculum of selected students is confirmed by the home and partner institution.

#### Article 10. Thesis and Languages

- 10.1 The oral defense will be expressed in English.
- 10.2 The thesis will be written in English.
- 10.3 The abstract will be written in English, Japanese and Chinese.

#### Article 11. Thesis defense

An oral defense of the thesis is required and will be conducted in English at UT or NTU. This defense must be participated by the full advisory committee, consisting of at least 3 faculty members from each institution. To be successful, the defense must be approved by a majority of committee members. Personnel from outside the two establishments may be invited to take part in the jury. The composition of the committee will comply with the rules of both universities and will be approved by NTU and UT. Spokespersons will be appointed in compliance with the rules of both establishments.

#### Article 12. Exchange of Faculty Members

Teaching staff members from each side are mainly responsible for the teaching on each side. However, the exchange of teachers to cover some courses is encouraged.

#### Article 13. Publication and Property

The subject of the thesis must be protected, and the results of joint research carried out by both laboratories must be published, used and protected in compliance with the specific procedures applicable in each country involved in joint supervision. A specific agreement will be drawn up for questions of industrial property.

#### Article 14. Regulations

Participating students enrolled in the Double Degree Program will be subject to the rules and regulations of both institutions and to the laws of the countries. Any breach of these rules and laws will be dealt with in accordance with the disciplinary policy of both institutions and the laws of the respective countries.

#### Article 15. Contact

Each institution shall appoint an administrative representative as a coordinator of the Double Degree Program.

#### Article 16. Term of Agreement

16.1 This Agreement shall remain in force from the date of the last signatures of representatives of both institutions and shall be effective for five years. It shall be renewed by mutual written agreement.

16.2 Either institution may terminate this Agreement by giving a 12 months written notice of termination to the other institution. Termination will not affect the current Double Degree Program participants from completing their activities at the host institution.

#### Article 17. Amendment to the Agreement

This Agreement may be amended by mutual written agreement of both institutions. The Annexes may be modified as necessary, while modification to the Annexes shall not affect the validity of this Agreement.

#### Article 18. Settlement of Disputes

Maleilite Nichiela

This Agreement has been made in English in two equally authentic copies. All disputes will be resolved in accordance with the laws of each country.

University of Tsukuba

**National Taiwan University** 

NISHIOKA Makihito

**Executive Dean** 

Graduate School of Science and Technology

University of Tsukuba

Shih-Tong Jeng

Dean

College of Life Sciences

Shihtong Jeng

National Taiwan University

Date: June 18, 2021

Date: July 2, 2021

YAMAOKA Yuichi

Degree Programs in Life and Earth Sciences

Graduate School of Science and Technology

University of Tsukuba

Date: June 18, 2021

# Annex 1. Master's Degrees in UT and NTU

Example 1

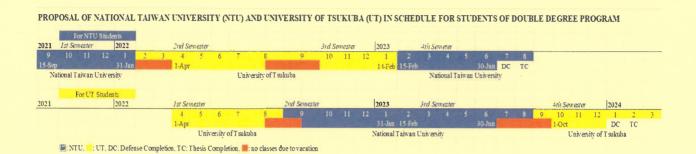
## University of Tsukuba

Degree Programs in Life and Earth Sciences, Graduate School of Science and Technology Master's Program in Biology: <u>Master of Science</u>

## **National Taiwan University**

College of Life Science: Master of Science

## Annex 2. Proposal of UT and NTU in Schedule for students of Double Degree Program.



Annex 3

# Example for Dual Degree Program in UT Master Degree Program in Life and Earth Sciences and in NTU Department of Life Science taken by NTU students

| Subject Grouping       |   | Area   | Subjects   | taken   |  | Credits     |              | Module  | University |      | Credits t | aken by NTU: | students |
|------------------------|---|--|--|---|--|-------------|--------------|---|------------|------|-----------|--------------|----------|
|                        | _   |  |  | by  |  | Compulsory  | Elective     |   | UT         | NTU  |           | Sub total    | -        |
| Foundation<br>Subjects | Common Subjects                               | Compulsory   | Cubicat annidad Com Their mate   | 1, 2  | 1  | ~           |              |   | 0          |      | 1         | -            |          |
|                        | Sub   | Compulsory   | Subject provided from University  Subject provided from Graduate School of Science and Technology  | 1, 2  |  |             |              |   |            |      | ļ         |              |          |
|                        | non   | Compulsory   |  |   | 1  | 3           |              |   | 0          |      | 1         | 3            |          |
|                        | l iii   | Compulsory   | Subject provided from Degree Program in  |   |  | 1           | DE TO        |   | 0          | 1    | 1         |              |          |
|                        |   |  | Life and Earth Sciences  |   | -  |             | D CONTRACT   | -   |            |      | 1         |              | -        |
| Major Subjects         | Course Required Subjects (UT)                 | Compulsory<br>Compulsory   | Seminar in Advanced Biological Sciences Science Presentation   | 1,2   | 2  | . 3         |              | Spr.<br>Spr.                                      | 0          |      | 3         |              |          |
|                        |   | Compulsory   | Secret resentation   |   |  | . 10        |              | 301.  | +          |      |           |              |          |
|                        |   | Compulsory   | Seminar IF for each research field*  | 1   | 2  |             |              | Spr.  | 0          | 1000 |           | 13           |          |
|                        |   | Compulsory   | Seminar IIS for each research field*   | 2   | 2  |             |              | Fall  | 0          |      | 10        |              | 16 c     |
|                        |   | Compulsory   | Methodology IF for each research field*  | 1   | 3  | - 10        |              | Spr.  | 0          | 131  | 10        |              |          |
|                        |   | Compulsory<br>Elective   | Methodology IIS for each research field* General Biology I   | 1   | 3  |             |              | Fall<br>Fall                                      | 0          |      |           |              |          |
| or St                  | ubjects                                       | Elective   | General Biology II   | 2   | 3  |             | 0 or<br>more | Fall  | 10         |      |           |              |          |
| Major                  |   | Elective   | Introduction to Phylogenomics  | 1, 2  | 1  |             |              | Spr.  | 0          |      |           | 0 or<br>more |          |
|                        | ye S  | Elective   | Introduction to Comparative Omics Analysis   | 1, 2  | 1  |             |              | Fall  | 0          |      | 0 or      |              |          |
|                        | Course Elective Subjects<br>(UT)              | Elective   | Practical Course on Proteome   | 1, 2  | 1  |             |              | Fall  | 0          |      | more      |              |          |
|                        |   | Elective   | Practical Course on Bioinformatics   | 1, 2  | 1  |             |              | Fall  | 0          |      |           |              |          |
|                        | one   | Elective<br>Elective   | Practival Course on Bioimaging Special Lecture on Science Communication  | 1, 2  | 1  |             |              | Fall<br>SprC                                      | 0          |      |           |              |          |
|                        |   | Elective   | Other Program Elective Subjects**  | 1,2   | 1  |             |              | - Spic  | 10         |      |           |              |          |
|                        |   | Compulsory for   | Academic Ethics  | 1   | 0  | 0           |              | Fall  |            | 0    | 0         |              | 15 o mor |
|                        | TO)   | NTU*** Compulsory for  |  | +   |  | 0 4         |              | 1 411   |            |      |           |              |          |
|                        | Course Elective Subjects (NTU) Subjects (NTU) | NTU***   | Thesis (Master)  | 1,2   | 0  |             |              | Spring  | 276        | 0    | 0         |              |          |
|                        |   | Compulsory   | Research Training  | 1,2   | 4  |             |              | Fall, Spring                                      |            | 0    | 4         | 8            |          |
|                        |   | Compulsory   | Seminar  | 1,2   | 4  | 4           |              | Fall, Spring                                      |            | 0    | 4         |              |          |
|                        |   | Elective   | Biological Modeling  | 1,2   | 3  |             | CE SEO       | Fall, Spring                                      |            | 0    |           |              |          |
|                        |   | Elective   |  | +   | 2  |             | 7 or<br>more |   |            | 0    |           |              |          |
| Major Subjects         |   |  | Exploring the Deep Sea   | 1,2   | ·  |             |              | Spring  |            |      |           |              |          |
|                        |   | Elective   | Genomics   | 1,2   | 3  |             |              | Fall, Spring                                      |            | 0    |           |              |          |
|                        |   | Elective   | Interidal Ecology: a Field Study Approach  | 1,2   | 3  |             |              | Spring  |            |      |           |              |          |
|                        |   | Elective   | Numerical Methods in Community Ecology   | 1,2   | 3  |             |              | Spring  |            | 0    |           |              |          |
|                        |   | Elective   | Methods of Vegetation Survey   | 1,2   | 3  |             |              | Spring  |            | 0    | 7 or more | 7 or<br>more |          |
|                        |   | Elective   | Molecular Evolution; Principles and Practice   | 1,2   | 3  |             |              | Spring  |            | 0    |           |              |          |
|                        |   | Elective   | Advanced Quantitative Methods in Fisheries<br>Stock Assessment   | 1,2   | 3  |             |              | Spring  |            | 0    |           |              |          |
|                        |   | Elective   | Mass Spectrometry-based Proteomics and<br>Protein Modification Analysis  | 1,2   | 2  |             |              | Spring  | 0          | 0    |           |              |          |
|                        |   | Elective   | Pharmaceutical Chemistry   | 1,2   | 2  |             |              | Fall, Spring                                      |            | 0    |           |              |          |
|                        |   | Elective   | Computer Modeling for Drug Design  | 1,2   | 1  |             |              | Spring  | 100        | 0    |           |              |          |
|                        |   | Elective   | Chemistry of Natural Products  | 1,2   | 1  |             |              | Fall, Spring                                      |            | 0    |           |              |          |
|                        |   |  | Advanced Biochip Technology and Data   | -   | ļ  |             |              |   | 0          |      |           |              |          |
|                        |   | Elective   | Analysis   | 1,2   | 3  |             |              | Spring  |            |      |           |              |          |
|                        |   | Elective   | Other Program Elective Subjects  | 1,2   | 1  |             |              |   |            | 0    |           |              |          |
|                        |   | 学位を取得する<br>情報生命学術院   | 台湾大学のダブルデグリー取得を希望する学<br>には、  | 必修)1년<br>详共通科   | 目(必修)  |             |              | Remarks   |            |      |           | Total        | 3        |
|                        |   | を履修するととも<br>む、合計15単位<br>ばならない。   | に、国立台湾大学が開設するコース共通科目<br>以上を履修し、かつ修士論文を提出し最終試   | (必修)<br>験に合材  | 8単位を含<br>各しなけれ                               |             |              |   |            |      |           |              |          |
| mpletion Re            |   | including Subject<br>Graduate School<br>Degree Program<br>Subjects (3 credit<br>Subjects (at least<br>double degree mu | degree from University of Tsukuba, after taki<br>provided from University (1 credit), Subject prof Science and Technology (1 credit), Subject in Life and Earth Sciences (1 credit), Course B<br>s), Cource Required Subjects (10 credits), Cou<br>0 credits) in University of Tsukuba, the studen<br>st take 15 credits from Course Common Subje<br>ubjects (at least 7 credits) in National Taiwan | provided<br>provide<br>asic Req<br>arse Elec<br>ats wish<br>ects (8 c | from d from quired tive to have credits) and |             |              |   |            |      |           |              |          |
|                        |   | the final oral exar<br>Tsukuba.  | ination and submit approved Master Thesis to   |   |  |             |              |   |            |      |           |              |          |
| * Eight rese           |   |  |  |   |  | ** Examples |              |   |            |      |           |              |          |
|                        |   |  | Evolutionary Biology   |   |  | 01AA0       |              | Advanced Field (                                  |            |      |           | -            |          |
|                        |   | Ecology  |  |   |  | 01AA0       |              | Advanced Field (                                  |            |      |           | -            |          |
|                        |   | Plant Physiology and Developmental Biology   |  |   |  |             | 60           | 01 AA060 Advanced Field Course in Terrestrial Zoo |            |      |           |              |          |

\* Eight research field

Systematics and Evolutionary Biology

Ecology

Plant Physiology and Developmental Biology

Animal Physiology and Developmental Biology

Molecular and Cellular Biology

Genomics and Bioinformatics

Advanced Cellular Biology

Advanced Cellular Biology

Advanced Molecular Biology

#### Example for Dual Degree Program in UT Master Degree Program in Life and Earth Sciences and in NTU Department of Life Science taken by UT students

| ubject Grouping        |                                 | Area  | Subjects  | taken  |   | Credits                         |              |  | University        |         | Credits to   | aken by UT   | studei |
|------------------------|---------------------------------|---|---|--|---|---------------------------------|--------------|--|-------------------|---------|--------------|--------------|--------|
|                        |                                 |   |   | by   |   | Compuls                         | Elective     | Module   | UT                | NTU     |              | Sub total    |        |
|                        | ss                              |   |   |  | ,   | 1                               | THE STATE OF |  |                   |         |              |              |        |
| non s                  | ıbjec                           | Compulsory  | Subject provided from University  | 1, 2   | 1   |                                 |              |  | 0                 |         | 1            |              |        |
| dati                   | ı Su                            |   | Subject provided from Graduate School of  |  |   | . 3                             |              |  |                   |         |              | 3            |        |
| Foundation<br>Subjects | mon                             | Compulsory  | Science and Technology  | 1, 2   | 1   | 3                               |              |  | 0                 |         | 1            |              |        |
|                        | Common Subjects                 | Compulsory  | Subject provided from Degree Program in Life  | 1, 2   | 1   |                                 |              |  | 0                 |         | 1            |              |        |
|                        | J 0,                            |   | and Earth Sciences  | _  | 7   |                                 |              |  |                   | 53-5-   |              |              | -      |
| Major Subjects         | S Course Required Subjects (UT) | Compulsory  | Seminar in Advanced Biological Sciences   | 1,2  | 2   | - 3                             |              | Spr.   | 0                 |         | 3            |              |        |
|                        |                                 | Compulsory  | Science Presentation  | 11   | <u></u>   |                                 |              | Spr.   | ł                 | 7-2     |              | 13           |        |
|                        |                                 | Compulsory  | Seminar IS for each research field*   | 1  | 2   | 1                               |              | Spr.   | 0                 | 675     |              |              |        |
|                        |                                 | Compulsory  | Seminar IIF for each research field*  | 2  | 2   | 1                               |              | Fall   | 0                 | 1       |              |              | 20     |
|                        |                                 | Compulsory  | Methodology IS for each research field*   | 1  | 3   | 10                              |              | Spr.   | 0                 |         | 10           |              | moi    |
|                        |                                 | Compulsory  | Methodology IIF for each research field*  | 2  | 3   |                                 |              | Fall   | 0                 |         |              |              |        |
|                        |                                 | Elective  | General Biology I   | 1  | 3   | 77 0 25                         | 1            | Fall   | 0                 |         |              |              |        |
| jor                    | ject                            | Elective  | General Biology II  | 2  | 3   |                                 |              | Fall   | 0                 | 0       |              |              |        |
| Ma                     | Sub                             | Elective  | Introduction to Phylogenomics   | 1, 2   | 1   | -                               | 4 or         | Spr.   | <b>+</b>          |         |              |              |        |
|                        | Ive I                           | Elective  | Introduction to Comparative Omics Analysis  | 1, 2   | 1   |                                 |              | Fall   | 0 0 0             |         | 4 or         | 4 or         |        |
|                        | Course Elective Subjects (UT)   | Elective  | Practical Course on Proteome  | 1, 2   | 1   |                                 | more         | Fall   |                   |         | more         | more         |        |
|                        |                                 | Elective  | Practical Course on Bioinformatics  | 1, 2   | 1   |                                 |              | Fall<br>Fall                                       |                   |         |              |              |        |
|                        | uno                             | Elective<br>Elective  | Practival Course on Bioimaging Special Lecture on Science Communication   | 1, 2   | 1   |                                 |              | SprC   | 0                 |         |              |              |        |
|                        | 5                               | Elective  | Other Program Elective Subjects**   | 1,2  | 1   |                                 |              | Spic   | 0                 | 1       |              |              |        |
|                        | ы                               | Licotive  | One Frogan Elective Subjects  | 1,2  | -   |                                 |              |  | 11000             |         |              |              | 1      |
|                        | Course Common Subjects<br>(NTU) | Compulsory<br>for NTU***  | Academic Ethics   | 1  | 0   | 0                               |              | Fall   |                   | 0       | 0            |              |        |
|                        | ommon<br>(VTV)                  | Compulsory  | Thesis (Master)   | 2  | 0   | 0                               |              | Spring   |                   | 0       | 0            | 8            |        |
|                        | urse Co:                        | for NTU***  | Thesis (Master)   |  | ,   |                                 |              | Spring   |                   |         |              |              | 10 c   |
|                        |                                 | Compulsory  | Research Training   | 1,2  | 1   | 4                               |              | Fall, Spring                                       |                   | 0       | 4            |              |        |
|                        | చి                              | Compulsory  | Seminar   | 1,2  | 1   | 4                               |              | Fall, Spring                                       |                   | 0       | 4            |              |        |
|                        |                                 | Elective  | Biological Modeling   | 1,2  | 3   | DE EU                           |              | Fall, Spring                                       | THE TO            | 0       |              |              |        |
|                        |                                 |   |   |  | ,   |                                 |              |  |                   | 0       |              |              |        |
|                        |                                 | Elective  | Exploring the Deep Sea  | 1,2  | 2   |                                 |              | Spring   |                   |         | -            |              |        |
|                        | Course Elective Subjects (NTU)  | Elective  | Genomics  | 1,2  | 3   |                                 |              | Fall, Spring                                       |                   | 0       |              |              |        |
| sts                    |                                 | Elective  | Intertidal Ecology:a Field Study Approach   | 1,2  | 3   |                                 |              | Spring   |                   | 0       |              |              |        |
| bjec                   |                                 | Elective  | Numerical Methods in Community Ecology  | 1,2  | 3   |                                 |              | Spring   |                   |         |              |              |        |
| .Su                    |                                 |   |   |  |   |                                 |              |  |                   |         |              |              | (10    |
| Major Subjects         |                                 |   |   |  |   | LVE TO                          |              |  |                   |         |              |              | tran   |
|                        |                                 | Elective  | Methods of Vegetation Survey  | 1,2  | 3   |                                 |              | Spring   |                   | 0       |              |              | to     |
|                        |                                 | Elective  | Molecular Evolution: Principles and Practice  | 1,2  | 3   |                                 | 2 or         | Spring   |                   | 0       | 2 or         | 2 or         | CIEC   |
|                        |                                 | Elective  | Advanced Quantitative Methods in Fisheries Stock  | 1,2  | 3   |                                 | more         | Spring   |                   | 0       | 1            | more         |        |
|                        |                                 |   | Assessment  | -,-  | ,   |                                 |              | -F8  |                   |         |              |              |        |
|                        |                                 | Elective  | Mass Spectrometry-based Proteomics and Protein<br>Modification Analysis   | 1,2  | 2   |                                 |              | Spring   |                   | 0       |              | Total        | 30     |
|                        |                                 | Elective  | Pharmaceutical Chemistry  | 1,2  | 2   |                                 |              | Fall, Spring                                       |                   | 0 0 0 0 |              |              |        |
|                        |                                 | Elective  | Computer Modeling for Drug Design   | 1,2  | 1   |                                 |              | Spring   | atabilitatasalata |         |              |              |        |
|                        |                                 |   |   |  | ,   |                                 |              |  |                   |         |              |              |        |
|                        |                                 | Elective  | Chemistry of Natural Products   | 1,2  | 2   |                                 |              | Fall, Spring                                       |                   |         |              |              |        |
|                        |                                 | Elective  | Advanced Biochip Technology and Data Analysis   | 1,2  | 3   |                                 |              | Spring   |                   |         |              |              |        |
|                        |                                 | W15   |   |  | ,   |                                 |              |  |                   |         |              |              |        |
|                        |                                 | Elective  | Other Program Elective Subjects**   | 1,2  | 1   |                                 |              | Donosto  |                   |         |              |              |        |
|                        |                                 |   |   |  |   |                                 |              | Remarks  |                   |         |              | 1 otai       | 3      |
|                        |                                 | 学位を取得す情報生命学術<br>1単位、専門ま<br>上を含む20単<br>を含む、合計:<br>ければならない  |   | 修)1単<br>共通科<br>(選択)・<br>する10<br>試験に                            | 位、理工<br>目(必修)<br>4単位以<br>単位以上<br>合格しな                       |                                 |              |  |                   |         |              |              |        |
| npletion l             |                                 | including Subj<br>provided from<br>provided from<br>Required Subj<br>Elective Subje<br>wish to have d   | ster degree from University of Tsukuba, after taking<br>ect provided from University of Tsukuba (1 credit),<br>Graduate School of Science and Technology (1 cre<br>Degree Program in Life and Earth Sciences (1 cred<br>ects (3 credits), Course Required Subjects (10 credit<br>cts (at least 4 credits) in University of Tsukuba, the<br>louble degree, must take 10 credits from National Toral<br>examination and submit approved Master Thesis | Subject<br>dit), Solit), Cou<br>ts), Cou<br>student<br>aiwan U | t<br>ubject<br>urse Basic<br>urse<br>ts, who<br>Jniversity, |                                 |              |  |                   |         |              |              |        |
|                        |                                 | earch field Systematics and Evolutionary Biology Ecology Plant Physiology and Developmental Biology Animal Physiology and Developmental Biology |   |  |   | ** Exam<br>01AA<br>01AA<br>01AA | N056<br>N059 | Advanced Field<br>Advanced Field<br>Advanced Field | Course            | in Mou  | ntain Forest | Ecology      | у      |
|                        |                                 |   | Cellular Biology  |  |   | ***                             |              |  |                   |         |              |              |        |
|                        |                                 |   |   |  |   | To obtai                        | n NITIL      | degree, these cr                                   | edite are         | ramira  | Rut to ha    | us IIT doors | e the  |
|                        |                                 | Genomics and  | Bioinformatics  |  |   | 10 oou                          | HILLO        | degree, mese cr                                    | cuito are         | require | i. Dui to na | ve of degre  | -,     |