GIP TRIAD
Leap to the Future of Food & Health

International Joint Degree Master's Program in Agro-Biomedical Science in Food and Health (GIP-TRIAD)
筑波大学国際連携食料健康科学専攻

International Joint Degree Master's Program in Agro-Biomedical Science in Food and Health

Program Assessment

October 2019

Contents

Introduction

The International Joint Degree Master's Program in Agro-Biomedical Science in Food and Health (GIP-TRIAD) is a join degree program of three universities, namely the University of Tsukuba, National Taiwan University and the University of Bordeaux, which commenced in September 2017. The aim of this program assessment is to check whether the program has been conducted as planned, and to find any room to improve the program.

According to the guideline from the National Institution for Academic Degrees and Quality Enhancement of Higher Education（独立行政法人 大学改革支援・学位授与機構）, the program should be assessed in terms of: a) whether the diploma policy has stated an expected learning achievement; b) whether the curriculum policy has been set toward an expected learning achievement; c) whether the courses have been offered according to the curriculum policy; d) whether the courses are effectively conducted; e) whether academic supervision has been offered; f) whether students' learning achievement has been evaluated: g) whether students have met an expected learning achievement; h) whether an expected learning achievement has been fulfilled in light of carrier path after graduation; i) whether admission is appropriate: j) whether staffing is appropriate; k) whether student support is appropriate; l) whether the program management is appropriate.

Based on the guideline, we summarized review topics as program management, admissions, education, student support, and carrier development. The program assessment is [was] done both internally (by faculty members of GIP-TRIAD) and externally to make the assessment robust, neutral and meaningful. External reviewers were invited from Japan, Taiwan, and France, as listed below. This report firstly provides the overview of the program, then briefly explains each review topic, that is followed by internal and external assessment, and finally describes the way forward based on the assessment.

External reviewers

Japan

Prof. Chiho Watanabe
President, National Institute for Environmental Studies
Professor Emeritus, University of Tokyo

Taiwan

Prof. Cheryl Chia-Hui Chen
Professor, Department of Nursing, College of Medicine
National Taiwan University

France

Prof. Patrick Lucas
Professor, Institute of Vine and Wine Science
University of Bordeaux

External reviewers' note

The External Review Panel visited the International Joint Degree Master's Program in Agro-Biomedical Science in Food and Health, hereafter referred to as GIP-TRIAD, on 1 October 2019 to assess the program and its quality assurance processes and make commendations and suggestions as appropriate. The Panel has undertaken this task at the invitation of President Kyosuke Nagata at University of Tsukuba in the interests of furthering the quality of the GIP-TRIAD.

The Panel members were as follows: Professor Chiho Watanabe [President, National Institute for Environmental Studies and Professor Emeritus, University of Tokyo]; Professor Patrick Lucas [Professor, Institute of Vine and Wine Science, University of Bordeaux]; and Professor Cheryl Chia-Hui Chen [Professor, Department of Nursing, College of Medicine, National Taiwan University]

The Panel wish to thank the University of Tsukuba GIP-TRIAD Program Director, Dr. Yoshito Kumagai; National Taiwan University GIP-TRIAD Director, Dr. Tsai-Kun Li; University of Bordeaux GIP-TRIAD Director, Dr. Dominique Rolin and numerous other members of the GIP-TRIAD program administration, faculty, staff, and student body for their tireless assistance with the review process.

Additionally, at Program Assessment Meeting on Oct. 1, 2019, informative and precisely organized oral sessions regarding the GIP-TRIAD's program introduction, management, admissions, education, student supports, and career development were led and presented, respectively, by Dr. Yoshito Kumagai, Dr. Masao Ichikawa, Dr. Junichi Peter Abe, Dr. Ryosuke Ohniwa, Dr. Zheng Ling, and Dr. Chiaki Matsukura. Many concerns and questions were raised and effectively clarified during the sessions. Many thanks to these remarkable GIP program leaders and faculty members.

This report contains the Panel's observations based on the information provided to it by GIP-TRIAD and the observations of the Panel during the visit. The Panel has been guided by the National Institution for Academic Degrees and Quality Enhancement of Higher Education in Japan.

Overview of the program

To meet a growing demand for advanced professionals to find innovative solutions to global food and health challenges, the University of Tsukuba, National Taiwan University and the University of Bordeaux have come to establish an International Joint Degree Master's Program in Agro-Biomedical Science in Food and Health (GIP-TRIAD). This program would never be built in a day or even a year. It took almost five years since the initial inception of the program to commence the GIP-TRIAD. To realize the program, faculty members of the three universities have held the symposium to discuss it every year during the Tsukuba Global Science Week, an annual international academic conference hosted by the University of Tsukuba. The faculty members of each university have also visited each other on their campus to learn their strengths in education and research. Through a series of meetings and communications, we have brushed up the program format and contents. Finally, the GIP-TRIAD commenced in September 2017.

The GIP-TRIAD is a joint degree program by the three universities, offering a single diploma called "Master of Agro-Biomedical Science in Food and Health". This was enabled for the program to follow the regulations that each university has to follow, namely Article 35 to 41, Japanese Standard for Establishing Graduate Schools; the Regulations Regarding the Assessment and Recognition of Foreign Academic Credentials for Institutions of Higher Education of Taiwan; and the French Education Code and in particular articles L.613-1 related to the higher education public service's missions in relation to international affairs and D.613-17 to D.613-25 related to degree awarding within the frame of international partnerships. The name of degree in a local language is: 修士（食料健康科学）at the University of Tsukuba; 農業生技與健康醫療碩士 at National Taiwan University; and MASTER MENTION Biologie, AgroSciences, PARCOURS International Agro BioMedical Science, at the University of Bordeaux.

A unique feature of this program is that students move and spend each semester together in Japan, Taiwan, and France, to attend classes and receive research guidance at each university. This is intended to incorporate and complement the merits and strengths of each university in education and research, thereby the program provides students with the best possible, comprehensive curriculum that help them find innovative solutions to global food and health challenges.
Their learning has been monitored through a learning outcome evaluation system, which

is also unique to this program. In this system, tutors at each university provide students with academic support while checking the level of their achievement through the system. Moreover, to facilitate effective learning of the students, the universities provide them with on-campus (or near campus) accommodations at a reasonable cost during their stay.

In this program, students need to obtain at least 15 credits from each university, a total of 45 credits or more, including an internship which is compulsory for all students. Students are also required to write a research report or a business proposal and to pass both mid-term and final oral defense which is jointly conducted by the three universities through a tele-conferencing system. We believe that students who pass all the program requirements should be armed with knowledge and skills enough to tackle with global food and health challenges.

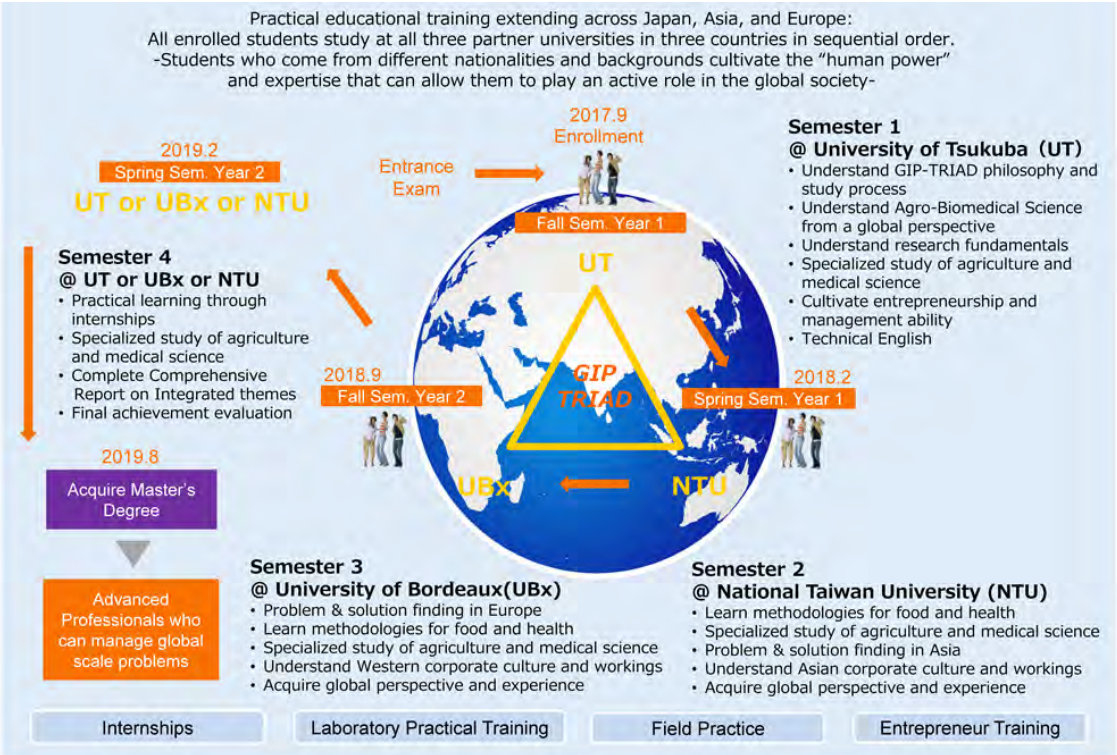

Figure 1. Overview of the International Joint Degree Master's Program in Agro-Biomedical Science in Food and Health (GIP-TRIAD)

Program management

To manage the program, the three universities established the following joint committees, and set up a tele-conferencing system to hold committee meetings, entrance examinations, and students' presentation and defense. The type and role of each committee is described below.

Steering committee

The steering committee is a top decision-making body within the program, which consists of program leaders, sub-leaders, and sub-committee heads from each university, with a vice president of the university as a supervisor. The meeting is held once a year and attended by relevant faculty and staff members at each university as well as the committee members.

Working committee

Each university forms the working committee for the program management. The committee consists of a program leader, sub-leader, sub-committee heads and other relevant faculty and staff members. The meeting is held periodically.

Sub-committees

There are seven sub-committees. Each sub-committee consists of at least one representative from each university. The meeting is held as needed. The role of each sub-committee is described below.

1. Curriculum Committee

1. Curriculum design
2. Formulation of curriculum
3. Syllabus planning and course registration
4. Educational policies and methods
5. Framework for student mentoring

2. Enrollment Management Committee

1. Framework and method for student selection
2. Preparation and operation of enrollment application procedures
3. Preparation and operation of entrance exam

3. Degree Examination Committee

1. Framework and method for achievement evaluation
2. Framework and method for degree examination
3. Preparation and operation of related procedures

4. Corporate Relations & Career Development Committee

1. Management for internship
2. Development of connections with corporations
3. Liaison and coordination
4. Operational management
5. Career advising support
6. Employment support

5. Public Relations and Advertising Committee

1. Seminars for recruitment
2. Public relations and advertising strategy
3. Creation and operation of homepage
4. Creation of printed advertising materials
5. Admissions/entrance exam-related PR/Advertising with related university undergraduate departments

6. Student Support Committee

1. Management of enrollment and student safety
2. Financial support, welfare and guidance for students

7. Program Review and Evaluation Committee

1. Self-review and evaluation for entire program
2. Faculty development and staff development
3. External evaluation

Program management: assessment

Internal assessment

The three universities have formed the committees, as described above, to manage the program. Generally, the committees are working well as planned, but the number of committee members is small. It is preferable to increase the number. For the committees to work effectively, especially across the universities abroad, a tele-conferencing is vital, but we sometimes faced disconnection while tele-conferencing. To prepare for such troubles, we have been prepared to use two different teleconferencing systems, so if one is suddenly disconnected, another can be readily used. This was an improvement we made to date.

External assessment

Level of achievement/performance:	1. Excellent	2. Good	3. Fair	4. Poor

Reviewer 1 [Excellent]

Overall, the program is very impressive and appeared attractive to the students. Considering the ambition and complexity, the program appears to be well structured and managed. It was particularly impressing that the communication between faculty and students is highly encouraged in the program.

Regarding the management, the only concern was communication among the Steering, Working, and Sub-working committees. It might be better to have more structured, regular communication for further refinement of the program.

The program is very demanding not only for faculty members but also for students. For students, the program is too costly (financial, time, and effort) to fail. For faculties, it should be very difficult to give an already-enrolled student a failure score. As far as the entrance examination goes well and highly qualified students are enrolled (as it is so currently), this might not be problematic, but it might be worth considering how the program should deal with a student who shows inability to catch up with the lectures/research. Transfer to an ordinal (conventional) course in the respective universities would be an option.

Including this point, risk management aspect of the program was not clear during the committee hearing (this is not requesting to make it an agenda for the committee, it rather depends on the policy of the program).

Purpose and style of the evaluation committee might be redefined clearly. It would be better to recruit the committee members from outside the three universities (maybe I'm misunderstanding the affiliation of the members?); also, it would be recommendable to let the committee members to discuss about the report during or right after the hearing. But, all of these depend on the policy of the program.

Reviewer 2 [Excellent]

The GIP program management is appropriate as the three universities established the Joint Steering Committee, Working Committee, and 7 Sub-committees to have regular meetings to communicate and making decisions. It is evident that these committees are working well as most members have shared commitment for the GIP-TRIAD.

While the program management is appropriate, the GIP-TRIAD may wish to consider involving students (or alumni) and external stakeholders (i.e., human resource executives from public or private sectors) more actively in its further development and evaluation processes.

Reviewer 3 [Excellent]

The coordinators managed to set up a top-quality Master program joining 3 Universities, while there were many hurdles to overcome, considering their administrative, organizational and societal differences. After 2 years of activity, its evaluation shows that this program is a great success as it has successfully attracted and trained students who have achieved a level of excellence and who have easily obtained a PhD position or a job in their areas of expertise. This success is based on an excellent management structure that consists of several committees that share responsibilities. For the evaluation of the program, however, it would be useful to provide more details on the committees: members, frequency and mode of meeting, schedule of meetings if it exists, etc. At this stage of the program, it might be envisaged to associate alumni with some of these committees.

Admissions

Following the admission policy, the three universities have conducted entrance examinations through a tele-conferencing system according to the exam schedule at each university. The admission policy and selection procedure are described below.

Admission Policy

This program seeks students that, with a background in medical or agro-biological resources science and a cooperative spirit, are strongly determined to innovate and contribute to the future of society and mankind by overcoming national and academic boundaries to assertively tackle global-scale issues related to the fields of health and food.

Selection Procedure

Applicants prepare required documents in English and submit them to any of the three universities. Each university performs the initial screening and selection of applicants, and those selected are subject to the second examination which is jointly conducted by the three universities in English. The second examination is based on the screening of their application documents (including the past academic grades and language proficiency), an individual presentation, and a group discussion. A final decision to select students is jointly made by the three universities.

Confidential references (Appendix 1)

- A sample of application documents
- A sample of group discussion materials

Admissions: assessment

Internal assessment

The entrance examination was conducted in October and February/March at National Taiwan University, in August and January/February at the University of Tsukuba, and in February at the University of Bordeaux, depending on the schedule of entrance examinations at each university. The first batch of the students (who entered in September 2017) consists of 13 students including 3 students from the University of Tsukuba, 5 students each from National Taiwan University and the University of Bordeaux. The second batch included 11 students including 1 student from the University of Tsukuba, and 5 each from other two universities. The third batch will be the same composition as the second batch.

While examinations have been properly conducted according to the admission policy, there were a small number of applicants at the University of Tsukuba. One of possible reasons for this is a gap between a month of graduation in Japan (March) and a month of commencement of the GIP-TRIAD (September). To fill this gap, the University of Tsukuba created a special student status for those would enter the GIP-TRIAD, whereby they can be entitled a student status at the University of Tsukuba until the commencement. We will see whether it works.

External assessment

Level of achievement/performance:	1. Excellent	2. Good	3. Fair	4. Poor

Reviewer 1 [Good]

A concern is the balance between the number and effort of the faculty members and the number of the students. Although quality should be more prioritized than quantity, it would be better to keep or try to slightly expand the number of students. For this, it would be preferable to extend the call for candidates as broad as possible in terms of both region/country and of background field. As far as I understood, one of the selection criteria was whether the candidate has enough background knowledge in either agriculture or medical science. I wonder perhaps the current curriculum can accommodate those ones who do not have these background.

Current way of entrance examination seems to work very well, although it must be so demanding to the faculties. It was not clear whether ALL the candidates go through exactly the same procedure (i.e., first screening and second interview -including both individual and group discussion) without exception.

Reviewer 2 [Good]

Student evaluation of the entire admissions process is generally favorable. It is important to note that the process continues to evolve and tremendous efforts have been placed to address the small number of applicants at the University of Tsukuba.

Given there are large Japanese communities both in Taiwan and in France, recruitment in these communities to attract the second or third-generation of Japanese-Taiwanese or Japanese-France might be considered. Nonetheless, GIP-TRIAD may wish to consider establishing a mechanism to recruit students locally and internationally to ensure the influx of high-quality student as well as tuition and fees, thus program is sustainable.

Reviewer 3 [Good]

The 3 universities set up a recruitment procedure in 2 phases (first in each university, then in a concerted manner between the 3 universities), with high-level admission requirements (scientific, linguistic, and sociability) which are relevant to selecting the best candidates. The quality of the first students confirms that this recruitment strategy is successful. The number of students recruited is in line with the objectives, except for the University of Tsukuba, with only 1 student in the 2nd and 3rd years. This difficulty is due to the small number of applications, which can result from different reasons that have already been taken into account by the coordinators. After the audition, it appears that the next recruitment of Tsukuba University will have a larger number of students. It would be unfortunate, however, if the University of Tsukuba or the other two universities were again facing difficulty in the future. All possible solution to increase the number of applications should be considered jointly between universities. Comments from the alumni could be interesting. At the level of the 3 universities, it could also be asked to all students who have received adequate training to apply, why they do not apply.

Education

To enables students to acquire advanced knowledge and skills related to agro-biomedical science with a global outlook through practical training for two years (four semesters) across Japan, Taiwan, and France, the three universities have jointly set the human resource development goal and the curriculum policy, providing education accordingly.

Human resource development goals

By the end of the program, students are equipped with the following knowledge and skills.

Generic knowledge and skills

Literacy

- Ability to think across different fields, backed up by expertise
- Language skills to be able to utilize expert knowledge and ability

Coordination ability

- Judgment and planning ability in overseas fields
- Ability to interact and negotiate with multiple nationalities
- Management skills within different fields and industries

Practical skills

- Practical ability to give shape to and execute ideas
- Ability to express oneself through presentations, self-promotion, etc.

Expert knowledge and skills

Ability to connect health to food resources

- Knowledge about the functionality and medical application of biological resources
- Knowledge about diseases and physical disabilities resulting from food
- Knowledge about policies concerned with food resources and medical care

Ability to understand heath security challenges

- Knowledge about social medicine such as the safety of chemical substances including

food resources and medicines

Ability to understand food security challenges

- Knowledge about the evaluation and development of biological resources (including safety) and the sustainable use of food production systems

Curriculum Policy

A feature of this program is that students move each semester from Japan to Taiwan and then to France, taking classes and receiving research guidance at universities in each country. The program incorporates the unique merits of our own university with those of the University of Bordeaux and National Taiwan University, our respective curriculums and educational structures complementing and enhancing one another. The universities also provide accommodation for the students during their stay and ensure a good study and living environment on campus. As well as acquiring 45 credits or more, students conduct special subject research instead of a master's thesis, and summarize the results of their two years of study while also giving a written and oral presentation of a research and/or business proposal.

In addition, we have established a learning outcome evaluation system unique to this program called GLidD, in which tutors at the three universities provide academic support while checking the level of achievement of the students. In the fourth semester, students complete their special subject research instead of a master's thesis, and those who pass a final examination jointly held by all three universities are awarded a Master's Degree in Agro-Biomedical Science in Food and Health and receive a graduation certificate signed by all three university presidents.

Armed with food and health related knowledge and practical abilities as well as negotiating skills and practical English skills developed in Introduction of Agro-Biomedical Science conducted in Japan, Agro-Biomedical Science Laboratory Seminars conducted in Japan and Taiwan, Combined Field and Laboratory Studies conducted in Taiwan and France, and Corporate Internships held in all three countries, graduates of this program can expect to find work in a wide range of occupations including the safety evaluation departments of drug and food companies in Japan and overseas.

Because the program nurtures expertise concerned with the physical benefits and safety

of food resources and health foods, students conduct educational research particularly in the fields of medical science, hygiene and public health. Expertise in food manufacture and processing is also important for achieving the goals of the program, and so we have organized the curriculum in collaboration with related areas of agriculture.

Curriculum

Tables 1 to 3 show the curriculum at the University of Tsukuba, National Taiwan University, and the University of Bordeaux. Students need to obtain at least 15 credits from each university in each semester. In addition to the course work, students are required to write a comprehensive report on their research results and/or business plan to solve global food and health challenges. Students are encouraged to integrate what they learned during the program into the report.

Grading

Course grading is based on the original grading system at each university which varies between universities. The grade is therefore converted based on the conversion table agreed by the three universities. Students receive the grades based on the grading system of their home university.

Research supervision

Three academic advisers are assigned to each student. A main advisor is selected from the faculty of students' home university, while two co-advisors are selected from other two universities, one from each. Mentoring is offered regularly from those advisors in person or through email communication and a tele-conferencing system.

Defense/oral examinations

Students are required to give mid-term and final presentations of their research and to pass oral examinations. Three examiners are assigned to each student, one from each university, and one from students' home university is a main examiner who is different from a main advisor. Oral examinations are conducted through a tele-conferencing system and joined by examiners from the three universities.

Degree completion requirements

To complete the program, students are required to obtain a minimum of 45 credits (or 120 ECTs) including at least 15 credits from each university, to write a comprehensive report, and to pass the defense (an oral examination) of the report.

The unit of credits differs between universities, so we converted the unit of credits based on study hours per credit, and the following credits are required at each university to complete the program: 45 credits at the University of Tsukuba, 45 credits at National Taiwan University, and 120 ECTs at the University of Bordeaux.

Diploma policy (Degree conferral policy)

A degree is awarded to a student who has earned sufficient credits in accordance with course methods and graduation requirements and who is recognized through an oral examination on their special subject research and a final written examination as having attained the following learning outcomes.

1. The student has acquired basic knowledge and skills related to food safety evaluation and health maintenance on a global scale.
2. Regarding real global challenges in food safety evaluation and health maintenance, the student understands the process from setting up a problem to resolving it professionally and can plan and develop specific methods for problem solving.
3. The student has an international perspective along with cultural adaptability, and the practical ability to get things done in serving people and society.
4. The student can communicate well and demonstrate leadership in the field of international activities.
5. The student has the creativity to innovate through interdisciplinary learning and advanced practical research.
6. The student has acquired a cross-cutting perspective that is not limited to his or her area of specialization.

Confidential references (Appendix 2)

- A sample of the format used in a learning outcome evaluation system (GLidD)
- Course evaluation form and results

- The list of students, their supervisors and examiners along with the comprehensive report title
- A sample of the comprehensive report
- A sample of academic records

Table 1. Curriculum at the University of Tsukuba

Subject Type	Subject Name	Credit
Foundation Subjects	1. Introduction of Agro-Biomedical Science	1
	2. Environmental Health Perspective	2
	3. Entrepreneurship Training Ⅰ	2
	4. Entrepreneurship Training Ⅱ	2
	5. English in Medical Science and Technology	1
	6. Writing Scientific Papers in English for Students of Agro-Bioresources Science and Technology	1
Specialized Subjects	7. Agro-Biomedical Science Laboratory Seminar	1
	8. Research and Development for Agro-Biomedical Science	3
	9. Basic Toxicology	1
	10. Critical Path Research Management	2
	11. Cancer Biology	2
	12. Health Care Policy and Management	1
	13. Advanced Course on Global Food Security	2
	14. Advanced Food System	2
	15. Health Service Administration	1
	16. Human Pathology and Oncology	1
	17. Global Issues and Global society: Environmental Pollution & Health Effects	1
Internship	18. Internship in Japan	3

Table 2. Curriculum at National Taiwan University

Subject Type	Subject Name	Credit
Specialized Subjects	1. Bio-entrepreneurship Training	2.0
	2. Agro-Biomedical Science Laboratory Seminar II	1.0
	3. Research and Development for Agro-Biomedical Science II	2.0
	4. Biomedical Translation Boot Camp	2.0
	5. Fusion of Field and Laboratory Studies	3.0
	6. Internship in Taiwan Ⅰ	3.0
	7. Principle and Application in Health Research Methods	3.0
	8. Environmental and Occupational Health	3.0
	9. Measuring Burden of Disease: Methods and Applications	2.0
	10. Molecular Nutrition	2.0
	11. Biotechnology in Milk Products	2.0
	12. Applied Translational Microbiology	3.0
	13. Contemporary Issues in Global Health	3.0
	14. Cellular Network of Biological Molecules	2.0
	15. Agriculture of Taiwan	2.0
Internship	16. Internship in Taiwan Ⅱ	15

Table 3. Curriculum at the University of Bordeaux

Subject Type	Subject Name	Credit
Foundation Subjects	1. Job or Internship Hunting Including Technological Watch	1.5
Specialized Subjects	2. International Scientific Seminars	1.5
	3. Integrative Unit with Omic & Bioinformatic Tools	3.0
	4. Field to Laboratory Practices with Data Management & Data Mining	1.5
	5. Water and Food-borne Microbiological Diseases and Dietary Habits in Human Population	1.5
	6. Nutrition, Microbiome and Immunity	1.5
	7. Nutrition, Physiological Regulation and Major Human Diseases	1.5
	8. Nutrition & Health Organization in Europe	1.5
	9. Impact of Environmental Stresses on Crops Production	1.5
	10. Integrated & Advanced Plant Breeding	1.5
	11. Green Biotechnology	1.5
	12. Quality of Animal-based Foodstuff	1.5
Internship	13. Internship in France	15

Education: assessment

Internal assessment

To make students familiar with faculty members and their research field, we offer an omnibus lecture course at the beginning of the program. This helps suitable matching of academic supervisors and students.

Regarding academic supervision, students are instructed by an academic supervisor at each university on their project while they stay at each university. This was fine, but there was no systematic communication between supervisors across three universities to instruct students. To make the supervision more effective, supervisors should communicate each other regularly through e-mail or tele-conferencing.

According to the students' feedback, they generally enjoyed learning together as they moved as a team from one place to another: Japan, Taiwan and France. They helped each other not only to study but also to adapt themselves to a new living and study environment every semester. This experience helped students to understand a socio-cultural diversity and to strengthen their tie.

Information on education has been provided on the website as much as possible for current and prospective students. Information will be updated as necessary.

External assessment

Level of achievement/performance:	1. Excellent	2. Good	3. Fair	4. Poor

Reviewer 1 [Good]

Regarding the committee hearing, at least twice more time should be allocated to this part.

The curriculum is structured in a very thoughtful way and appears very attractive. I appreciate the openness of the program to the students from other programs.

While overall aim of curriculum and outline of the subjects are understandable, how *each* subject is linked with the other subjects offered in the program was not so clear-cut. To

what extent the students understand such structure and the intention of the curriculum.

Evaluating student's 'practical' or 'negotiation' skills have been mentioned in the hearing. This has been and is a focus of discussions happening everywhere, and I hope the program will develop and propose a practical method to conduct this difficult task. It is expected the unique assembly of the program may lead to a new idea about non-conventional type of evaluation.

I prefer to see the concept and structure of the Agro-Biomedical Science in Food and Health will be a bit more elaborated and developed. It is certainly an interesting field, but current curriculum seems mostly reflecting the industry's perspective in developed country. There was not so much reference to such issues as environment-food-water-energy nexus, food security, land-use issue, etc., which are, for me, global issues that should be dealt under scientific field with this name.

Reviewer 2 [Excellent]

The GIP-TRIAD places a great emphasis to ensure that teaching and learning are comparable and equivalent across three university campuses. This is reflected by constant communications through face-to-face meetings at least annually at each university and countless on-line meetings or emails among GIP faculty members, administrative staff, and students. Most importantly, high satisfactory scores on quality of teaching were also indicated in the students' survey.

Reviewer 3 [Excellent]

The education program consists of 3 semesters realized in the 3 universities and a 4th semester of internship, which is very relevant. Students benefit from a personalized program, which is adapted to their professional project and well presented to them at the beginning of each semester. They have also academic mentors. The program of lessons is excellent. There is no doubt that students enjoy optimal conditions for training and becoming leaders in their specialties. It is not clear whether students have foreign language courses other than English. This could encourage them to start their career in Japan, Taiwan or France, whatever their university of origin, and also to make them becoming ambassadors for cooperation between the 3 countries.

Student support

Since the program requires students to move around the three universities by semester and get used to the environment at each university, the three university provide students with best possible supports as described below.

Visa application (before arrival)

The GIP-TRIAD administrative office of each university helps students to obtain student visa.

Civil and student registration

The GIP-TRIAD administrative office of each university helps students to make civil and student registration as required at each university and place.

Accommodation

Each university prepares on-campus (or near campus) accommodations at a reasonable cost for each individual student.

Health and travel insurance

Students are advised to purchase health and travel insurance that covers both home country and abroad, complying with the regulation of each university.

Scholarship

The GIP-TRIAD administrative office in each university provides students with information of scholarship they can apply for and encourages them to apply for it.

Welfare services

The GIP-TRIAD administrative office in each university provides students with information of welfare services that are available for the students in each university such

as a gym, swimming pool, and student clinic.

Other support

If students need any support other than those mentioned above, they can consult not only the GIP-TRIAD administrative office in each university but also the faculty members of the GIP-TRIAD in charge of student support.

Student support: assessment

Internal assessment

To date, no major trouble or difficulties have been reported among GIP-TRIAD students during their stay in the three universities. Generally, they enjoyed studying and living together as a team. This may be partly because each student was assigned with a student tutor (who is a classmate of the GIP-TRIAD) as well as a faculty mentor to help get one's academic and student life off to a smooth start. Japanese students became tutors for the students from Taiwan and France while studying in Japan, and in turn, Taiwanese and French students did in Taiwan and France, that worked very well to meet their demands with necessary support. As a result, students' tie has been further strengthened.

Regarding financial support, students have successfully received the scholarship. For example, 11 out of 13 first-batch students received JASSO (Japan Student Services Organization) scholarships in 2017, and 8 out of 11 second-batch students in 2018.

The accommodation provided at each university is good enough according to the students, but some lectures are given at a different campus and access to the campus is not so good, they said. At a moment, there is no solution but we will consider whether utilization of a tele-conferencing system can help.

Information on student support has been provided on the website as much as possible for current and prospective students. Information will be updated as necessary.

External assessment

Level of achievement/performance:	1. Excellent	2. Good	3. Fair	4. Poor

Reviewer 1 [Excellent]

Student support sounds very good, or, too good, perhaps. It is appreciated to promote the mutual communication between the local community and students, for example. Since such kind of activities have been already implemented in the program, keeping them is highly recommendable.

Reviewer 2 [Excellent]

The GIP-TRIAD demonstrates a strong commitment to supporting its students with excellent services, facilities, tutor and language programs, and financial assistances. With well-stablished mechanism now in place, the GIP-TRIAD Program Directors and all of staff and faculty members are to be congratulated for their provision of excellent student support on all three university campuses.

Reviewer 3 [Excellent]

Moving from a country to another one every 6 months is an exceptional chance for students, but also a source of administrative, living and financial difficulties. The GIP-TRIAD has very well provided the necessary support for students, facilitating administrative formalities, housing, and giving the possibility to apply for scholarships. Regarding financial issues, not all students receive a scholarship, which could prevent students from applying to the Master. A possibility might be to solicit companies to sponsor the program or any other source of funding to support students who have not been awarded a scholarship.

Career development

To support students' career development, all students are required to take an internship at any public or private institutions in order to experience professional climate and culture through a hands-on internship. As part of the training, students have to communicate with the institutions in order to plan their internship.

Confidential references (Appendix 3)

- A sample of an internship report
- A sample of assessment from institutions/corporations
- A sample of students' presentation materials

Career development: assessment

Internal assessment

All 13 students (first batch) have taken an internship in the fourth semester: 3 Japanese and 1 Taiwanese students in Japan, other 4 Taiwanese students in Taiwan, 4 French students in France and 1 French student in Switzerland. While the faculty members support students to find the institutions/corporations for an internship, students themselves took initiatives in seeking for internship opportunities by contacting the institutions/corporations. This process was also a good training for them to learn business manners. Yet, the faculty members will continue to help students find further internship opportunities. All students who followed Internship in Japan completed their internship by the end of April 2019. The program held the presentation session of the students on 15th May. The program also requested a self-evaluation sheet to the students and a student-evaluation sheet to the host organizations/company, respectively. The host organizations/company positively evaluated both of the internship activities and the trainees. The program will make a final evaluation of the internship considering those results comprehensively.

External assessment

Level of achievement/performance:	1. Excellent	2. Good	3. Fair	4. Poor

Reviewer 1 [Good]

This part of the program is also very interesting. It sounds like a big experiment design with a 'no-regrettable' policy.

Reviewer 2 [Excellent]

The GIP-TRIAD has demonstrated a strong commitment to students' career development by preparing students for internship and job hunting. Faculty members are committed to help students to find their interests and personal strengths. There are a wide range of internship opportunities for GIP students in all three campuses and beyond.

Reviewer 3 [Excellent]

Students are trained throughout the program to design their professional project and they

have support from academic supervisors to find their 4th semester internship. They have the opportunity to visit many companies and laboratories and to communicate with professionals. Their level of preparation for their professional career is already excellent. It could be considered to assign a professional mentor, which they could meet 2 to 3 times during the Master. A professional mentor could provide the student with specific advice to prepare its career.

Way forward

Further remarks by external reviewers

To its great credit, GIP-TRIAD has taken all conceivable steps to ensure that the quality of educational opportunities (i.e., curriculum policy, academic supervision, and student support including mentorship, campus accommodation, and career development across 3 universities) are top-of-line among international educational programs. The GIP-TRIAD Program Directors and all of faculty members are to be congratulated for their vision, commitment, and tireless efforts.

As an external reviewer, my below commendations recognize practices of high quality, and its suggestions are offered with the goal of ensuring that the program achieves the highest levels of quality consistent with internationally recognized standards and with the 3 universities' aspirations as expressed in its mission, goals, and objectives.

Suggestion 1: While the program management is appropriate, the GIP-TRIAD may wish to consider involving students (or alumni) and external stakeholders (i.e., human resource executives from public or private sectors) more actively in its further development and evaluation processes.

Suggestion 2: GIP-TRIAD may wish to consider establishing a mechanism to recruit students locally and internationally to ensure the influx of high-quality student as well as tuition and fees, thus program is sustainable.

Commendation 1: GIP-TRIAD is commended for its provision of diverse curricular/extra-curricular activities and culturally-rich learning experiences. Students have met an expected learning achievement, reporting high satisfactions.

Commendation 2: GIP-TRIAD is commended for its provision of excellent academic supervision and student support including mentorship, student advisory, and administrative assistance on all three university campuses.

Our response

Based on internal and external assessment, the University of Tsukuba, National Taiwan University and the University of Bordeaux have discussed the way forward of the program, and further reviewed the status quo of the program. The following is our response to the assessment.

- To make sure that students understand the course structure and the linkage across diverse subjects, Initiation Seminar (1 day) is offered in the beginning of the first semester at the University of Tsukuba. We also conduct a series of group works (2 weeks) and academic excursion to corporations and research institutions (2 to 3 days) that are intended to help students understand the objectives of the program and what they need to study in the coming two years of the program. We will add these introductory activities (that have been conducted) to the regular curriculum as credit courses.

- To assist students to develop their practical and negotiation skills, we offer an opportunity of experience-based learning through entrepreneurship training, corporate internship, and the fusion of field and laboratory studies. Group works in the beginning of the first semester play an important role of facilitating students to get familiar with experience-based learning. We recognize that these activities are not sufficient enough for students to develop their skills, and we are still exploring how to develop such skills effectively. As advised, we will try to find a non-conventional way of evaluating these skills through this process.

- To elaborate the concept of “Agro-Biomedical Science in Food and Health”, we will expand its scope to the nexus of environment-food-water-energy, food security, and land-use issues that are essential to that concept but are not well taken into account in the program structure. We will consider to collaborate with other degree programs such as a Master’s program in environmental sciences to that end.

- Bearing in mind that students in GIP-TRIAD play an important role as cultural and academic ambassadors across Japan, Taiwan, and France, we encourage the students to learn local languages. In fact, the students are given a chance to learn them in each university. For example, the language center at the University of

Tsukuba offers Japanese language classes in the first period of the classes every day, so our program does not have any classes in the first period, allowing the students to attend the language class. Some students are highly motivated to learn the foreign language. In fact, one of the past students from Japan went to Taiwan after completing of the program to learn Chinese.

- To increase the number of applicants, we will advertise GIP-TRIAD among students irrespective of their background. While this might be contradictory to the admission policy of the program, we would ensure that students without background in medical or agricultural science have a chance to learn necessary knowledge and skills through remedial education before the commencement of the program. Fortunately, GIP-TRIAD has increased its popularity, and the number of students from the University of Tsukuba will be the same as that of National Taiwan University and the University of Bordeaux among the next batch in 2020/21.

- To ensure a smooth process of entrance examinations jointly organized by the three universities, each university share application documents and other relevant information with two other universities in a timely manner.

- To make our student support better, we will strengthen the relationships between students, faculties, and staff across the three universities, through regular discussion and information exchange, not only on academic affairs but also about daily life in each university.

- To strengthen career development, it is preferable that students are supervised by not only academics but also professionals. Unfortunately, there are certain limitations to hire professional mentors from external organizations for each student. Yet, students have a chance to meet business professionals in their lectures. We would consider appointing an internship advisor from among them who can be consulted by students.