

Curriculum Handbook 2023

(Spring Students)



Curriculum Handbook v1.8

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1 Curriculum Overview

The Discovery Program is a multi-disciplinary, open curriculum program. You can select courses from a wide range of disciplines, combining them to fit your own academic interests and future goals. This handbook contains an overview of the Discovery Program's curriculum, such as information and regulations regarding coursework, graduation, and advising. Read this handbook carefully before building your own curriculum in consultation with your advisors.

1.1 Tracks

The Discovery Program offers two educational tracks defined by where you will complete your Senior Project in your final year. You cannot pursue both tracks. You must choose one of the two tracks at the end of your first year.

- ❖ Discovery Track (English-based Discovery Track, a.k.a. "DT"): You will conduct your Senior Project with a faculty member of the Discovery Program. In order to prepare for your Senior Project, you mainly take courses offered by the Discovery Program in English. (Advanced Japanese Proficiency is required for study in the DT Transdisciplinary Sciences for Global Sustainability cluster.)
- ❖ Matching Track (Japanese-based Open Track, a.k.a. "MT"): You will conduct your Senior Project with a faculty member outside the Discovery Program. In order to prepare for your Senior Project, you mainly take courses offered by respective departments in Japanese. *

* Generally, very high level of Japanese language proficiency (such as N1 level of Japanese Language Proficiency Test (JLPT)) is required to take courses outside the Discovery Program.

NOTE: DT students can also take courses offered outside the Discovery Program in Japanese and MT students can also take courses offered by the Discovery Program in English as long as they meet the expectation of each course instructor.

1.2 Advisors

Multiple advisors will support you in different aspects of university life.

- ❖ Academic Advisor: aids you with matters pertaining to your program of study.
- ❖ Mentor: aids you with matters pertaining to university life. Your mentor is also your language advisor.

- ❖ Matching Advisor: assists you if you wish to pursue the Matching Track, and coordinates with departments outside the Discovery Program.
- ❖ Departmental Advisor: aids you if you are a Matching Track student in selecting courses in the department¹ where you wish to conduct your Senior Project.
- ❖ Senior Project Advisor: supervises your Senior Project in the final year of your study.

¹ For the purpose of this handbook, the Discovery Program use the term “department” to refer to Schools, Faculties, Departments, and Program within Okayama University.

2 Deciding on Your Field of Study

Unlike other departments where curriculum is mostly predetermined based on an academic major, the Discovery Program allows you to design your own program of study. To help you narrow down your field of study and achieve specialization in timely manner, the Discover Program has set several milestones (See Figure 1).

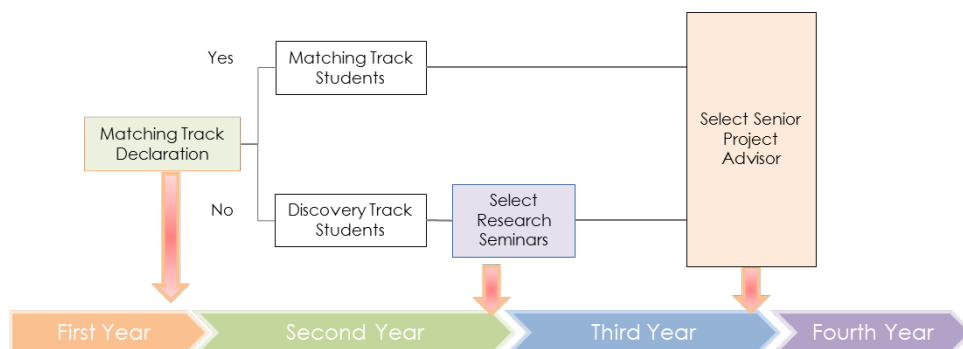


Figure 1. Timeline for Selecting Your Field of Study

Matching Track Declaration: If you wish to pursue the Matching Track, you should declare your intent to do so by the end of your first year. You must also declare the “major department” at this time. The major department is defined as the department in which you will complete your Senior Project. In order to pursue the Matching Track, very high level of Japanese language proficiency is necessary as you will be conducting most of the coursework in Japanese. Some departments may also require you to take specific courses from the first year.

Consult your Academic Advisor and Matching Advisor as early as possible so that they can start negotiating with the host department for you. Also, formulating your plan of study early is important to ensure that you achieve the level of expertise and knowledge on par with the students of that department.

- 🚦 Students who make no declaration for the Matching Track remain in the Discovery Track, but they will be asked to identify their intended area of focus at the end of their first year.

Choosing Research Seminars (Discovery Track students): You will start enrolling in Research Seminar in your third year. You may register and earn credits for multiple Research Seminars (up to 10 credits).

- 🚦 You must understand prerequisites for Research Seminars. The information is available at Bulletin Board on Moodle.

Choosing Senior Project Advisor (All students): You will select your Senior Project Advisor and obtain his/her approval by the end of your third year. Faculty members have the right not to

accept a student who does not complete prerequisites to conduct Senior Project with them. Furthermore, because each faculty member sets a capacity on the number of students that they are able to advise in a particular year, your first choice of Senior Project Advisor might not be available to supervise you. Thus, you are strongly advised to consider at least two faculty members for your senior project advisor candidates and register for the prerequisite courses stipulated by each faculty member well in advance. Finally, communicate with faculty members well in advance to make sure you meet his/her requirements.



You must understand prerequisites for Senior Projects. The information is available at GDP Bulletin Board on Moodle.

3 Graduation Requirement

To graduate, you must earn at least 124 credits. The breakdown of the number of credits you need to accumulate for each course category is shown in Table 1.

Minimum of 124 Credits

Table 1. Graduation Requirement

Course Category			必修 (Hisshuu) Required	選択必修 (Sentaku Hisshuu) Required Elective	自由選択 (Jiyuu Sentaku) Elective	Total
教養教育科目 (Kyoyo Kyoiku) General Education Courses			3	11	14	28
専門教育科目 (Senmon Kyoiku) Major Education Courses	専門基礎科目 (Senmon Kiso)	共通セミナー Common Seminars	3	-	61 (※2・3)	80
		基礎科目 Basic Courses	-	6 (※1)		
	Major Foundational Courses	アカデミック英語 Academic English	-			
		アカデミック日本語 Academic Japanese	-	-		
	専門科目 (Senmon Kamoku) Major Courses	基本科目 (Kihon) Fundamental Courses	-			
		課題科目 (Kadai) Subject-Specific Courses		-		
		実践科目 (Jissen) Practicum Courses	-	-		
		卒業研究科目 (Sotsugyo Kenkyu) Senior Project	10 (※4)	-		
専門教育科目 又は 教養教育科目 (Senmon Kyoiku or Kyoyo Kyoiku) Major Education Courses or General Education Courses			-	-	16 (※5)	16
Total			16	17	91	124

※1 Must include 3 or more credits from Basic Courses.

※2 Credits acquired in 専門基礎科目 (Senmon Kiso) Major Foundational courses offered by other departments, that are conducted as 教養教育科目 (Kyoyo Kyoiku) General Education Courses, can be included here.

※3 Credits acquired in 専門教育科目 (Senmon Kyoiku) Major Educationo courses offered by faculties other than the Program shall be counted towards 課題科目 (Kadai) Subject-Specific courses.

※4 "Senior Project" (10 credits) is a compulsory subject.

※5 Credits earned for Japanese and/or English language courses in 教養教育科目 (Kyoyo Kyoiku) General Education can be included here.

NOTE:

- ❖ Required: All students must complete.
- ❖ Required Elective: A student must earn a given number of credits from a specified course category.
- ❖ Elective: All other credits a student earned in each category.

4 Course Categories

At Okayama University, courses are divided into two categories: *Kyoyo Kyoiku* (General Education Courses) and *Senmon Kyoiku* (Major).

IMPORTANT: Credits accumulated under *Kyoyo Kyoiku* category do not carry over to *Senmon Kyoiku* category, and vice versa. However, depending on your chosen curriculum, you may need to take some courses (e.g. prerequisites for *Senmon* courses in science) even if the credits earned may exceed the required number of credits.

4.1 教養教育科目(*Kyoyo Kyoiku*) General Education Courses


Kyoyo Kyoiku (a.k.a. “*Kyoyo*”), or “General Education Courses” in Okayama University’s official terms, is a category of courses that are designed to offer you a wide variety of fields and knowledge. You are required to earn a designated number of credits from the subcategories shown in Table 2:

Table 2. Subcategories of *Kyoyo Kyoiku* Courses

Course Categories	Description	Required	Required Elective	Elective	Total
導入教育科目 (Courses for Introductory Education)	Orientation courses	2			2
知の理解科目 (Courses for Developing Intellectual Understanding)	Introductory courses in each academic discipline		4	14	26
実践知・感性科目 (Courses for Developing Practical Knowledge and Sensitivity)	Art and Practice courses				
汎用的技能と健康科目 (Courses for Developing General Skills and Health)	Information and Communication Technology	1			
言語科目 (Language Courses)	Language courses		6		
高年次教養科目 (General Education Courses for Senior Undergraduate Students)	<i>Kyoyo</i> courses taken in your 3 rd year or above		1		
Total		3	11	14	28

4.1.1 All Kyoyo courses offered by Discovery faculty members are in English. Some other Kyoyo courses in English may be available through other departments, such as EPOK Program (For details, see *General Education Courses Study Guide and Class Timetable*).

NOTE: Okayama University students are divided into three groups according to their departmental affiliation in order to facilitate even distribution of students in Kyoyo courses. For this purpose, Discovery students are grouped with Life Science students (生命系 Seimei kei).

 Lottery system is used to decide who can register for some of the courses. For further detail, see Bulletin Board located in General Education Building A-C, 1st Floor.

4.1.2 General Education Courses for Senior Undergraduate Students have been set to provide the knowledge and skills necessary for third-year and fourth-year (senior undergraduate) students. The catalogue for “General Education Courses for Senior Undergraduate Students” courses offered by each department will be posted by the end of the previous academic year.

Discovery Track (DT) Students should register for the “General Education Courses for Senior Undergraduate Students” course offered by the Discovery Program.

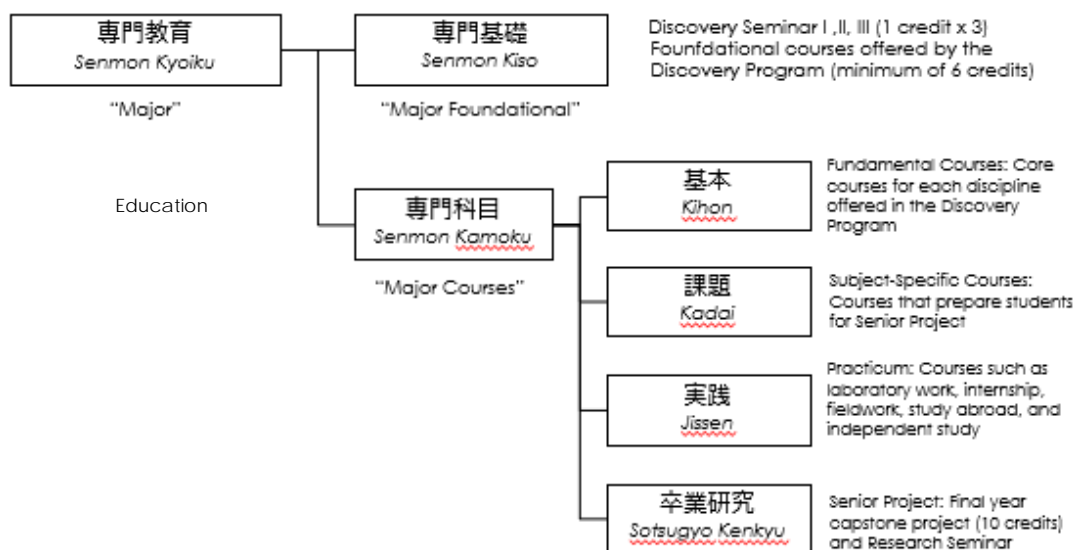
Matching Track (MT) Students should register for the “General Education Courses for Senior Undergraduate Students” course in the department where they plan to conduct their Senior Project. If MT students are unable to register for courses through the online academic affairs system for any reason, they should contact the Discovery Office before courses begin to be registered manually.

※ MT Students who are unable to register for courses in the department where they plan to conduct their Senior Project due to unforeseeable circumstances will be allowed to register for the Discovery course, pending the permissions of the course instructor, their Academic Advisor (AA), and Matching Advisor (MA). In this case, a request should be submitted to the Discovery Office before the course starts.

4.2 専門教育科目(*Senmon Kyoiku*) Major Education Courses

Discipline-specific courses offered by each department and the Discovery Program are called *Senmon Kyoiku* (a.k.a. “*Senmon*”), or “Major Education” in Okayama University’s official terms. At the Discovery Program, this category is further divided as follows:

Figure 2. Categories of *Senmon Kyoiku* Courses



4.2.1 専門基礎科目 (*Senmon Kiso*) Major Foundational Courses

Minimum of 9 Credits

Senmon Kiso, or "Major Foundational" courses in Okayama University's official terms, are introductory courses offered by each department to their own students in order to expose them to a variety of sub-disciplines within a department. As the Discovery Program is a multi-disciplinary program, you are encouraged to take courses across a wide range of academic disciplines.

This category also includes Discovery Seminars I, II, and III, Basic Courses, Academic English courses, and Academic Japanese courses. You must earn minimum of 9 credits, including 3 credits from Discovery Seminars and at least 3 credits from Basic Courses.

Table 1 *2

Some of the *Senmon Kiso* courses offered by each department are categorized as *Kyoyo* when taken by students who belong to other departments. For Discovery students, credits earned in such courses can be applied toward *Jiyu Sentaku* (Elective) credits under *Senmon Kyoiku*.

4.2.2 専門科目(*Senmon Kamoku*) Major Courses

In *Senmon Kamoku*, or "Major Courses" in Okayama University's official terms, you will get into the crux of specific field of studies at undergraduate level. As a Discovery student, you have

the privilege of selecting one or more major fields of study depending on the desired topics, approaches, and the department in which you will conduct your Senior Project.

The Discovery Program *Senmon Kamoku* are further divided into *Kihon* (Fundamental) courses, *Kadai* (Subject Specific) courses, *Jissen* (Practicum), and *Sotsugyo Kenkyu* (Senior Project).

4.2.2.1 基本科目(*Kihon*) and 課題科目(*Kadai*) Fundamental Courses and Subject-Specific Courses

Table 1 *3

Kihon courses and *Kadai* courses are the Discovery Program's own categories. When you enroll in *Senmon Courses* offered by other departments, the credits earned will be counted as *Kadai* courses (see Table 1).

4.2.2.2 実践科目 (*Jissen*) Practicum Courses

Table 1

Practicum includes courses that involve hands-on training and practical experiences, such as laboratory work, internship, fieldwork, study abroad, and independent study. Practicum is also the Discovery Program's own category. Some courses offered by other departments may also qualify for this category. You may take Practicum courses starting from the long break—spring or summer break—prior to the beginning of your second year. Consult your Academic Advisor for further information.

4.2.2.3 卒業研究 (*Sotsugyo Kenkyu*) Senior Project

10 Credits

Research Seminars give you an opportunity to narrow down a topic of your interests and appropriate research methodologies in preparation for your Senior Project. You may take up to two Research Seminars during the first half of your third year to explore with whom you would like to work on your Senior Project. After Term 3 of your third year, you are supposed to take your future Senior Project Advisor's Research Seminars only.

Senior Project is a year-long capstone project in which you will conduct a research/project in the field of your interest. It is an opportunity for you to integrate what you have learned at Okayama University.

Table 1 *4

You will register for the Senior Project course at the Discovery Program regardless of your chosen track.

TO START your Senior Project, you must:

- ❖ find a faculty member who agrees to supervise your Senior Project
- ❖ have accumulated at least 92 credits* including 2 Required credits and 4.5 Required Elective credits from *Senmon Kiso*

Please note the following:

In the case where students have not completed the prerequisite courses stipulated by a faculty member, or in the case where multiple students apply to have the same Senior Project Advisor, students are not allowed to conduct their Senior Project with their first choice of Senior Project Advisor. Therefore, students are strongly advised to consider at least two faculty members when selecting their Senior Project Advisor and complete the prerequisite courses stipulated by each faculty member accordingly.

*If you are a Matching Track student, follow the rules set by your host department.

Discovery Track students: You will conduct your Senior Project under one of the Discovery faculty members. The medium of instruction is English. The final product can be in the form of a thesis, business proposal, and visual product, such as videos, photos, and art pieces, accompanied by written documents (in English) explaining them. Consult your Senior Project Advisor to choose the most appropriate medium for your final project.

Matching Track students: Each department has its own criteria for Senior Project. You should follow the protocol of the department in which you pursue your Senior Project.

Presenting Senior Project: In the final academic term, you will make an oral presentation on your Senior Project in English in front of your peers and faculty members regardless of your chosen track. Discovery Seminar III will prepare you for your final presentation.

5 Features Specific to Discovery Courses

There are several features particular to Discovery Courses (the courses offered by the Discovery Program).

5.1 Discovery Core Courses

5.1.1 Discovery Seminars (a.k.a. “D-Seminars”) (Required)

D-Seminars are some of the few courses all Discovery students are required to take. Here, you study with students who may come from very different backgrounds and have different academic interests. Taken in your first year, D-Seminars I and II are designed to nurture intercultural understandings and academic skills. In the final year of your study, D-Seminar III allows you to reconnect with the members of your cohort and share the knowledge and insight gained by studying in different disciplines. These courses form the core components of the Discovery Program, nurturing its core spirit, which includes appreciation for diversity and sustainability, entrepreneurship, and inter-disciplinary approaches.

5.1.2 Academic English

The Discovery Program provides academic English classes specifically designed to equip you with the language ability and academic skills necessary to complete coursework in English. These courses will help you develop both the language competence and intercultural communication skills needed to carry out your Senior Project in your fourth year. You will meet regularly with the English language advisor to evaluate your strengths and weaknesses, and to develop a personal study plan to suit your needs and goals.

5.1.3 Academic Japanese

For those students whose first language is not Japanese but seek to pursue the Matching Track, the Discovery Program provides academic Japanese classes specifically designed to equip the students with the language ability and academic skills necessary to complete coursework in Japanese offered in departments outside the Discovery Program.

5.2 Prerequisites

Discovery students arrive with diverse educational backgrounds and life experiences. In order to enable flexible and incremental coursework, the Discovery Program has adopted a prerequisite system. Prerequisite courses specify what knowledge and skills you should have before taking more advanced courses. Consult the “Prerequisite Maps” and “Course

Descriptions” as well as the online syllabus posted for each course to carefully to plan ahead on how you would like to build your coursework.

5.3 Cluster and Modules

Discovery courses are roughly divided into three clusters. Each cluster is divided into modules to help you understand which courses have closer affinity to each other.

❖ Cluster: consists of a set of courses from related disciplines. Three clusters are:

- Transdisciplinary Sciences
- Social Innovation and Entrepreneurship
- Cultural Diversity and Communities

❖ Module: a sub-set of courses within a cluster that share similar subject matters.

NOTE: Clusters and modules are there only to help you identify related courses, not to confine you to one of them. Combining courses in different clusters and modules is strongly encouraged.

6 Coursework and Registration

6.1 Course Load and Credit Cap

Course load is the number of credit hours you will enroll in one academic term (7 weeks + 1 week (Exam)). Consider your other commitments and extracurricular activities carefully to decide on the course load most appropriate for you.

At Okayama University, 1 credit corresponds to 45 hours of study time. The number of hours spent in-class and outside the classroom will depend on the course type (see Table 3).

Table 3. Credit Calculation

	In-Class (hrs)	Assignments, Preparations, and Reviews (hrs)
Lecture	15	30
Seminar	15 - 30	30 - 15
Laboratory work and Practical Training	30 - 45	15 - 0

🚧 Senior Project does not follow this general rule. 10 credits are granted for the tasks necessary to complete a Senior Project.

6.1.1 Guideline in Deciding on Course Load

Rule of Thumb: 1 credit corresponds to at least 6 hours of total study time per week

e.g. 1 credit (lecture) = (2 hours in-class/week + 4 hours self-study time/week) x 7.5 weeks = 45 hours.

Examples of Weekly Workloads

8 credits = 6 hours total study time per week/credit x 8 credits = 48 hours/week

10 credits = 6 hours total study time per week/credit x 10 credits = 60 hours/week

REMEMBER: There are 24 hours per day, and you also have to eat and sleep!

6.1.2 Credit Cap

The maximum number of credits you can register is capped at 50 credits per year (4 terms). However, most Academic Advisors will recommend you to take less than 10 credits per term.

*For cap removal, consult Article 4 <Credit Cap> of the "Bylaws Regarding Curriculum" of the *Discovery Program Rules & Regulations*.

6.1.3 Minimum Cumulative Number of Credits

The Discovery Program has the minimum cumulative number of credits expected to be earned by the end of each academic year as stated below.

By the end of 1st year: 25 credits

By the end of 2nd year: 55 credits

By the end of 3rd year: 92 credits including 2 required credits and 4.5 Required Elective credits from *Senmon Kiso*

Note: The minimum cumulative number of credits are used to assess the eligibility for scholarships at Okayama University. Also, to start Senior Project you must earn 92 credits including 2 required credits and 4.5 Required Elective credits from *Senmon Kiso* by the end of your third year.

6.2 Course Registration

6.2.1 Course Search

- Okayama University Syllabus Search Engine

Okayama University's syllabus database can be accessed at the following URL:

<https://kyomu.adm.okayama-u.ac.jp/Portal/Public/Syllabus/SearchMain.aspx>

Most of the Discovery Courses have prerequisites.

6.2.2 Course Registration

- Okayama University Academic Affairs System (a.k.a. "GAKUMU System")

To register for courses, go to Okayama University GAKUMU System at the following URL:

<https://kyomu.adm.okayama-u.ac.jp/portal/>

See *GAKUMU System Handbook* for further assistance.

NOTE: You can register for courses online under the following conditions:

- ❖ It is possible to register online off campus by logging in to the school system.
- ❖ In principle, it is possible to register at any time of the day (24-hour access); however, there may be instances where the system is offline for a short period of time to conduct maintenance.
- ❖ The Registration Period for each term is announced on the bulletin boards.
- 📌 During the Registration Period, you may add or drop courses. See "Bulletin Board" (10.1.1).
- 📌 During the Modification Period, you may only drop courses.
- 📌 Make sure you plan ahead and complete course registration during the designated period for each term. Changes requested beyond the designated

periods will NOT be accepted (with an exception of medical or other emergency scenarios). Failure to register or drop courses during the designated period can jeopardize your academic progress and/or GPA.

- ✚ If you wish to register for *Senmon* Courses offered by other departments, please visit the Discovery Office and complete the documentation process during the Registration Period after (1) consulting your Academic Advisor, and (2) getting an approval from the course instructor. For more details, see 6.2.3 below.

6.2.3 Enrolling in Courses Offered by Other Departments

If you wish to enroll in a course offered by other departments, please follow the steps below:

- 1) Pick up 「他学部専門教育科目履修届」 (registration form for *Senmon* Courses offered by other departments) from the Discovery Office and fill out the form except for 「担当教員許可印（又はサイン）」 (course instructor's signature) and 「登録確認欄」 (registration completion mark) sections.
- 2) Email the instructor of the course of your interest (you can find the email address on the syllabus), and express your wish to enroll in the course, prior to the first class.
- 3) During the first class, introduce yourself to the course instructor once again and get the signature from the course instructor on the form.
 - a. For variety of reasons (e.g., enrollment size, prerequisites needed, resource limitation, etc.), course instructors may not approve your enrollment.
 - b. You may or may not hear back from the course instructor prior to the first class. Even if you did not hear back, go to the class and introduce yourself again.
- 4) By logging on to the GAKUMU System, register for the course which you have been given permission to take. On the following day, review your timetable in the GAKUMU System, and if you can locate the approved course appearing properly, put a check mark in 「登録確認欄」.
- 5) Submit 「他学部専門教育科目履修届」 to the Discovery Office during the registration week.

7 Grading System, Academic Integrity, and Credit Transfers

7.1 Grades

The Grading System at the Discovery Program follows the standards of Okayama University.

Table 4. Grading Scale

Letter Grade	GP	Number Grade	Standards
A+	Refer to GP Calculations	90 - 100	Excellent - Student met all of the assessment criteria at a very high standard; outstanding performance.
A		80 - 89	Very good – Student addressed all assessment criteria and met several at a high standard
B		70 - 79	Good – Student addressed all assessment criteria and met most criteria reasonably well.
C		60 - 69	Satisfactory – Student met minimum criteria.
F	0	0 - 59	Fail – Student fails to meet the minimum requirements. (credit(s) not granted)
W	N/A	N/A	Withdraw after registration
Certified	N/A	N/A	1) Credit(s) granted for courses taken prior to entering Okayama University 2) Credit(s) granted at other educational institutions that may be considered appropriate.
Pass	N/A	N/A	Applies to courses offered at Okayama University that are not suitable for assigning number grades, or courses in which credit(s) are granted for an attainment of course goals.
Fail	N/A	N/A	Failure to attain the goals in courses in which number grades are not assigned.

At Okayama University, Grade Point (GP) is calculated using the following equation:

$$GP = (\text{Number Grade} - 55) / 10$$

Similarly, GPA is calculated using the following equation:

$$GPA = \frac{\text{Sum of (GP} \times \text{Credits for Each Course)}}{\text{Total Registered Credits}}$$

ATTENTION: Your GPA is calculated with the total number of credits REGISTERED. All grades including "F" will be counted towards your GPA, even though you will not earn the credits.

Please plan and register for courses carefully so as not to overload your coursework.

Some of the courses offered outside the Discovery Program in two consecutive terms have strong continuity. For these courses, a student who receives a failing grade in the first course may be given an "H (Hold)" if he or she enrolls in the second course. If the student receives a passing grade in the second class, a "C" grade (60%) will be given for the first class.

7.2 Academic Integrity

The Discovery Program takes issues of academic dishonesty, including plagiarism and cheating, very seriously. Penalties for academic dishonesty may include failing an assignment, test, the course, or all the courses registered during that academic term. Academic dishonesty may be grounds for expulsion from the University.

Plagiarism includes but is not limited to the following:

- ❖ Submitting work, either in part or in whole, completed by someone else.
- ❖ Submitting direct quotes from an outside source without acknowledging the source.
- ❖ Failing to acknowledge ideas, statements, facts, or conclusions that belong to another.
- ❖ Close and lengthy paraphrasing of the writing of another.
- ❖ Submitting papers purchased from research companies as one's own, original work.

Cheating includes but is not limited to the following:

- ❖ Copying, in part or in whole, from another student's test or assignment.
- ❖ Using notes or other devices during a test not permitted by course instructors.
- ❖ Falsifying records, laboratory work, or other course data.
- ❖ Submitting work previously submitted in another course without the permission of the instructor.
- ❖ Knowingly assisting another student in any of the above.
- ❖ See "Rules Regarding Examination" of the *Discovery Program Rules & Regulations* for further details.

If you have questions or concerns as to what constitutes academic dishonesty, please contact your instructor.

7.3 Credit Recognition and Transfers

7.3.1 Courses Outside of the Discovery Program

Whether pursuing your degree in the Discovery Track or the Matching Track, you may enroll and earn credits for courses outside the Discovery Program if you meet certain conditions. See your Academic Advisors for more information.

7.3.2 Recognition of Credits based on External Language Proficiency Test Scores

The Discover Program may grant credits based on external language proficiency test scores for select languages under limited circumstances. Please refer to the General Education Courses Study Guide (Japanese) section 2-6-3 for further detail. If you think you have a test result that satisfies the criteria, please consult your Academic Advisor before filling out the application form available at the Discovery Office. *This credit recognition does not apply to students who were admitted to the program prior to Summer 2019.

7.3.3 Courses Outside of Okayama University

In some special circumstances (see below), credits received outside of Okayama University may be petitioned, and if approved, counted towards your graduation requirement (up to 60 credits).

- ❖ University-level credits earned prior to entering Okayama University
 - University-level credits earned prior to entering Okayama University may be transferred as Kyoyo credits. If interested, please complete the petition forms by the end of your first term at Okayama University. For more information, consult your Academic Advisor.
- ❖ University credits earned during study abroad
- ❖ Credits earned at other educational institutions with which Okayama University has a mutual relationship (e.g. University Consortium Okayama)

For more information, see Article 5 <Courses Offered by Other Universities &c.>, Article 6 <Courses Offered by Education Institutions &c. Other than Universities>, and Article 7 <Transfer of Credits Accumulated Prior to Admission to the Program> of the “Bylaws Regarding Curriculum” of the *Discovery Program Rules & Regulations*.

8 Early Graduation

The Discovery Program may permit early graduation (duration of 3.5 years) for students with a strong academic standing (GPA 3.50 or higher). If you are considering early graduation, consult your Academic Advisor at an earliest opportunity.

For more information, refer to Article 10 <Early Graduation> of the “Bylaws Regarding Curriculum” of the *Discovery Program Rules & Regulations*.

9 Grades Notifications, Grade Appeal, and Parental Reports

9.1 Grades and Transcripts

Your grades can be viewed on the GAKUMU System. The release date will be notified on the bulletin board. You may also access your grades from networks off campus.

9.2 Certificate Issuing Machines

Transcripts and other documents may be printed using Certificate Issuing Machines on campus.

Documents issued by Certificate Issuing Machines are:

- Academic Performance Certificate (Official Transcript)
- Enrollment Certificate
- Expected Graduation Certificate
- Medical Checkup Certificate
- Student Discount Certificate

Certificate Issuing Machines are located at:

- General Education Building A, 1st Floor
- Peach Union Entrance Hall

9.3 Grades Appeal

If you have any questions or doubts regarding your grades, you can request the course instructor's explanation. You can also file an appeal to the Discovery Program within a deadline. See "Grades Appeal" section of the *Discovery Program Rules & Regulations* for further information.

9.4 Notification of Grades to Parents/Guardians

Okayama University offers the service to send your grade report to your parents/guardians. If you would like to opt out from this service, please see Academic Affairs of the Discovery Office.

10 Miscellaneous

10.1 Leave of Absence or Withdrawal

If you are considering taking a leave of absence or withdrawing from Okayama University, please consult your Academic Advisor, Mentor, and the Discovery Office well in advance. In order to proceed, several paperwork needs to be completed at least one month prior to the day of the leave or the withdrawal.

10.2 Additional Sources of Information

10.2.1 Bulletin Board

Important announcements and notices are posted on the bulletin board found in the following areas:

- *Discovery Program Bulletin Board* on MOODLE (Discovery students only)
- General Education Building A-C, 1st Floor
- Global Study Lounge (General Education Building D, 2nd Floor) *
- University Union, 1st Floor
- (Additionally, Matching Track students should consult their host departments)

🚪 The Global Study Lounge is a common study room for the Discovery students and the Global Human Resource Development (a.k.a. "G-Course") students. Open Hours: 8:00 am – 8:00 pm on weekdays. When using the room, please follow the rules posted on the bulletin board located in the lounge.

The bulletin boards may include information on:

- Class Cancellation and Make-up Class
- Course Registration
- Scholarships
- Qualification Test
- Language Proficiency Exam
- Study Abroad
- Internships
- Volunteering
- Careers

10.2.2 Okayama University Official Website

<http://www.okayama-u.ac.jp/> (Japanese)

http://www.okayama-u.ac.jp/index_e.html (English)

10.2.3 Discovery Program for Global Learners' Official Website

<https://discovery.okayama-u.ac.jp/jp/> (Japanese)

<https://discovery.okayama-u.ac.jp/en/> (English)

10.2.4 Discovery Program for Global Learners' Official Facebook Page

<https://www.facebook.com/discovery.at.ou>

10.3 Purchasing Textbooks

The information on textbooks and reference books can be found on Okayama University syllabus database.

For Kyoyo courses, see the bulletin board on General Education Building B, 1st Floor for the information on where to purchase textbooks.

Discovery courses (*Kyoyo* and *Senmon*), see *MOODLE Discovery Program Bulletin Board* for the information on where to purchase textbooks.

For *Senmon* courses offered by other departments, consult the course instructors.

*Most textbooks are sold at *Okadai Co-op* book store. If you become a member of *Co-op*, you can get discounts on books (including textbooks) and magazines, as well as food at cafeteria.

10.4 Communication with Faculty and Staff

It is vital for your personal and professional development to get into the habit of maintaining an open line of communication with whomever you are working. Important information is sent to your Okayama University email account, and it is your responsibility to check your email regularly.

If faculty or staff is expecting a response from you, please do so in a timely manner. You should also expect the same from the faculty and staff. If you do not hear back from them, contact

the person again (except when you are emailing the course instructor prior to registering for courses offered by another faculty/department).

Additionally, if you receive a telephone call from the Discovery Office, be alarmed that it may be an emergency. Call back immediately.

- Discovery Office Contact Information
 - Email: kyomu_discovery@adm.okayama-u.ac.jp
 - Telephone: 086-251-7915 – Emergency only
 - Office Hours: 8:30 AM. – 5:00 PM(JST) on weekdays

Important! Faculty may be away for conferences and meetings and may not be available to meet at a short notice. If you need to meet with them, make sure to set up an appointment well in advance, especially when you need to ask for their signature or letter.

APPENDIX

Appendix A : Course Descriptions

Appendix B : Discovery Prerequisite Maps

Appendix C : Contact Information

APPENDIX A: Discovery Course Descriptions

NOTE:

- ❖ *Course contents are subject to changes.*
- ❖ *Other course offerings may be announced at later time.*
- ❖ *Courses with asterisk (*) are offered every other year*

Course Code

Each course offered by the Discovery Program is associated with a course code (e.g. DCOR 699). A course code begins with four letters. First letter “D” refers to “Discovery.” Next three letters corresponding to each cluster as follows:

- ✚ COR: Core Courses (Discovery Seminars, Senior Project, etc.) - Required
- ✚ AJP: Academic Japanese
- ✚ EAP: Academic English
- ✚ CUL: Cultural Diversity and Communities
- ✚ SIE: Social Innovation and Entrepreneurship
- ✚ SCI: Transdisciplinary Science

These letter codes are followed by 3 digit numbers.

- 100s = *Kyoyo* courses
- 200s = *Senmon Kiso* courses
- 300s = *Kihon* courses
- 400s = *Kadai* courses
- 500s = Practicum courses
- 600s = Senior Project & related courses.

Prerequisites are expressed in course codes.

教養教育 (Kyoyo Kyoiku) “General Education Courses”

DCOR 100 Discovery Guidance

This course introduces the curriculum overview of the Discovery Program as well as its components. The following items are introduced: 1) A variety of courses and the expertise of faculty members for the Discovery Track, 2) Nine Faculties where they can complete their Senior Project for the Matching Track.

Prerequisite: NONE

DCUL 140 Current Political Events (1 credit): KIMIKO OSAWA

This course examines current political events. The class collectively will choose a couple of political events in which they are interested. Then, by mostly using news articles, students will gather factual information about these events and explain why they occurred. By taking this course, students will learn how to find information about political events and analyze them academically and systematically. No prior knowledge of political science is necessary.

Prerequisite: NONE

DSIE 110 Principles of Management (1 credit): YUAN YUAN GONG

This course introduces the principles and functions of management in business organizations. It discusses the roles, functions and activities of management, i.e. planning, organizing, leading and controlling. By the completion of the course, students will understand that management is an on-going process geared to motivate the worker as an individual and as a member of a group.

Prerequisite: NONE

DSIE 121 Introduction to Development Studies (1 credit): YUMIKO YAMAMOTO

This course will examine the development discourse in the postwar period. The course is designed for the students who wish to work in the fields of international development or international business in the future. Other students who are willing to obtain basic knowledge in development are encouraged to attend as well. Through the in-class discussions and research project, students will have opportunities to gain in-depth understanding of the development issues in selected countries in the Asia-Pacific or in other regions.

Prerequisite: NONE

DSCI 110 Introductory Mathematics I (1 credit): UDDIN MD. AZHAR

This is an introductory course in mathematics which will cover subjects including algebra, trigonometry, logarithm, probability and statistics.

Prerequisite: NONE

DSCI 111 Introductory Mathematics II (1 credit): JIAN TANG

This is a remedial course on mathematics at the pre-college level, which includes trigonometry, vectors, sequences, calculus, and statistics.

Prerequisite: NONE

DSCI 130 Introductory Chemistry (1 credit): UDDIN MD. AZHAR

This course introduces the core concepts and principles in chemistry at a foundation level. Topics that may be covered are: Matter, elements, atoms and ions, atomic and electronic structure, bonding and molecular structure, intermolecular associations, states of matter, gas laws, solutions, and acids and bases.

Prerequisite: NONE

DSCI 145 Fundamentals of Earth Science (1 credit): KATSUYUKI YAMASHITA

This is an introductory course focusing on Earth and Planetary Sciences. Topics include formation of planets, evolution of planetary atmosphere, geochemistry of the Earth's continental crust, and human impact on the environment.

Prerequisite: NONE

DSCI 155 Basic Biology (1 credit): MICHIIHIRO SUGA

In this course, students learn fundamental concepts and basic knowledge in a broad range of biological research field including biochemistry, structural biology, biophysics and molecular biology.

Prerequisite: NONE

DEAP 159 Advanced English Skills for Discovery Students (1 credit): BULIN AUBRA LEAH

This is a Required course for Discovery-Track students. A specific cohort is targeted each time the course runs (see online syllabus). The course aims to strengthen students' writing by reviewing basic principles of academic writing and conventions, developing students' skills in finding and selecting outside sources, and introducing the key components of an academic paper/thesis.

Prerequisite: See online syllabus

専門基礎 (Senmon Kiso) “Major Foundational”

Common Seminars

DCOR 201 Discovery Seminar I (1 credit): HAENG-JA CHUNG, YUAN YUAN GONG, YUMIKO YAMAMOTO

Discovery Seminar I will explore what it means to learn in a university setting among a diverse group of people. Inter-cultural communications, team building, information literacy, constructive criticism, and mutual respect will be covered.

Prerequisite: NONE

DCOR 202 Discovery Seminar II (1 credit): JIAN TANG, KIMIKO OSAWA, TBA

Discovery Seminar II provides students with opportunities to learn and exercise important academic skills and activities such as presentation, discussion, and group work. The course will be taught by multiple instructors each with a specialization in diverse fields of philanthropy, physical chemistry, chemistry, and political science.

Prerequisite: NONE

DCOR 203 Discovery Seminar III (1 credit): HARUNA MIYAGAWA, TAK UESUGI, UDDIN MD. AZHAR, TAKAYUKI YOSHIOKA

Discovery Seminar III will be taken concurrently with your Senior Project (DCOR 699). You will revisit the beginning when each of you first arrived at the Discovery Program, and share the journey of your academic career as well as the prospects for the post-graduation with your peers. It is also an occasion for you to prepare for your Senior Project presentation.

Prerequisite: DCOR 201: Discovery Seminar I and DCOR 202: Discovery Seminar II

Basic Courses

DCUL 211 Feminist Ethnic Studies (3 credits): HAENG-JA CHUNG

Japan ranked 121st out of 153 countries in the 2020 Global Gender Gap Report compiled by the World Economic Forum. In addition, the false assumption of ethnic homogeneity is prevalent. Yet, gender and ethnic diversity is an asset to overcome economic stagnation. How can each one of us take a step to realize gender and ethnic equality? This anthropological course emulates fieldwork; Learning, thinking, and acting are essential.

Prerequisite: NONE

DCUL 216 Korean Diaspora (3 credits): HAENG-JA CHUNG

About three million foreigners live in Japan. You or your friend may be one of them. Koreans used to be the largest “foreign” community in Japan. Its long history and rich livelihood offer insights to succeed in cross-cultural and multi-ethnic settings. While learning from Koreans in Japan and beyond, pay attention to many other ethnic groups. This anthropological course emulates fieldwork; Learn, think, and act accordingly.

Prerequisite: NONE

DCUL 220 Sociological Imagination (2 credits): HARUNA MIYAGAWA

This is an introductory course on sociology. What does it mean to “think sociologically”? Students will be introduced to sociological perspectives and insights as we read a novel and engage in discussions.

Prerequisite: NONE

DCUL 225 Global Sociology (3 credits): HARUNA MIYAGAWA

This is a foundational course on sociology from a global perspective. Students will be introduced to basic sociological concepts, theories, and methods, while being attentive to the global forces such as rapid and intensified movements and exchanges of goods, capital, people, and ideas that affect the realms of economy, civic life, arts and sciences, and technology.

Prerequisite: NONE

DCUL 230 Culture and Illness (2 credits): TAK UESUGI

This is an introductory course in medical anthropology. It examines cross-cultural issues in medical practices and the consequences of the expansion of western medicine on the ideas of who we are.

Prerequisite: NONE

DCUL 233 Anthropology of Disaster (2 credits): TAK UESUGI

This course examines how local cultures affect disaster vulnerability and responses, as well as how certain phenomena are recognized as “disasters,” and open up the space for new development dreams as well as further marginalization.

Prerequisite: NONE

DCUL 236 Anthropology of Food (3 credits): TAK UESUGI

This course examines the relationship between culinary culture (and “taste”) and identities, and explores the possibilities of alternative futures through food.

Prerequisite: DCUL 230 Culture and Illness OR DCUL 233 Anthropology of Disaster

DCUL 240 Introduction to Political Science (3 credits): KIMIKO OSAWA

This is an introductory course for the study of politics through the lens of political science. Starting with the discussion of what politics is, this course examines fundamental building blocks of political systems such as states, regime types, governing institutions, electoral systems, political ideologies and cultures, and major actors such as political parties and interest groups. Students will also learn major concepts and theories of political science. No prior knowledge of political science is necessary.

Prerequisite: NONE

DCUL 241 Introduction to Japanese Politics (1.5 credits): KIMIKO OSAWA

This is an introductory course for the study of Japanese politics and examines Japanese political history since the Meiji Restoration, major political institutions and actors, and contemporary political topics. By taking this course, students will understand how Japanese politics has developed, how major political institutions work, how major political actors operate within the institutional settings, and major contemporary issues that Japanese politics is facing. Students are also encouraged to develop skills to analyze Japanese politics objectively by using concepts/theories of political science. No prior knowledge of Japanese history or politics is necessary.

Prerequisite: NONE

DSIE 212 Topics in Management I (1.5 credit): YUAN YUAN GONG

This course is related to organizational behaviors, which is concerned with explaining, predicting, and enhancing the effectiveness of individuals and groups in work organizations. It focuses on the individual level of phenomenon and provides students with a general sense of management issues related to people within the organization. The course will cover topics such as emotions and moods, and communication.

Prerequisite: NONE

DSIE 216 Topics in Management II (1.5 credit): YUAN YUAN GONG

This is an introductory course to Human Resources Management (HRM). It provides students with a general sense of the job of a human resources manager as well as various HRM functions such as selection, compensation, training & development and performance management.

Prerequisite: NONE

DSIE 218 Topics in Management III (1.5 credit): YUAN YUAN GONG

This course is related to organizational behaviors, which is concerned with explaining, predicting, and enhancing the effectiveness of individuals and groups in work organizations. This course will focus on interpersonal differences and cover topics such as personality and values, attitudes, and perceptions.

Prerequisite: DSIE 212 Topics in Management I

DSIE 219 Topics in Management IV (1.5 credit): YUAN YUAN GONG

This course is related to organizational behaviors, which is concerned with explaining, predicting, and enhancing the effectiveness of individuals and groups in work organizations. This course will focus on individual decision making, such as the mechanisms and biases in everyday decision-making activities.

Prerequisite: DSIE 212 Topics in Management I

DSIE 220 Introduction to Microeconomics (1.5 credits): YUMIKO YAMAMOTO

Some of us face questions like “*Why are rents higher in some cities? What price should I charge for the English lessons that I give? How many years should I spend in school? Should I take up a part-time job?*”

This course will help answer such questions through basic economic concepts. Introduction to Microeconomics will explain the principles of economics that apply to the functions of individual decision makers, including both consumers and producers within the economic system. Important topics include supply and demand, trade theory, elasticity, externalities and firm behavior.

Prerequisite: NONE

DSIE 225 Introduction to Macroeconomics (1.5 credits): YUMIKO YAMAMOTO

Macroeconomics is the study of the whole economy. The goal of macroeconomics is to explain theories and phenomena such as booms and recessions, unemployment, inflation etc. that affect all households, firms and markets in the economy. This course will help students understand the reasons behind changing prices, the differences in income levels across countries, how governments promote a rise in incomes and stabilize employment. The important topics include GDP and its measurement, Consumer Price Index, Banks and Money Supply, Money Growth and Inflation.

Prerequisite: NONE

DSIE 231 Philanthropy and Nonprofit Organizations (2 credits): TAKAYUKI YOSHIOKA

This course provides an introduction to philanthropy and nonprofit organizations. Through this course, students will study the concept of philanthropy, patterns of giving and volunteering, and the definition, distinctive features, and various roles of nonprofit organizations. Also, students will understand the diverse forms of philanthropic action.

Prerequisite: NONE

DSIE 232 Global Philanthropy and Comparative Nonprofit Sectors (2 credits): TAKAYUKI YOSHIOKA

In this course, students will explore the scope, structure, and financing of nonprofit sectors in various countries as well as the historical development and recent trends of those nonprofit sectors. In addition, students will learn about various roles and functions of nonprofit organizations from political, social, and economic perspectives. Also, students will study the relationship between the government, nonprofits, and businesses across a variety of countries.

Prerequisite: DSIE 231 Philanthropy and Nonprofit Organizations

DSIE 250 Introduction to Data Analysis (1 credit): TAKAYUKI YOSHIOKA

This course introduces students to descriptive and inferential statistics often used in social sciences. The course aims to provide students with a solid foundation for analyzing data, and conveying analyses in convincing and appropriate ways. Topics covered include variables and types of data, frequency distributions and graphs, data description, and probability and counting rules.

Prerequisite: NONE

DSCI 210 Mathematics for Physical Chemistry (1.5 credits): UDDIN MD. AZHAR

This course will introduce students to various basic mathematical methods used in physical chemistry. The methods involve error analysis, probability and statistics, linear algebra, vectors and matrices, first and second order differential equations and their solution.

Prerequisites: NONE

DSCI 220 Modern Physics (1.5 credits): JIAN TANG

In this course, students will learn college-level physics with moderate use of mathematics. The emphasis will be on the concepts and principles of modern physics. Contents include electromagnetic wave, relativity, quantum theory, atom and molecule, and nucleus and elementary particle.

Prerequisite: NONE

DSCI 230 Chemistry for Chemical Engineering (1.5 credits): UDDIN MD. AZHAR

Chemistry for Chemical Engineers provides background in the topics of mass and energy balances specific to chemical engineering. This course will help students understand the chemical reactions and relate them to the main themes of mass and energy balances.

Prerequisite: NONE

DSCI 211 Fundamentals of Mathematics (1 credit): JIAN TANG

In this course, the following topics are covered: complex numbers and Euler's form, vectors and tensors, matrices and determinants, series and limits, differential equations, and statistics.

Prerequisite: NONE

DSCI 221 Fundamentals of Physics I (1 credit): JIAN TANG

In this course, classical mechanics including kinematics and dynamics of motion, work and energy, conservation of energy and momentum, rotational motion and torque, and oscillations and waves from a high-school level to a college level will be covered.

Prerequisite: NONE

DSCI 222 Fundamentals of Physics II (1 credit): JIAN TANG

In this course, classical physics on thermal physics, electricity and magnetism, and optics from a high-school level to a college level will be covered.

Prerequisite: NONE

DSCI 223 Quantum Physics and Atomic Structure (1 credit): JIAN TANG

Atoms are observed through atomic spectra, which can be described by the energy levels of atoms with the use of quantum mechanics. In this course, students will learn the general principles of quantum mechanics, energy levels for hydrogen atom and multi-electron atoms, and atomic spectra.

Prerequisite: NONE

DSCI 224 Introduction to Thermodynamics (1 credit): MICHINOBU MINO

This course will introduce you to the basics of thermodynamics. It contains important concepts such as the relationship between mechanical energy and thermal energy and the law of conservation of energy. Related physical terms will be explained in English and Japanese.

Prerequisite: NONE

DSCI 225 Chemical Bond and Molecular Structures (1 credit): JIAN TANG

Molecular structures or geometric shapes are determined by the molecular bonds, which result from the molecular electronic structures. Molecules with various structures are classified into several types. Accordingly, several types of energy levels are shown for the molecular rotational and vibrational motions in the electronic states. In this course, students will learn point group theory, and different types of electronic, vibrational, and rotational energy levels for various molecular structures.

Prerequisite: NONE

DSCI 231 Fundamentals of Chemistry (1 credit): UDDIN MD. AZHAR

Studies in fundamental chemistry deal with a range of fundamental concepts that can be used to explain various phenomena in chemistry, materials science and biology. The courses have been designed to provide students who have an interest in chemistry with the necessary knowledge and skills to undertake further studies in chemistry or pursue alternative pathways in the biological, environmental, earth and physical sciences. Fundamental chemistry focuses in the areas of

stereochemistry, synthesis, properties and reactions of molecules, thermodynamics, kinetics and the principles of organic chemistry.

Prerequisite: NONE

DSCI 232 Instrumental Analysis (1 credit): UDDIN MD. AZHAR

The course will address the fundamental principles and applications of modern instrumental analysis relevant for chemical engineering and industrial chemistry. The subject consists of a series of interrelated lectures and tutorials. The analytical techniques covered in this course will range from spectroscopy, chromatography, electro-analytics, thermal analysis, to mass spectrometry. The lecture components will address the underpinning physical principles of each analytical technique in-detail and also include an introduction to statistical data analysis. At the completion of the course, the student will have developed a firm understanding of the analytical methods employed in his or her field of study and also gained experience in carrying out analytical experiments.

Prerequisite: NONE

DSCI 233 Introduction to Catalytic Chemistry (1 credit): UDDIN MD. AZHAR

This introductory course in homogeneous and heterogeneous catalysis will examine a number of catalytic reactions and their mechanism and process conditions. It will cover the preparation of catalysts and their use in specific chemical processes. Students will also learn how to analyze the data obtained from a catalytic reaction and how it can be used to determine the mechanism.

Prerequisite: NONE

DSCI 255 Genetics and Molecular Biology (1.5 credits): TEPPEI MATSUI Etc.

This lecture is about basics of biology. The basics are discussed with recent insights. Hopefully, we will have small experiments in the lecture.

Prerequisite: Instructor's permission in advance

DSCI 260 Introduction to Agricultural Sciences (1.5 credits): TBA

In this course, students will learn about current issues related to food supply, bio-resources, bio-technology, and conservation of the environment. This course also introduces the basics of agricultural science and other related scientific fields that can be applied to resolve these problems.

Prerequisite: NONE

Academic English

DEAP 251 Introduction to the use of English (1.5 credits): BULIN AUBRA LEAH

The course aims to introduce students to English for Academic Purposes (EAP) by developing their skills in paragraph writing and working on language.

Prerequisite: Follow placement advice. See online syllabus, especially 'Target Students'.

DEAP 252 Intermediate English at University (1.5 credits): BULIN AUBRA LEAH

The course aims to develop students' skills in English for Academic Purposes (EAP) by developing their skills in essay-writing and introducing them to the idea of academic integrity and use of outside sources.

Prerequisite: Follow placement advice. See online syllabus, especially 'Target Students'. Pay attention to the course number when registering.

DEAP 253 English Seminar (1 credit): BULIN AUBRA LEAH

The course aims to develop students' skills in participating in and facilitating group discussions at the university level. Through various practices, it develops students' abilities to engage with unit lectures and integrate relevant research in group discussions.

Prerequisite: See online syllabus, especially 'Target Students'

Academic Japanese

DAJP 291 Academic Japanese Training I (1 credit): TBA

Development of academic study skills and learning strategies needed to successfully complete Japanese-medium content courses offered by other departments/faculties outside the Discovery program through self-reflection and individual consultation. Students will explore learning strategies that best fit their own Japanese language proficiency and learning styles, identifying problems and find solutions.

Prerequisite: Instructor's permission in advance

DAJP 292 Academic Japanese Training II (1 credit): TBA

Application of academic study skills and learning strategies explored in DJAP291 through self-reflection and individual consultation. Students will gain confidence in taking Japanese-medium content courses offered by other departments/faculties outside the Discovery program the rest of the school year.

Prerequisite: Instructor's permission in advance

DAJP 293 Career Japanese (1 credit): TBA

Preparation for Japanese-Language Proficiency Test (JLPT) N2 which is necessary for most international students to look for a job in Japan. Students will improve Japanese language proficiency, test skills, and learning strategies to pass JLPT N2 through multiple practice tests, self-reflection and monitoring of own learning, and analysis of the JLPT.

Prerequisite: Instructor's permission in advance

専門科目 (Senmon Kamoku) “Major Courses” – Kihon (Fundamental)

DCUL 310 Cultural Anthropology (3 credits): HAENG-JA CHUNG

Question the common sense in order to have in-depth cross-cultural experiences. Cultural Anthropology helps and navigates you through this exhilarating path. Self-reflexivity, open-mindedness, flexibility, and ability to cope with unpredictability are required in addition to maturity, responsibility, and punctuality.

Prerequisite: DCUL 211: *Feminist Ethnic Studies* OR DCUL 216: *Korean Diaspora*

DCUL 316 Topics in Japan and Beyond (3 credits): HAENG-JA CHUNG

Through selected topics, you deepen your understanding of Japan and beyond. Like most Professor Chung's courses, this course emulates anthropological fieldwork. Self-reflexivity, open-mindedness, flexibility, and ability to cope with unpredictability are required in addition to maturity, responsibility, and punctuality.

Prerequisite: DCUL 211: *Feminist Ethnic Studies* OR DCUL 216: *Korean Diaspora*

DCUL 320 Sociology of Migration I (2 credits): HARUNA MIYAGAWA

This course will introduce theories of migration through ethnographies. Topics include (but are not limited to) the mechanisms and the decision-making processes of migration, gender, generation, social networks, and transnational ties. We will explore how the act of migration and the presence of “migrants” challenge the existent boundaries - both physical and symbolic - in the host society as well as in the society of origin.

Prerequisite: DCUL 225 *Global Sociology*

DCUL 321 Urban Sociology (2 credits): HARUNA MIYAGAWA

An urban setting is a site of human actions, interactions, and inactions. They occur in the structures of society that are bound not only by physical space but by class, gender/sexuality, race, religions, and ethnicity. In this course, we will explore how history and culture interact with a place, define the rhythm of life, and influence the destiny of individuals by referring to empirical studies from around the world.

Prerequisite: DCUL 225 *Global Sociology*

DCUL 323 Logic and Methods of Social Inquiry (3 credits): HARUNA MIYAGAWA

The course will guide students from simple curiosity to scientific inquiry. Conducting a study involves continuous dialogues between the researcher and the study participants, the “data,” and the literature, as well as him/herself. Students will not only learn the basic research methods used in the social sciences (sociology in particular), but more importantly, how research methods are used to generate scientific knowledge and why they are an integral component of social science research. We will also bring ethics of engaging in research at the center of our discussion.

Prerequisite: DCUL 225 *Global Sociology*

DCUL 325 Sociology of Migration II (2 credits): HARUNA MIYAGAWA

This course will introduce theories of migration through ethnographies. Topics include (but are not limited to) the mechanisms and the decision-making processes of migration, gender, generation, social networks, and transnational ties. We will explore how the act of migration and the presence of “migrants” challenge the existent boundaries - both physical and symbolic - in the host society as well as in the society of origin.

Prerequisite: DCUL 225 *Global Sociology*

DCUL 327 History of Social Thought (2 credits): HARUNA MIYAGAWA

In this course, students will be introduced to philosophers and social theorists from the past and present. We will draw insights from the social sciences (e.g. sociology, anthropology, history, etc.) as well as various arts including architecture, literature, film, and painting.

Prerequisite: DCUL 225 *Global Sociology*

DCUL 330 Medical Anthropology (2 credits): TAK UESUGI

This course examines how different societies around the world conceptualize health and illness differently, and how the contemporary alliance of western medicine and the state is creating a particular kind of experiences, subjectivity, and citizenship.

Prerequisite: DCUL 230 *Culture and Illness*.

DCUL 333 Environmental Anthropology (3 credits): TAK UESUGI

This course examines how societies around the world conceptualize and engage with their environments, and how global capitalism and environmentalism are giving rise to new problems, possibilities, and “cosmo”-politics.

Prerequisite: DCUL 230 *Culture and Illness* OR DCUL 233 *Anthropology of Disaster* OR DCUL 236 *Anthropology of Food*

DCUL 340 Comparative Politics (1.5 credits): KIMIKO OSAWA

This course examines how politics works in different countries, trying to understand why we see similarities and differences in their political processes and dynamics. For example, we will discuss varieties we can find in democracies, non-democracies, welfare systems, relationships between politics and religion, types of political parties, and citizens' political participation patterns. While there are some overlaps of topics with Introduction to Politics, this course will examine these topics in more depth and analyze different countries as cases.

Prerequisite: DCUL 240 *Introduction to Political Science*

DCUL 344 Japanese Politics (2 credits): KIMIKO OSAWA

This course examines various aspects of contemporary Japanese politics by reading and discussing the academic research on Japanese politics, mainly in the field of political science. By taking this course, students will obtain knowledge and skills to understand and analyze Japanese politics. They can also gain knowledge of concepts and theories of political science.

Prerequisite: NONE

DCUL 346 International Politics (1.5 credits): KIMIKO OSAWA

This course examines the modern history of international politics and then the dynamics and mechanisms of international politics. By focusing on how actors interact with each other within sets of institutions, we will discuss why countries engage in wars and why countries care about international human rights and the global environment. Students can also gain knowledge of concepts and theories of political science.

Prerequisite: DCUL 240 *Introduction to Political Science*

DSIE 312 Topics in Management V (2 credits): YUAN YUAN GONG

This is an advanced HRM course that is designed to provide both a conceptual and practical study of human resource planning and staffing within organizations. Upon completing the course, the students will be able to develop an integrative framework and activities of HR planning and strategic staffing in an organization in accordance with the business strategies.

Prerequisite: DSIE 216 *Topics in Management II*

DSIE 316 Topics in Management VI (2 credits): YUAN YUAN GONG

This course focuses on how individuals, groups, organizations, and the surrounding environment interact and affect organizational effectiveness. Students are expected to understand the complex interplay of these multi-level effects is important in enhancing the effectiveness of the role as a manager (or manager-to-be) in managing subordinates, peers, and supervisors and contributing to organizational effectiveness. The course will cover topics such as Foundations of Group Behavior, Work Teams.

Prerequisite: DSIE 218 *Topics in Management III* OR DSIE 219 *Topics in Management IV*

DSIE 318 Topics in Management VII (2 credits): YUAN YUAN GONG

This course examines leadership theory and research, and emphasizing the development of leadership and interpersonal skills through self-assessment case analysis, and experiential exercises. Important fields

within personnel management and human resource management, such as recruitment, working environment and health, are also discussed.

Prerequisite: DSIE 312 Topics in Management V OR DSIE 316 Topics in Management VI

DSIE 319 Topics in Management VIII (2 credits): YUAN YUAN GONG

Training & Development helps change employees' attitude towards work and towards the organization. It helps enhance employees' knowledge to embrace the changing environments. In this course, we will discuss various issues in T&D, for example, the relationship between training and strategy, training needs assessment, training methods/skills, and cross-cultural issues in training.

Prerequisite: DSIE 312 Topics in Management V OR DSIE 316 Topics in Management VI

DSIE 320 Microeconomics (2 credits): YUMIKO YAMAMOTO

Building on Introduction to Microeconomics (DSIE 210), this course will help students understand the decisions made by producers and consumers in different market structures like monopolies, oligopolies, competitive markets. For e.g.: "How is the market for oil different from the market for diamonds?" Other topics covered would be design of the tax system, theory of consumer choice and asymmetric information.

Prerequisite: DSIE 220 Introduction to Microeconomics OR permission of instructor

DSIE 323 Development Economics (2 credits): YUMIKO YAMAMOTO

Over a billion people survive on less than a dollar a day. These in turn constitute the malnourished, illiterate, unemployed and unorganized labor as poverty severely limits people's capabilities and well-being. This course aims to provide students with an understanding of the problems that developing countries face and the diversity in the developing world. The course will be based on the Human Capital approach to development and will focus on the economics of the central issues in the developing world today like poverty, population, child mortality, hunger, migration and environmental degradation etc. Students will learn the nature and causes of these problems and the appropriate policy design to address them.

Prerequisite: DSIE 220 Introduction to Microeconomics AND DSIE 225 Introduction to Macroeconomics, OR permission of instructor

DSIE 325 Macroeconomics (2 credits): YUMIKO YAMAMOTO

Applying the basic concepts studied in Introduction to Macroeconomics (DSIE 215), this course delves deeper into economy-wide issues like "How should governments fight recessions? How are inflation and unemployment related?" Exchange rates, financial systems, balance of payments, government debt, monetary and fiscal policies are some of the topics included.

Prerequisite: DSIE 225 Introduction to Macroeconomics OR permission of instructor

DSIE 327 Japanese Economy (2 credits): YUMIKO YAMAMOTO

This course presents an overview of the Japanese economy. It will discuss some of the past and present features, persistent problems and challenges faced by this economy. Japan's post war high growth rate, national income and savings, the lifelong employment system, current unemployment and irregular employment trends, Abenomics, current demographic challenges and sluggish growth rate, high public debt are some of the topics to be included.

Prerequisite: DSIE 220 Introduction to Microeconomics AND DSIE 225 Introduction to Macroeconomics, OR permission of instructor

DSIE 328 Japanese Economy and Gender (2 credits): YUMIKO YAMAMOTO

Japan, the world's third-largest economy, has been placed at near the bottom in the gender equality rankings. In addition to persistent gender inequality, income inequality among households is on the rise. Trickle-down effects of economic growth have weakened; why? In this course, students will learn about the labor market, business practices and relevant economic and social policies in Japan through a gender lens and discuss the ways to advance sustainable development. Through individual research and in-class discussion, students will have

opportunities to apply the similar gender analysis to other countries and discuss the case of Japan as a comparative study.

Prerequisite: DSIE 220 Introduction to Microeconomics AND DSIE 225 Introduction to Macroeconomics, OR permission of instructor

DSIE 321 International Economics (2 credits): YUMIKO YAMAMOTO

Changes in international trade volumes and exchange rates are not just newspaper headlines. They affect our lives when we purchase imported goods or travel abroad. This course aims to provide students with a good theoretical background to study international trade policies, international monetary systems, and international finance.

Prerequisite: DSIE 220 Introduction to Microeconomics AND DSIE 225 Introduction to Macroeconomics, OR permission of instructor

DSIE 331 Nonprofit Management and Social Entrepreneurship (4 credits): TAKAYUKI YOSHIOKA

This course is designed to provide current and future nonprofit leaders and social entrepreneurs with an overview of a range of nonprofit management and social entrepreneurship issues, methods, and practices. Topics covered include strategic planning and management, leadership, board governance, financial management, human resource management, marketing, program evaluation, advocacy, and accountability.

Prerequisite: DSIE 231 Philanthropy and Nonprofit Organizations AND DSIE 232 Global Philanthropy and Comparative Nonprofit Sectors

DSIE 350 Elementary Statistics (4 credits): TAKAYUKI YOSHIOKA

This course introduces students to inferential statistics often used in social sciences. The course aims to provide students with a solid foundation for elementary statistics. Topics covered include discrete probability distributions, the normal distribution, confidence intervals and sample size, hypothesis testing, testing the difference between two means, two proportions, and two variances, correlation and regression, other chi-square tests, analysis of variance, and nonparametric statistics. Students will use Excel, SPSS, or Stata (a statistical software application) to develop their data analysis skills.

Prerequisite: DSIE 250 Introduction to Data Analysis

DSIE 351 Qualitative Research Methods (2 credits): TAKAYUKI YOSHIOKA

This course is designed to provide students with an overview of qualitative research methods, such as case study research and survey methodology. Through this course, students will learn how to design case study research and collect and analyze data for case study research. Students will also study how to design and implement internet, phone, mail, and mixed-mode surveys.

Prerequisite: DSIE 250 Introduction to Data Analysis

DSCI 326 Fundamentals of Molecular Spectroscopy (2 credits): JIAN TANG

Molecular spectra are produced by molecular interaction with electromagnetic wave. They reflect electronic, vibrational, and rotational energy levels of molecules, and provide the fingerprints of molecules. In this course, students will learn how to understand molecular spectra of various molecules.

Prerequisite: NONE

DSCI 327 Spectroscopic Methods (1 credit): JIAN TANG

For observing molecular spectra, many spectroscopic methods are applied. Especially, laser spectroscopic techniques have been developed to observe high resolution molecular spectra in high sensitivity or fast time-scaled molecular spectra for molecular dynamics. In this course, principles for various spectroscopic methods will be presented.

Prerequisite: NONE

DSCI 328 Introduction to Astrochemistry and Atmospheric Chemistry (1 credit): JIAN TANG

Astrochemistry is an academic discipline that studies the chemical elements and molecules in the universe, especially focusing on their interaction with radiation. Atmospheric chemistry is a branch of atmospheric science that studies the chemistry of the Earth's atmosphere and that of other planets. In astrochemistry and

atmospheric chemistry, molecular spectroscopy is a particularly important experimental tool. In this course, fundamental understanding on both astrochemistry and atmospheric chemistry is introduced and the application of spectroscopy is presented. Although this course requires some knowledge on molecular spectroscopy, it can also be taken as an independent unit by interested students.

Prerequisites: NONE

**DSCI 329 Introduction to Solid State Physics (2 credits)
MICHINOBU MINO**

Solid-state physics introduces the basics of electrical conduction and magnetic properties. Electrons play an important role there. You will also learn the basics of quantum mechanics and statistical mechanics.

Prerequisites: NONE

MICHINOBU MINO DSCI 350 Basic Physics Laboratory (1 credit): MICHINOBU MINO

This course will introduce students to use experimental equipment and understand the basic concepts of physics through various experiments. The main experimental themes are planned to be gravitational acceleration, refraction and polarization of light, interference and diffraction of ultrasonic waves.

Prerequisites: NONE

DSCI 353 Laboratory in Analytical Chemistry (2 credits): TBA

This laboratory course in analytical chemistry aims to provide basic knowledge and skills for conducting chemical experiments. Analytical chemistry is composed of qualitative and quantitative characterization of substances. In this course, students will learn various methods for measuring substances and biological materials at molecular level. Furthermore, students will learn the skills for safety management of chemical substances, which are indispensable in further research in the third and fourth years including the research for Senior Project.

Prerequisite: Instructor's permission in advance

DSCI 355 Laboratory in Biology (2 credits): TBA

Through a series of observation and analysis, students will understand the basics of structures and functions of plants, animals, and microbes. The subjects dealt in this laboratory course includes: 1. Observation of mammalian oocyte, 2. Observation of external and internal plant morphology, 3. Experiment on insects - collection and specimen, 4. Field research on suburban forest, 5. Observation of plant genetics, 6. Plant growth analysis, 7. Observation of gastrointestinal and fermentation microbes, 8. Observation of hemocytes.

Prerequisite: Instructor's permission in advance

DSCI 357 Basic Field Practice (2 credits): TBA

This course deals with the basic practical training of agriculture at the Field Science Center including Okayama Farm, Tsudaka Livestock Farm, and Hachihama Farm. Students will experience the work in the agricultural field, and learn a basic cultivation and animal feeding techniques of field crops, horticultural crops, and beef cattle. This course also enhances the development of student's skills in farm work.

Prerequisite: Instructor's permission in advance

**DSCI 360 Introduction to Agrochemical Bioscience (1 credit):
YOSHIMASA NAKAMURA**

Agricultural Bioscience originated from a branch of applied sciences mainly specialized in processing raw agricultural products into foods and beverages. Now this branch has extended its applications to fields such as medical innovations and the improvement of natural environment in accordance with the advancement of modern civilization. In this course, students will learn topics and stories related to the Agricultural Bioscience, which has contributed to human society especially in the field of health, food, and environment. Students will also learn the wealth of organic chemistry and biochemistry, by which novel biological functions are elucidated with rationale and logics of science.

Prerequisite: NONE

**DSCI 370 Introduction to Environmental Ecology (1 credit):
HISASHI DATAI**

The goal of this course is to understand fundamental concepts of sustainable agricultural production and environmental conservation from the viewpoints of ecology, engineering, and socio-economics. The course provides topics related to the following fields of study: Physiological Plant Ecology, Forest Ecology, Environmental Soil Science, Conservation of Aquatic Biodiversity, Insect Ecology, Evolutionary Ecology, Bioproduction Systems Engineering, Resources Management, and Farm Management Systems and Information Processing.

Prerequisite: NONE

DSCI 381/382 Introduction to Applied Plant Science I/II (1 credit each): YOSHIHIKO KUBO

This course offers an introductory lecture series regarding the production of both crops and horticulture crops. It deals with following topics: characterization and genetic improvement of useful crop traits, diseases and immunity mechanisms in plants, cultivation management techniques for maximum production, and technologies for transportation and preservation of farm harvests.

Prerequisite: NONE

DSCI 390 Introduction to Animal Science (1 credit): NAOKI NISHINO

The goal of this course is to understand fundamentals of animal science including physiology, anatomy, reproduction, breeding, genetics, nutrition, and microbiology. The course also introduces animal biotechnology, animal model for human diseases, assisted reproductive technology, and relation between food and human health. The student will learn overview of current status of animal science and related issues.

Prerequisite: NONE

専門科目 (Senmon Kamoku) “Major Courses” – Kadai (Subject-Specific)

DCUL 410 Topics in Japan and Beyond II (3 credits): HAENG-JA CHUNG

Through selected topics, you deepen your understanding of Japan and beyond. Like most Professor Chung's courses, this course emulates anthropological fieldwork. Self-reflexivity, open-mindedness, flexibility, and ability to cope with unpredictability are required in addition to maturity, responsibility, and punctuality.

Prerequisite: DCUL 310: *Cultural Anthropology* OR DCUL 316: *Topics in Japan and Beyond I*

DCUL 413 Sex Work and Emotional Labor (3 credits): HAENG-JA CHUNG

What is sex work? What is emotional labor? How do sex workers and emotional laborers produce themselves and manage their businesses? And why and how do customers pursue these services? We respond to these questions at the intersection of sex work, emotional labor, and possibly spiritual care. Self-reflexivity, open-mindedness, flexibility, and ability to cope with unpredictability are required in addition to maturity, responsibility, and punctuality.

Prerequisite: DCUL 310: *Cultural Anthropology* OR DCUL 316: *Topics in Japan and Beyond I*

DCUL 433 Colonialism and War (3 credits): HAENG-JA CHUNG

Colonialism and war are deeply related. Colonization often happens before/during/after wars. Do you know which parts of the world Japan colonized? When and how did colonization occur and end at all? What are the (post-)colonial effects on the colonizers and colonized? If you wish for a peaceful world, it is necessary to learn colonialism and war. Self-reflexivity, open-mindedness, flexibility, and ability to cope with unpredictability are required in addition to maturity, responsibility, and punctuality.

Prerequisite: DCUL 310: *Cultural Anthropology* OR DCUL 316: *Topics in Japan and Beyond I*

DCUL 421 Globalization and Development (2 credits): HARUNA MIYAGAWA

Taking a critical approach to the world of international development, this course will explore the premises and goals of various actors involved in development projects through case studies. We will focus on the narratives of international development, and underlying forces that impact development, and its unintended consequences on the lives of people.

Prerequisite: DCUL 320 *Sociology of Migration I* or DCUL 325 *Sociology of Migration II*

DCUL 423 Gender in Global Context (2 credits): HARUNA MIYAGAWA

Gender, as with race and ethnicity, is a social construct. This course will explore how gender plays out in the lives of individuals and interacts with other aspects of our identity, reinforcing our social roles and positions in society. Through memoirs and biographies of both women and men, we will examine how gender influences pursuits of individuals with a close attention to the socioeconomic and political context.

Prerequisite: DCUL 320 *Sociology of Migration I* or DCUL 325 *Sociology of Migration II*

DCUL 430 Seminar in Medical Anthropology (2 credits): TAK UESUGI

This is a special topics course in medical anthropology.

Prerequisite: DCUL 330 *Medical Anthropology*

DCUL 431 Ethnographies in Medical Anthropology (2 credits): TAK UESUGI

In this course, students apply conceptual understandings gained in DCUL 330 *Medical Anthropology* to read book-length ethnographies and write their own research paper.

Prerequisite: DCUL 330 *Medical Anthropology*

DCUL 435 Anthropology of Science (2 credits): TAK UESUGI

This course introduces social scientific and philosophical approach to natural sciences, and explores how anthropologists conduct ethnographies of scientific practices.

Prerequisite: DCUL 330 *Medical Anthropology* OR DCUL 333 *Environmental Anthropology*

DCUL 438 Anthropology of Memory (4 credits): TAK UESUGI

This course is about personal and collective memory of violence and trauma. By exploring the intersections of psychological discourse and literary/ethnographic works on trauma, we ponder upon the question of justice and responsibility for past atrocities.

Prerequisite: DCUL 330 *Medical Anthropology*

DCUL 439 Anthropology of the Self (4 credits): TAK UESUGI

This course explores the question “What is the self?” by examining the cases in which the confidence in one's sense of self crumbles through conflicting ethical values, mental illnesses, and abjection.

Prerequisite: DCUL 330 *Medical Anthropology*

DCUL 440/441/442/443 Topics in Political Science I/II/III/IV (2 credits each): KIMIKO OSAWA

This course examines a specific political issue in depth. Details will be described in the syllabus.

Prerequisite: DCUL 240 *Introduction to Political Science*

DSIE 412 Topics in Management IX (2 credits): YUAN YUAN GONG

This course is designed to expand students' understanding of negotiations through theories such as social judgment, social cognition, and decision making, etc. Students will learn how to analyze their negotiation experiences based on the theories and experience various negotiations on class.

Prerequisite: DSIE 312 *Topics in Management V* OR DSIE 316 *Topics in Management VI*

DSIE 416 Topics in Management X (2 credits): YUAN YUAN GONG

This is a course introducing the applications of various theories in OB and HRM in contemporary organizations and society. Students will analyze a variety of real-world examples and case studies.

Prerequisite: DSIE 312 *Topics in Management V* OR DSIE 316 *Topics in Management VI*

DSIE 420 Introduction to Feminist Economics (2 credits): YUMIKO YAMAMOTO

This course will introduce feminist economics and assumes that the students have some basic knowledge of economics. Specific topics include heteronormativity in economics, feminist approaches to economics research, the role of caring labor in the economy, feminist approaches to economic development, intrahousehold relationships, gender and property rights, differential effects of international trade and finance by gender, and feminist approaches to public finance and social welfare.

Prerequisite: DSIE 220 *Introduction to Microeconomics* AND DSIE 225 *Introduction to Macroeconomics*, OR permission of instructor

DSIE 421 Trade Policy and Development (2 credits): YUMIKO YAMAMOTO

This course will introduce the recent developments in international trade and monetary policy. International trade agenda now includes flows of goods, services, money, and people (temporary migrant workers) as well as trade-related investment and intellectual property rights. How does the global and regional integration affect people's lives? We will examine the WTO and regional trade agreements and their impacts on human development by examining case studies.

Prerequisite: DSIE 220 *Introduction to Microeconomics* AND DSIE 225 *Introduction to Macroeconomics*, OR permission of instructor

DSIE 422 Poverty (2 credits): YUMIKO YAMAMOTO

What is poverty? Who are the poor? What are the causes of and solutions to poverty? How do we measure poverty? How much poverty exists? Is a world free of poverty possible? In this course, we will examine poverty in the context of the history of economic thought and examine various poverty measures, and anti-poverty policies and

programs. The discussions in this course are applicable to both high- and low-income economies.

Prerequisite: DSIE 220 Introduction to Microeconomics AND DSIE 225 Introduction to Macroeconomics, OR permission of instructor

DSIE 423 Inequality (2 credits): YUMIKO YAMAMOTO

Inequality, like poverty, is multidimensional. How does the history, the political and economic system, or technology affect inequality? How has the inequality within and among countries changed over the past decades? Should we care about inequality of outcome or of opportunity? In this course, we will examine inequality in the context of the history of economic thought and examine various inequality measures, and possible causes of and solutions to inequality. The discussions in this course are applicable to both high- and low-income economies.

Prerequisite: DSIE 220 Introduction to Microeconomics AND DSIE 225 Introduction to Macroeconomics, OR permission of instructor

DSIE 436/437/438 Nonprofit Management and Social Entrepreneurship Practicum I/II/III (4 credits each): TAKAYUKI YOSHIOKA

These practicum courses provide students with training in specific professional skill sets, such as program evaluation and performance management, social marketing, nonprofit advocacy and public policy, social finance and fundraising, and nonprofit human resource management. Course projects, case study analysis, and discussions are designed to offer students plenty of practical opportunities to advance their management and analytical skills, leadership, and entrepreneurial mindset.

Prerequisite: DSIE 331 Nonprofit Management and Social Entrepreneurship

DSIE 450 Intermediate Statistics (4 credits): TAKAYUKI YOSHIOKA

In this course, students will further study multiple regression analysis with a main focus on ordinary least squares (OLS) regression. Topics include hypothesis testing, heteroskedasticity, omitted variable bias, measurement error, and topics related to model specification. Students will use SPSS or Stata (a statistical software application) to develop their data analysis skills.

Prerequisite: DSIE 350 Elementary Statistics

DSCI 461 Agrochemical Bioscience 1 – Analytical Chemistry (1 credit): TAKASHI TAMURA

This course uses the textbook Fundamentals of General, Organic, and Biological Chemistry. Students will learn the core knowledge and concepts in general chemistry by discussing the fundamental subjects such as atoms and bonds by which a molecule is composed of, mass balance and reaction rate by which a chemical reaction is described. In this course, lecturers, who conduct their research in the field of Agrochemical Biosciences, cover the early chapters of the volume. The curriculum starts with remedial-level of chemistry with limited use of physics and mathematics. The emphasis is rather on the basic concepts and principles of chemistry with a relatable context to ensure students of all disciplines gain an appreciation of chemistry's significance in everyday life.

Prerequisite: DSCI 360 Introduction to Agrochemical Bioscience

DSCI 462 Agrochemical Bioscience 3 – Organic Chemistry (1 credit): HIROMASA KIYOTA

This course uses the textbook Fundamentals of General, Organic, and Biological Chemistry. Students will learn the basic knowledge and framework of organic chemistry by discussing the characteristics of hydrocarbons, alcohols, aldehydes, and organic acids. In this course, lecturers, who conduct their research in the field of Agrochemical Biosciences, cover the middle chapters of the volume. Students will learn college-level organic chemistry with an aim to be familiarized with chemical structures and skills to draw chemical information underneath the structure of molecules.

Prerequisite: DSCI 360 Introduction to Agrochemical Bioscience

DSCI 463 Agrochemical Bioscience 2 – Biological Chemistry (1 credit): TADAYOSHI KANAO

This course uses the textbook Fundamentals of General, Organic, and Biological Chemistry. Students will learn the essential knowledge and ideas for biological chemistry by learning the practical subjects such as

lipids, amino acids, and proteins. The topics also involve enzymes, vitamins, and nucleic acids, with which dynamic metabolism and genetic inheritance occur in cells. In this course, lecturers, who conduct their research in the field of Agrochemical Biosciences, cover the latter chapters of the volume. Students will learn college-level biological chemistry, and will understand the significance and potential of chemistry in understanding the mechanism of life.

Prerequisite: DSCI 360 Introduction to Agrochemical Bioscience

DSCI 471 Introduction to Forest Ecosystem Science (1 credit): MUNETO HIROBE

Forest Ecosystem Science covers a wide range of subjects in forest ecosystems relating to physiological ecology, population and community ecology, soil science, biogeochemistry etc. It also covers interactions between forest ecosystems and human society. This class provides topics in Forest Ecosystem Science including ecosystem concept and elemental cycles, regeneration mechanisms of forest ecosystems and the conservation, food web structure, ecophysiology of trees against drought stress, and economic evaluation of forests' multifunctional role.

Prerequisite: DSCI 370 Introduction to Environmental Ecology

DSCI 472 Economics, Management and Technology Progress in Japanese Agriculture (1 credit): KAZUHIKO NAMBA

Japan developed many agricultural machines along with the development of manufacturing industries after the World War II. If the farms were in good conditions, a couple can cultivate 10 hectares of rice paddies. But, in recent years, the food self-sufficiency rate has become almost 40 % in Japan. Is this a problem? The goal of this course is to find a problem and to come up with your own solution for it. Some general problems will be presented and the solutions from various fields, i.e., Economics, Management and Technology, will be introduced. We will discuss what was solved in the past, what should be solved at present, and the various approaches for the future.

Prerequisite: DSCI 370 Introduction to Environmental Ecology

DSCI 473 Ecological Approach to Sustainable Agriculture (1 credit): TAKAHISA MIYATAKE

The goal of this course is to understand fundamentals of ecological approach to sustainable agriculture. It includes nutrient dynamics in soil-plant ecosystems, systematics and conservation of molluscs, ecological evolutionary studies on insect population, ecological genetics and entomology. The course also introduces soil managements, taxonomic approaches, genetic ecological approaches, applied entomology, evolutionary ecology and behavioral ecology. The student will learn the overview of the current status of ecological approach to sustainable agriculture and its related issues.

Prerequisite: DSCI 370 Introduction to Environmental Ecology

DSCI 481 Vegetables and Flower Science (1 credit): TANJURO GOTO

Vegetables and flowers are essential crops in human life. They were selected from the wild plants which had the origin in all parts of the world and have been improved. The efficient and sustainable production of these crops is a significant challenge. The productions have been achieved by scientific understandings of the crops and improvements of cultivation technology. This course introduces scientific knowledge of vegetables and flowers, including their origins, physiological and ecological characters, cultivation techniques and usages.

Prerequisite: DSCI 381 Introduction to Applied Plant Science I AND DSCI 382 Introduction to Applied Plant Science II

DSCI 482 Plant Disease and Control (1 credit): KAZUHIRO TOYODA

With a rising population, an integrated system of plant production must be sufficient to feed us now and in the near future. The Food and Agriculture Organization (FAO) suggests that more than 800 million people in the world do not have enough to eat, causing 24,000 people to die from hunger. Actually, plant diseases annually cause a 20% yield loss in food and cash crops. This class explores the past, present and future of the plant pathology to achieve sustainable global food production.

Prerequisite: DSCI 381 Introduction to Applied Plant Science I AND DSCI 382 Introduction to Applied Plant Science II

DSCI 483 Fruit Science (1 credit): YASUTAKA KUBO

This class covers the basics and applied aspects of fruit science, such as physiology, technology and marketing system. Major topics of fruit physiology are mechanisms of flowering, fruit growth, development and ripening, including control by plant hormones. Topics covered in this class include: technologies enabling seedless grape berries and high quality fruits with large and beautiful appearance and excellent flavors; year-round fruit providing systems using various cultivars, production and storage technique; and history and cultural aspects of fruit production in Japan.

Prerequisite: NONE

DSCI 484 Crop Genetics and Breeding (1 credit): KENJI KATO

Plant breeding is fundamental to improving crop productivity for food security. This class starts with introductory lectures on plant genetics including topics on Mendelian Genetics, linkage and molecular genetics. Subsequently, several topics related to plant breeding will be provided from foundational/theoretical and to applied perspective.

Prerequisite: DSCI 381 Introduction to Applied Plant Science I AND DSCI 382 Introduction to Applied Plant Science II

DSCI 485 Crop Science and Production (1 credit): YOSHIHIKO HIRAI

This lecture provides the basics and advanced knowledge of challenges to crop production. The goal of this lecture is to study ways to improve the yield and quality of products based on the understanding of the relationship between plant growth and field environment.

Prerequisite: DSCI 381 Introduction to Applied Plant Science I AND DSCI 382 Introduction to Applied Plant Science II

DSCI 491 Animal Production Science (1 credit): KOJI KIMURA

This course deals with the basics of fundamental animal science, with fundamental animal production related with reproduction, physiology, anatomy, and genetics. The goals of this course are to obtain basic knowledge about the animal reproduction, understand the relationship between structure and functions from the viewpoint of different animals (cow, pig and chicken etc.), and understand the theory and method for genetic improvement of domestic animals.

Prerequisite: DSCI 390 Introduction to Animal Science

DSCI 492 Food and Nutrition Science (1 credit): HIDETOSHI MORITA

The main subjects of this course are nutrition, food processing, and preservation, as well as food security and safety. This course deals with the fermentation processes using lactic acid bacteria for preserving and improving functional properties of animal products (milk, dairy products, and egg). This course also deals with microbiota, obesity, and disease related with food and nutrition.

Prerequisite: DSCI 390 Introduction to Animal Science

DSCI 493 Animal Life Science (1 credit): TOSHIMITSU HATABU

Animals have abilities to adapt to the environmental changes and maintain internal homeostasis. Animals also reproduce a series of life. These events in the life are caused by the various mechanisms. This course deals with: 1) Animal physiology; exposition about the protective mechanisms from the pathogens, 2) Animal reproduction and development; physiology of reproduction and manipulation of embryos, 3) Animal breeding and genetics; genetic constitutions of animals and populations.

Prerequisite: DSCI 390 Introduction to Animal Science

Practicum 実践科目

DCOR 501 Study Abroad (2 credits): DISCOVERY FACULTY

When you study abroad, you can earn 2 credits, by completing the following tasks: (1) Preparing for your study abroad, including the planning of your course of study; (2) Sharing your activities and experiences on-line during your stay at a school you study at; and (3) Reflecting and reporting your experiences after you come back to Japan.

Prerequisite: Academic Advisor's permission in advance

DCOR 591 Independent Study (1~16 credit(s)): DISCOVERY FACULTY OR OTHER FACULTY

Independent study course involves conducting a term-long project under the supervision of a faculty member. Typically, such projects include student-driven research, literature review, or other form of creative project. Independent study is permitted only in special circumstances in which proposed learning is not possible in courses already offered by the Discovery Program, and upon an endorsement of a supervising faculty.

Prerequisite: Instructor's permission in advance

DCUL 501 Ethnographic Fieldwork I/II/III (2 credits each): HAENG-JA CHUNG, HARUNA MIYAGAWA, TAK UESUGI

Ethnographic fieldwork is the bread-and-butter of sociological and anthropological research. It is a qualitative research method involving an extended engagement with a location and individuals. In this course, students conduct mini-ethnographic fieldwork. Students are required to write a proposal, conduct a field research, and write a report based on their experience.

The format of the report can vary. Consult your instructor for further details on the requirements.

Prerequisite: Instructor's permission in advance

DSIE 551 Internship (1~8 credit(s)) TAKAYUKI YOSHIOKA

From the 2nd year onwards all students can pursue internships at various small and large companies, nonprofits and the government offices within and outside Japan. Students are required to attend the pre-internship career workshop and to receive an approval from their Academic Advisor or Senior Project Advisor before commencing the internship. Students can earn a maximum of 8 credits by pursuing multiple internships in the course of their 4-year degree program. Credits are awarded based on a weekly log of work done, internship report and evaluation submitted by the organization.

Prerequisite: Academic Advisor's permission in advance

DSCI 561/562/563 Laboratory in Agrochemical Bioscience 1/2/3 (2 credits each): TBA

This is a laboratory course on physico-chemistry, organic chemistry, and biological chemistry including microbiology. It aims to develop skills in carrying out experiments in a wide variety of branches in Agrochemical Biosciences with safety and efficiency. Students are expected to acquire necessary skills and knowledge needed for their Senior Project research. The course starts with the fundamental skills such as solvent extraction, buffer preparation, and then organic synthesis and the product identification. Biochemical subjects include protein extraction, fractionation by salting out and further analysis using electrophoresis. Additionally, students will learn kinetic analysis of the catalytic function of enzymes. Microbiological practice allows students to be familiar with the skills in isolating and growing useful microorganisms. In the latter part of the course, students will also learn genetic engineering skills.

Prerequisite: DSCI 360 Introduction to Agrochemical Bioscience AND Instructor's permission in advance

DSCI 571/572/573/574/575/576/577/578 Laboratory in Environmental Ecology 1-1/1-2/2-1/2-2/3-1/3-2/4-1/4-2 (1 credit each): TBA

1) In this course students learn about the structure of Japanese agriculture and cultivate the abilities required to do a statistical analysis of data.

2) Topics covered in this course are observation of tissues and organs of tree species, analysis of the physiological functions, observation of forest soil and trees, and practice for management of artificial forests.

3) This class is composed of two parts: 1) utilization of basic tools to conduct a performance test of agricultural machines, and 2) control using computer algorithm.

4) The following topics are included in this lab course: sampling of small animals such as insects and molluscs from the university campus and Handa-yama experimental forest, specimen preparation, identification, population density estimation, and heritability estimation.

Prerequisite: DSCI 370 Introduction to Environmental Ecology AND Instructor's permission in advance

DSCI 581/582/583 Laboratory in Applied Plant Science 1/2/3 (2 credits each): TBA

The course provides laboratory experiments of the basic techniques related to Plant Science and Molecular Biology, such as microscope operation to observe plant cells and micro-organisms, cross-pollination and pathogen-inoculation, nucleic acids and proteins extraction, and molecular biological analysis. It also provides the basic techniques related to Plant Science, Horticultural Science, and Crop Science, such as soil diagnosis, growth and physiological analysis of crops, compositional analysis of crops, and anatomical observation of crops.

Prerequisite: DSCI 381 Introduction to Applied Plant Science I AND DSCI 382 Introduction to Applied Plant Science II AND Instructor's permission in advance

DSCI 591/592/593 Laboratory in Animal Science 1/2/3 (2 credits each): TBA

1) Reproduction is a fundamental issue for the production/breeding of animals. To develop a better understanding of animal reproduction, this course is designed to experience genetic analysis, handling of germ cells and embryos.

2) Laboratory course about animal physiology, genetics and behavior. Objective of this course is to acquire the basic technique for analysis of animal physiology, genetics and behavior, and to apply it to various research areas.

3) Laboratory course for practical training on animal experimentation and animal food analysis. Objective of this course is to acquire proper knowledge and technique for treatment of experimental animals and analysis of animal foods.

Prerequisite: DSCI 390 Introduction to Animal Science AND Instructor's permission in advance

Research Seminar and Senior Project 卒業研究等

DCOR 601 Research Seminar (1~10 credit(s)): DISCOVERY FACULTY

Through research seminars, students will start narrowing down on the topics and research methods in preparation for the Senior Project. Each instructor will run the seminar differently, so take the first half of your third year to explore with whom you wish to work on your Senior Project by attending more than one research seminars.

Prerequisite: Instructor's permission in advance

DEAP 650 Applied Language Skills for Discovery Students (1.5 credits): BULIN AUBRA LEAH

This is a course for Discovery-Track students. A specific cohort is targeted each time the course runs (see online syllabus). The course aims to strengthen students' skills in reading and writing academic papers/theses. It also addresses some common issues that students have with writing academic papers/theses. Please note that the course deals primarily with issues that involve language skills and writing conventions, not content knowledge or research design/skills.

Prerequisite: DEAP 159. The course instructor reserves the right to make the final selection of students based on consideration of several factors (enrolment limit applies). See online syllabus for details

DCOR 699 Senior Project (10 credits): Senior Project Advisor

Senior Project is an opportunity for you to highlight your finding (or discovery!). If you choose the Discovery Track, you will complete your Senior Project in English supervised by a Discovery Faculty. We encourage you to start thinking what you want to do for your Senior Project early on. While some writing component is necessary, you may propose an alternative medium for the main portion of your Senior Project. For example, you may choose to produce visual products, such as video, photos, and art pieces if you consider these mediums can better represent your work, along with short essays. If you choose the Matching Track, follow the protocol of the department in which you pursue your Senior Project. For both tracks, students are expected to present their project in English before graduation.

Prerequisite: Instructor's permission in advance


Appendix B: Prerequisite Maps

Prerequisite maps are there to help you understand how courses are connected, and in which academic term they are offered. Detailed prerequisites are indicated in the Course List in Appendix B.


Here are some explanations of the prerequisite maps to follow.

1) Course Color Key:

- An orange color indicates that the course will be offered every year (See Example 1).
- A white color indicates that the course will be offered every two years (See Example 2).
- A purple color indicates that the course will be offered two times in three years (See Example 3).
- A blue color indicates that the course will be offered every three years (See Example 4).



Example 1 

Example 2 

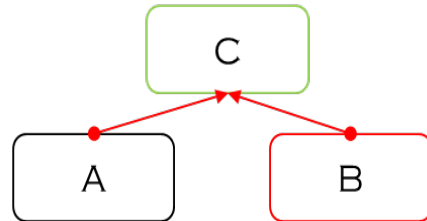
Example 3 

Example 4 

2) Arrow Key:

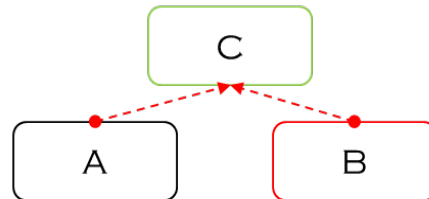
- Solid arrows  indicate prerequisites (or co-requisites) (see Example 1).
- Dashed arrows  indicate prerequisites (or co-requisites) with options (see Example 2).

Example 1



<A> AND are required to take <C>

Example 2

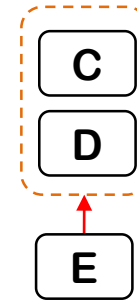


<A> OR are required to take <C>

3) Course Group Key:

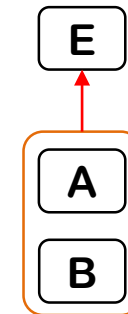
- Dashed lines surrounding multiple courses indicate courses with the same prerequisites (or co-requisites) (see example 1).
- Solid lines surrounding multiple courses indicate multiple prerequisites (or co-requisites) (see example 2).
- Dashed lines surrounding multiple courses indicate prerequisites (or co-requisites) with options (see example 3).

Example 1



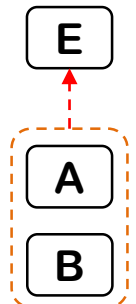
<E> is a prerequisite for <C> and <D>

Example 2



<A> AND are prerequisite for <E>

Example 3



<A> OR is prerequisite for <E>

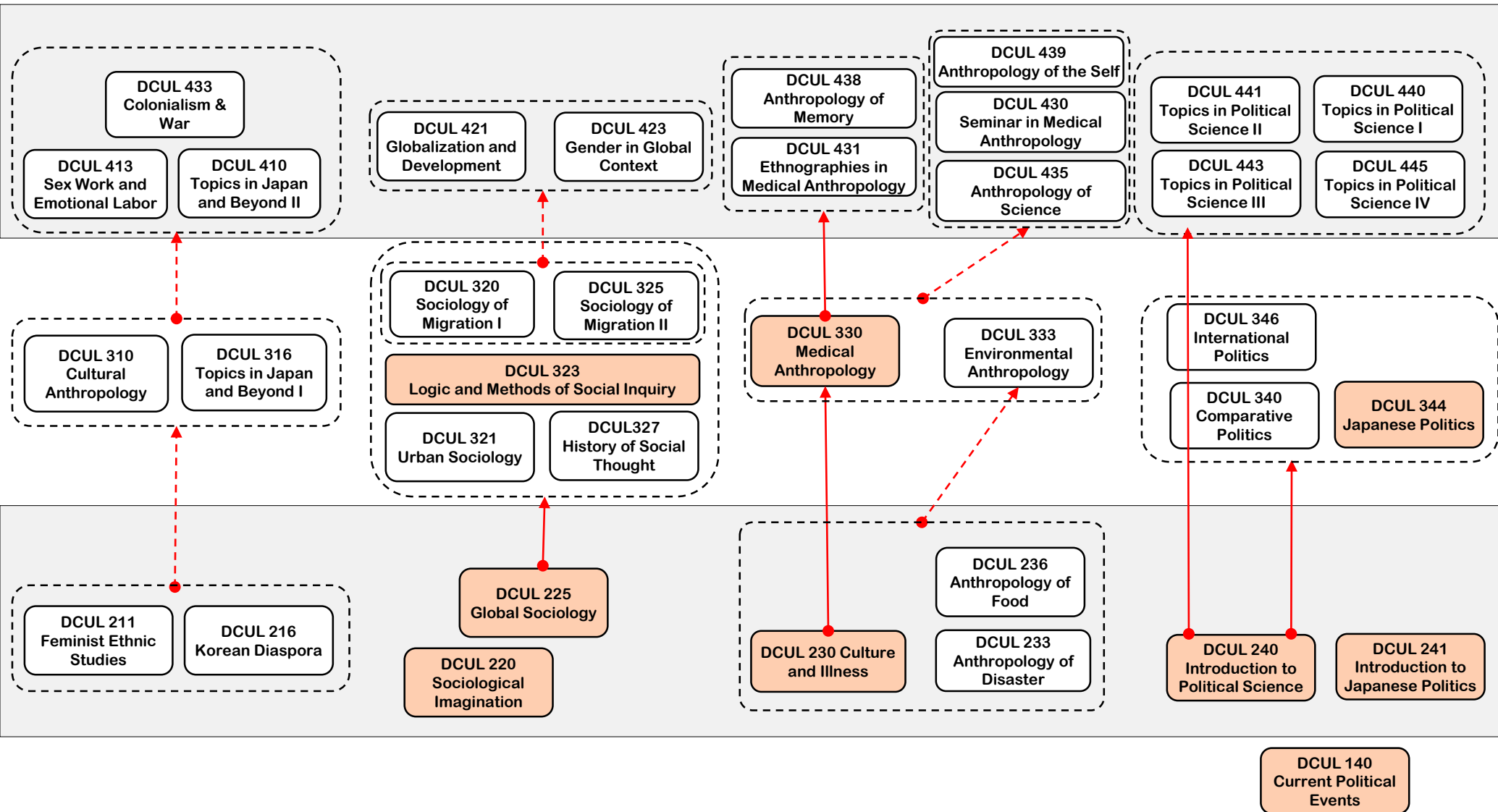
Cultural Diversity and Communities

Japan and Beyond

Migration and Communities

Environment and Health

Governance

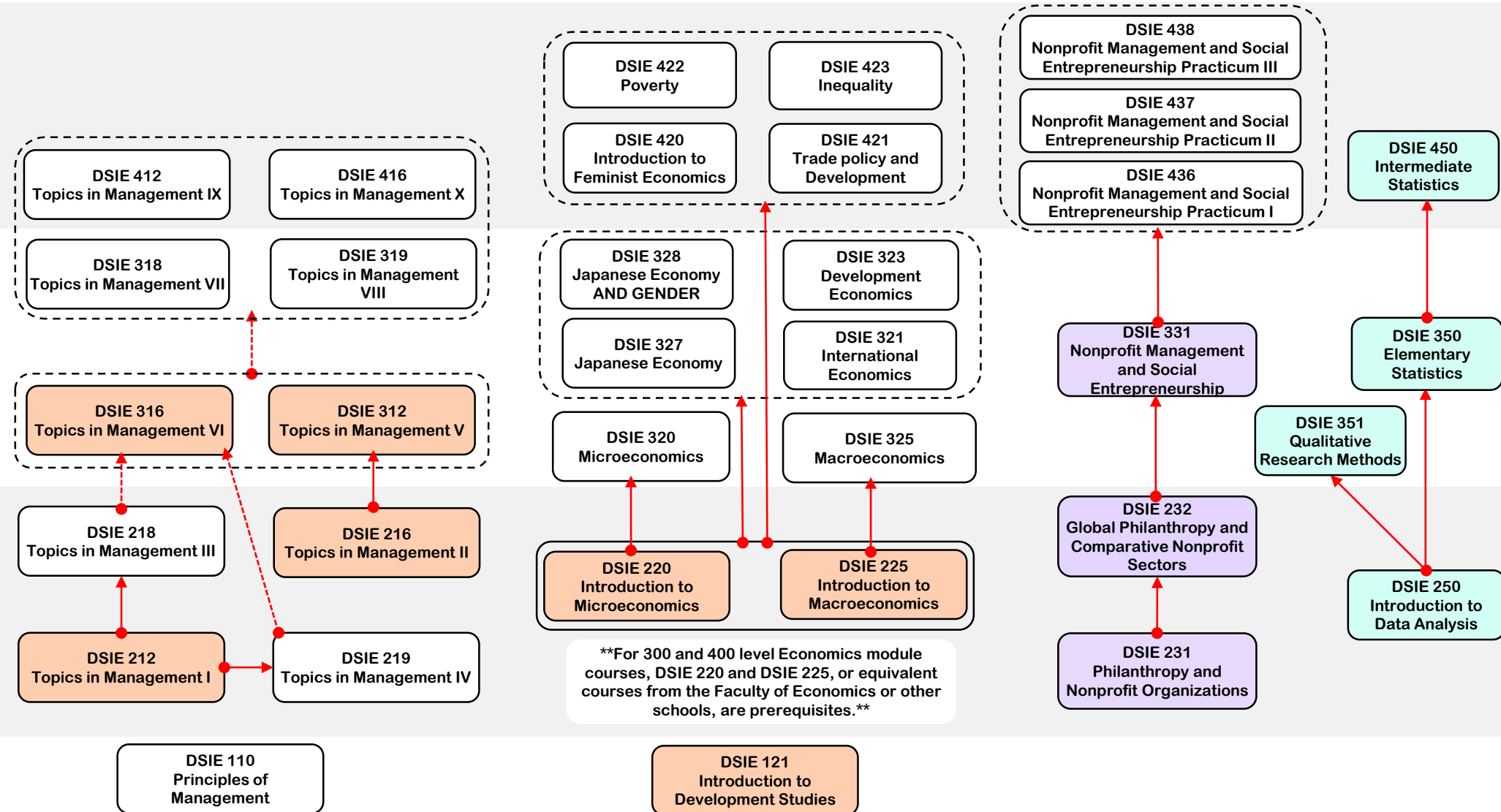


Social Innovation and Entrepreneurship

Management

economics

Nonprofit Management and Social Entrepreneurship



Appendix C : Contact Information

Discovery Core Faculty

Name	Specialization	Responsibility	Tel. (ext.)	Email
BULIN AUBRA LEAH	Academic English	Mentor, Language Advisor (English)	8519	bulina@okayama-u.ac.jp
TBD	Japanese Language	Mentor, Language Advisor (Japanese)	TBD	TBD
Md Azhar Uddin	Chemical Engineering (DSCI)	Academic Advisor	8897	alazhar@okayama-u.ac.jp
Jian Tang	Astrochemistry (DSCI)	Academic Advisor	7849	jtang@okayama-u.ac.jp
Michinobu Mino	Physics (DSCI)	Matching Advisor	7823	mino@okayama-u.ac.jp
Haeng-ja Chung	Cultural Anthropology (DCUL)	Academic Advisor	8536	hchung@okayama-u.ac.jp
Haruna Miyagawa	Sociology (DCUL)	Academic Advisor	7035	hmiyagawa@okayama-u.ac.jp
Tak Uesugi	Medical Anthropology (DCUL)	Academic Advisor	7227	takuesugi@okayama-u.ac.jp
Kimiko Osawa	Political Science (DCUL)	Academic Advisor	8328	Osawadiscovery@okayama-u.ac.jp
Yumiko Yamamoto	Economics (DSIE)	Academic Advisor	8380	yumikoyamamoto@okayama-u.ac.jp
Takayuki Yoshioka	Philanthropic Studies (DSIE)	Academic Advisor	8535	taka_yoshioka@okayama-u.ac.jp
Yuanyuan Gong	Human Resource Management (DSIE)	Academic Advisor	8379	yygong@okayama-u.ac.jp
Hisashi Datai	Agricultural Science (DSCI)	Academic Advisor	8372	hisashi@okayama-u.ac.jp
Takashi Tamura	Agricultural Science (DSCI)	Academic Advisor	8293	tktamura@okayama-u.ac.jp

Offices: All offices are noted using building marks found on the campus map plus office number.

To call from outside the University, dial 086-251-(extension)

Affiliated Faculty

Name	Responsibility	Faculty	Email
TBD	Director	TBD	TBD
Mamoru Ishida	Deputy Director	Institute for Education and Student Services	mamo@okayama-u.ac.jp
Michinobu Mino	Deputy Director	Discovery Program for Global Learners	mino@okayama-u.ac.jp
Yasutaka Kubo	Coordinator of Faculty of Agriculture	Agriculture	ykubo@okayama-u.ac.jp
Tatsuhiko Abo	Faculty of Matching Program	Science	tabo@okayama-u.ac.jp

Discovery Office (Student Affairs)

Location: General Education Building D, 6th Floor

Office Hours: 8:30 a.m. – 5:00 p.m.

Email: kyomu_discovery@adm.okayama-u.ac.jp

TEL: 086-251-7915