## Information Literacy

<table>
<thead>
<tr>
<th>Department</th>
<th>Category</th>
<th>Year/Required or Elective/Credit</th>
<th>Day/Hours/Place</th>
<th>Availability for the Lower-class Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department of Food Science and Technology</td>
<td>Basic Foundation Subjects</td>
<td>1/Required/2</td>
<td>First Semester Monday 13:00-14:30 IP Center</td>
<td>No</td>
</tr>
</tbody>
</table>

### Chief Instructor
SAKAI Noboru
My office: Bld.3 Rm. 116
Phone: 03-5463-0622
E-mail address: sakai@kaiyodai.ac.jp

### Office Hours
from 10 o'clock to the noon on Wednesday from 17 to 19 o'clock on a weekday.

### Instructors
Noboru Sakai & Mario Shibata (3rd period, Mon)

### Theme & Objectives (Target, Contents, Method)
Introduction to a computer system, software and networks.
Information Literacy is a class for understanding the basic components of a personal computer itself and information technology using with a personal computer.

### Academic Goal
An attainment goal of Information Literacy is to acquire the wide knowledge about personal computer and information technology.

### Description & Program
Lectures are given at terminal rooms of the Information Processing Center. Each student is assigned to a PC terminal and performs hands-on practices. Lectures cover the introduction to windows, file systems, computer networks, mailer, World-Wide Web (WWW), MS Power Point, MS Excel and MS word.

### Preparation & Review
Read a lesson schedule and prepare the lesson. Go over each lesson and a review test.

### Textbooks/References/URL
To be announced at each class.

### Evaluation Method
[Evaluation protocol]
Student’s result is evaluated by reports.

### Evaluation Criteria
In case the above-described aims of the course were accomplished, the final evaluating score between 60% and 100% will be awarded.

### About return of answer, etc.
Written assignments will be returned to students and comments will be provided during class.

### Other Information
(1) Students who failed getting the credit of this course should attend at the class held at the 5th period on Thursday (Hayashida’s class).
(2) Self-training using terminals is strongly recommended.
(3) Students should put in reports.
Information Literacy

<table>
<thead>
<tr>
<th>Department of Marine Policy and Culture</th>
<th>Category</th>
<th>Year/Required or Elective/Credit</th>
<th>Day/Hours/Place</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Department of Marine Policy and Culture</td>
<td>Basic Foundation Subjects</td>
<td>1/Required/2</td>
<td>First Semester Monday 13:00-14:30 IP Center</td>
<td>impossible</td>
</tr>
</tbody>
</table>

Chief Instructor: TAKAHASHI Chikashi

Room: 8-508
Contact: ctakah0(at sign)kaiyodai.ac.jp
Office Hours: Tell in the lecture.

Instructors

Takahashi Chikashi
HIDAI Haruko

Theme & Objectives (Target, Contents, Method)

Learning and Educational Objectives

Introduction to a computer system, software and networks.

Academic Goal

Students will acquire how to use e-mail and internet in the safe way. Word and Excell as academic skills.

Description & Program

Preparation & Review

We will study according to the following program.
1. Exercise of log in, Registration of courses
2. Set up of e-mail
3. How to search information in the library
4. Manners of e-mail
5. Word (1)
6. Word (2)
7. Word (3)
8. Powerpoint (1)
9. Powerpoint (2)
10. Ethics of information
11. Excel (1)
12. Excel (2)
13. Excel (3)
14. Excel (4)
15. Terminal examination
*Class plan may be subject to change.

Preparation: Contents of the program must be studied before lecture.
Review: To enrich your understanding, investigating thesis and book of references which you are interested in should be done.

Textbooks/References/URL

Evaluation Method

Your final record is graded as follows:
- Report (30 points)
- Intermediate exam (20 points)
- Final exam (50 points)

Evaluation Criteria

Credits will be given to those who exceed 3 aims of achievement over 60%.

About return of answer, etc.

After the final exam, comments on the exam will be provided at the designated time in the teachers’ room.

Other Information

Credits will not be given to those who are absent from class over 4 times. 3 days late will be counted as 1 absence.
### Information Literacy

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<tr>
<td>Department of Ocean Sciences</td>
<td>Basic Foundation Subjects</td>
<td>1/Required/2</td>
<td>First Semester Tuesday 14:40-16:10 IP Center</td>
<td>N/A</td>
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<table>
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<tr>
<th>Chief Instructor</th>
<th>Room</th>
<th>Contact</th>
<th>Office Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>YOSHIDA Jiro</td>
<td>Bldg. 9 Rm. 506</td>
<td><a href="mailto:jiroy@kaiyodai.ac.jp">jiroy@kaiyodai.ac.jp</a></td>
<td>To be announced at each class</td>
</tr>
</tbody>
</table>

#### Instructors
Dept. of Ocean Sciences: Jiro Yoshida et al. (4th period, Tue.)

#### Theme & Objectives (Target, Contents, Method)
Introduction to a computer system, software and networks.

#### Learning and Educational Objectives
B: Ethics necessary to engineer, C: Basic in science, I: Lifelong study

#### Academic Goal
1. To acquire the basic skills for operation of personal computer.
2. To acquire the basic skills for word processor and spreadsheet.
3. 

#### Description & Program
Lectures are given at terminal rooms of the Information Processing Center. Each student is assigned to a PC terminal and performs hands-on practices. Lectures cover the introduction to windows, file systems, computer networks, mailer, World Wide Web (WWW), MS Excel and MS word.

#### Preparation & Review
To study teaching materials provided at home

#### Textbooks/References/URL
To be announced at each class

#### Evaluation Method
Evaluating minor examinations, reports, calculations while operating PC in each class.

#### Evaluation Criteria
To clear the achievement goal of this class is the condition for pass (60%) and the achievement goal of the class is the condition for pass (60%).

#### About return of answer, etc.
Written assignments and tests will be returned to students and comments will be provided during class.

#### Other Information
1. Self-training using terminals is strongly encouraged.
2. Students should handed in reports.
# Information Literacy

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<td>First Semester Tuesday 16:20-17:50 IP Center</td>
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**Chief Instructor**

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<tr>
<th>Instructor</th>
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</tr>
</thead>
<tbody>
<tr>
<td>SHIRAI Takaaki</td>
<td>Rm3-317</td>
<td>0587</td>
<td>Tue 12-13. Rm3-317</td>
</tr>
</tbody>
</table>

## Instructors

SHIRAI, Takaaki, Endowed Laboratory of Salad Science

### Theme & Objectives (Target, Contents, Method)

Introduction to a computer system, software and networks. Information Literacy is a class for understanding the basic components of a personal computer itself and information technology using with a personal computer.

**Learning and Educational Objectives**

An attainment goal of Information Literacy is to acquire the wide knowledge about personal computer and information technology.

### Academic Goal

An attainment goal of Information Literacy is to acquire the wide knowledge about personal computer and information technology.

### Description & Program

Lectures are given at terminal rooms of the Information Processing Center. Each student is assigned to a PC terminal and performs hands-on practices. Lectures cover the introduction to MS Windows, file systems, computer networks, mailer, World-Wide Web system, MS Powerpoint, MS Excel and MS Word.

### Textbooks/References/URL

To be announced at each class.

### Evaluation Method

[Evaluation protocol]

Student's result is evaluated by the reports and final examination.

[Evaluation base]

In case the above-described aims of the course were accomplished, the final evaluating score between 60% and 100% will be awarded.

### Evaluation Criteria

Give high marks to understanding internet morality and security, and to smooth utilization of presentation, word-processing and spreadsheet applications.

### About return of answer, etc.

Written assignments and tests will be returned to students and comments will be provided during class.

### Other Information

Self-training using terminals is strongly recommended. Students should put in reports.
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<tr>
<td>TAKEDA Seiichi</td>
<td>Bldg. 9 Rm. 506</td>
<td><a href="mailto:jiroy@kaiydai.ac.jp">jiroy@kaiydai.ac.jp</a></td>
<td>To be announced at each class</td>
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## Instructors

Dept. of Ocean Sciences: Jiro Yoshida et al. (4th period, Tue.)

## Theme & Objectives (Target, Contents, Method)

Introduction to a computer system, software and networks.

## Learning and Educational Objectives

B: Ethics necessary to engineer, C: Basic in science, I: Lifelong study

## Academic Goal

1. To acquire the basic skills for operation of personal computer.
2. To acquire the basic skills for word processor and spreadsheet.
3. 

## Description & Program

Lectures are given at terminal rooms of the Information Processing Center. Each student is assigned to a PC terminal and performs hands-on practices. Lectures cover the introduction to windows, file systems, computer networks, mailer, World Wide Web (WWW), MS Excel and MS word.

## Preparation & Review

To study teaching materials provided at home

## Textbooks/References/URL

To be announced at each class

## Evaluation Method

Evaluating minor examinations, reports, calculations while operating PC in each class.

## Evaluation Criteria

To clear the achievement goal of this class is the condition for pass (60%).

## About return of answer, etc.

Reports will be returned, and explained in a class.

## Other Information

1. Self-training using terminals is strongly encouraged.
2. Students should handed in reports.
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<td>Department of Marine Biosciences</td>
<td>Basic Foundation Subjects</td>
<td>1/Required/2</td>
<td>First Semester Wednesday 16:20-17:50 IP Center</td>
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<th>Chief Instructor</th>
<th>Room</th>
<th>Contact</th>
<th>Office Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>YOKOTA Masashi</td>
<td></td>
<td></td>
<td>Teachers provide orientation at suitable times.</td>
</tr>
</tbody>
</table>

## Instructors

Masashi YOKOTA, Daisuke SHIODE, Masato ENDO, Shigehide IWATA

## Theme & Objectives (Target, Contents, Method)

**Academic Goal**

Introduction to a computer system, software and networks.

## Description & Program

Lectures are given at the computer laboratories in the Information Processing Center. Lectures cover an introduction to Windows, file systems, computer networks, mailer, World-Wide Web (WWW), MS Excel and MS Word. Each student is assigned a PC and performs hands-on drills on these subjects.

## Textbooks/References/URL

The teacher will indicate suitable materials during class.

## Evaluation Method

Evaluation is based on the contents of presentations, tests, reports and drills.

## Evaluation Criteria

About return of answer, etc.

If requested by the students and if appropriate, teachers may provide comments on the report on the submitted day.
### Methods of self-expression

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<tr>
<td>Department of Ocean Sciences</td>
<td>Basic Foundation Subjects</td>
<td>1/Required/2</td>
<td>First Semester Thursday 8:50-10:20 Bldg. 5 Rm. 410</td>
<td>-</td>
</tr>
</tbody>
</table>

**Chief Instructor**

<table>
<thead>
<tr>
<th>Room</th>
<th>Contact</th>
<th>Office Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thompson Mieko</td>
<td>Coordinator: OSHIMA Yoyoi (E-mail: <a href="mailto:yayoi@kaiyodai.ac.jp">yayoi@kaiyodai.ac.jp</a>, tel:03-5463-0646)</td>
<td>Thursday 12:00-13:00</td>
</tr>
</tbody>
</table>

**Instructors**

**Theme & Objectives (Target, Contents, Method)**

The course aims to develop the students’ ability in expression of ideas in persuasive manner, both in oral and written communication, through essay writing, discussions and oral presentations. The class will help students to develop their basic communication skills in international settings as well. Students in this university are required to have logical thinking ability, appropriate judgement, and responsibility to the society. To acquire these abilities, students in this class are supposed to write an academic essay and make an oral presentation.

**Learning and Educational Objectives**

A

**Academic Goal**

All the students should complete their academic essay and oral presentation. Through these activities, they will acquire academic writing, presentation skills, and their role in the collaborative works. (A)

**Description & Program**

The following is the major components of the program.
1. Introduction
2. Organizing thoughts
3. Reading for communication
4. Gathering information
5. Putting thoughts into writing
6. Outline
7. Paragraph writing
8. Essay writing in detail
9. Citation
10. Revision
11-13. Oral presentation
14. Summary and evaluation
15. Examination

**Preparation & Review**

Students should prepare for the task before each class and complete it after each class.

**Textbooks/References/URL**

The textbook will be noticed at the guidance.

**Evaluation Method**

- Understandings through the tasks written in worksheets, drafts (30 points)
- Essay writing (30 points)
- Oral presentations (20 points)
- Examination (20 points)

**Evaluation Criteria**

Students can get 60 points only when they are supposed to have enough ability in essay writing and oral presentation.

**About return of answer, etc.**

After the exam, comments on the exam will be provided at the designated time in the teachers’ room. As for written assignments, drafts and oral presentations, comments will be provided during class.
<table>
<thead>
<tr>
<th>Other Information</th>
</tr>
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<tbody>
<tr>
<td>Students should be present at the first class. The rules of the course will be explained at the first class.</td>
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</table>
## Methods of self-expression

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<th>Department</th>
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<th>Day/Hours/Place</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Department of Ocean Sciences</td>
<td>Basic Foundation Subjects</td>
<td>1/Required/2</td>
<td>First Semester Thursday 8:50-10:20 Lec. Bldg. Rm. 21</td>
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<table>
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<tr>
<th>Chief Instructor</th>
<th>Room</th>
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<th>Office Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISHII Kumiko</td>
<td>Rm. 5409</td>
<td>Coordinater: OSHIMA Yoyoi (E-mail: <a href="mailto:yayoi@kaiyodai.ac.jp">yayoi@kaiyodai.ac.jp</a>, tel: 03-5463-0646)</td>
<td>Thursday 12:00-13:00</td>
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</table>

### Instructors

The course aims to develop the students’ ability in expression of ideas in persuasive manner, both in oral and written communication, through essay writing, discussions and oral presentations. The class will help students to develop their basic communication skills in international settings as well. Students in this university are required to have logical shinking ability, appropriate judgement, and responsibility to the society. To acquire these abilities, students in this class are supposed to write an academic essay and make an oral presentation.

### Learning and Educational Objectives

- A

### Academic Goal

All the students should complete their academic essay and oral presentation. Thorough these activities, they will acquire academic writing, presentation skills, and their role in the collaborative works. (A)

### Description & Program

The following is the major components of the program.

1. Introduction
2. Organizing thoughts
3. Reading for communication
4. Gathering information
5. Putting thoughts into writing
6. Outline
7. Paragraph writing
8. Essay writing in detail
9. Citation
10. Revision
11-13. Oral presentation
14. Summary and evaluation
15. Examination

### Preparation & Review

Students should prepare for the task before each class and complete it after each class.

### Textbooks/References/URL

The textbook will be noticed at the guidance.

### Evaluation Method

<table>
<thead>
<tr>
<th>Evaluation Method</th>
<th>Evaluation Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Your final record is graded as follows: - Understandings through the tasks written in worksheets, drafts (30 points) - Essay writing (30 points) - Oral presentations (20 points) - Examination (20 points)</td>
<td>Students can get 60 points only when they are supposed to have enough ability in essay writing and oral presentation.</td>
</tr>
</tbody>
</table>

### About return of answer, etc.

After the exam, comments on the exam will be provided at the designated time in the teachers’ room. As for written assignments, drafts and oral presentations, comments will be provided during class.
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**Methods of self-expression**

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<tr>
<td>Department of Ocean Sciences</td>
<td>Basic Foundation Subjects</td>
<td>1/Required/2</td>
<td>First Semester Thursday 8:50-10:20 Lec. Bldg. Rm. 31</td>
<td>-</td>
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**Chief Instructor**

<table>
<thead>
<tr>
<th>Name</th>
<th>Room</th>
<th>Contact</th>
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<tbody>
<tr>
<td>OHBA Rieko</td>
<td>Rm. 5409</td>
<td>Coordinator: OSHIMA Yoyoi (E-mail: <a href="mailto:yayoi@kaiyodai.ac.jp">yayoi@kaiyodai.ac.jp</a>, tel: 03-5463-0646)</td>
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**Instructors**

written above

**Theme & Objectives (Target, Contents, Method)**

The course aims to develop the students’ ability in expression of ideas in a persuasive manner, both in oral and written communication, through essay writing, discussions and oral presentations. The class will help students to develop their basic communication skills in international settings as well. Students in this university are required to have logical thinking ability, appropriate judgement, and responsibility to the society. To acquire these abilities, students in this class are supposed to write an academic essay and make an oral presentation.

**Learning and Educational Objectives**

A

**Academic Goal**

All the students should complete their academic essay and oral presentation. Through these activities, they will acquire academic writing, presentation skills, and their role in the collaborative works. (A)

**Description & Program**

The following is the major components of the program.

1. Introduction
2. Organizing thoughts
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4. Gathering information
5. Putting thoughts into writing
6. Outline
7. Paragraph writing
8. Essay writing in detail
9. Citation
10. Revision
11-13. Oral presentation
14. Summary and evaluation
15. Examination

**Preparation & Review**

Students should prepare for the task before each class and complete it after each class.

**Textbooks/References/URL**

The textbook will be noticed at the guidance.

**Evaluation Method**

Your final record is graded as follows:
- Understandings through the tasks written in worksheets, drafts (30 points)
- Essay writing (30 points)
- Oral presentations (20 points)
- Examination (20 points)

**Evaluation Criteria**

Students can get 60 points only when they are supposed to have enough ability in essay writing and oral presentation.

**About return of answer, etc.**

After the exam, comments on the exam will be provided at the designated time in the teachers’ room. As for written assignments, drafts, and oral presentations, comments will be provided during class.
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# Methods of self-expression

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<tr>
<td>Department of Ocean Sciences</td>
<td>Basic Foundation</td>
<td>1/Required/2</td>
<td>First Semester Thursday 8:50-10:20 Lec. Bldg. Rm. 41</td>
<td>-</td>
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</table>

<table>
<thead>
<tr>
<th>Chief Instructor</th>
<th>Room</th>
<th>Contact</th>
<th>Office Hours</th>
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</table>
| OGASA Emiko      | Rm. 5409 | Coordinater: OSHIMA Yoyoi  
|                  |        | (E-mail: yayoi@kaiyodai.ac.jp, tel:03-5463-0646) | Thursday 12:00-13:00 |

## Instructors

Written above

## Theme & Objectives (Target, Contents, Method)

The course aims to develop the students’ ability in expression of ideas in persuasive manner, both in oral and written communication, through essay writing, discussions and oral presentations. The class will help students to develop their basic communication skills in international settings as well. Students in this university are required to have logical shinking ability, appropriate judgement, and responsibility to the society. To acquire these abilities, students in this class are supposed to write an academic essay and make an oral presentation.

## Learning and Educational Objectives

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## AcademicGoal

All the students should complete their academic essay and oral presentation. Thorough these activities, they will acquire academic writing, presentation skills, and their role in the collaborative works. (A)

## Description & Program

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## Preparation & Review

Students should prepare for the task before each class and complete it after each class.

## Textbooks/References/URL

The textbook will be noticed at the guidance.

## Evaluation Method

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<th>Evaluation Method</th>
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| Your final record is graded as follows:  
- Understandings through the tasks written in worksheets, drafts (30 points)  
- Essay writing (30 points)  
- Oral presentations (20 points)  
- Examination (20 points) | Students can get 60 points only when they are supposed to have enough ability in essay writing and oral presentation. |

## About return of answer, etc.

After the exam, comments on the exam will be provided at the designated time in the teachers’ room. As for written assignments, drafts and oral presentations, comments will be provided during class.
Other Information

Students should be present at the first class. The rules of the course will be explained at the first class.
Methods of self-expression

<table>
<thead>
<tr>
<th>Department of Marine Biosciences</th>
<th>Basic Foundation Subjects</th>
<th>1/Required/2</th>
<th>First Semester Thursday 10:30-12:00 Bldg. 5 Rm.410</th>
<th>Department/Marine Biosciences</th>
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<td>Coordinater: OHSHIMA Yoyoi (E-mail: <a href="mailto:yayoi@kaiyodai.ac.jp">yayoi@kaiyodai.ac.jp</a>, tel:03-5463-0646)</td>
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Instructors

Theme & Objectives (Target, Contents, Method)

The course aims to develop the students' ability in expression of ideas in persuasive manner, both in oral and written communication, through essay writing, discussions and oral presentations. The class will help students to develop their basic communication skills in international settings as well. Students in this university are required to have logical thinking ability, appropriate judgement, and responsibility to the society. To acquire these abilities, students in this class are supposed to write an academic essay and make an oral presentation.

Academic Goal

All the students should complete their academic essay and oral presentation. Thorough these activities, they will acquire academic writing, presentation skills, and their role in the collaborative works. (A)

Description & Program

The following is the major components of the program.
1. Introduction
2. Organizing thoughts
3. Reading for communication
4. Gathering information
5. Putting thoughts into writing
6. Outline
7. Paragraph writing
8. Essay writing in detail
9. Citation
10. Revision
11-13. Oral presentation
14. Summary and evaluation
15. Examination

Preparation & Review

Students should prepare for the task before each class and complete it after each class.

Textbooks/References/URL

The textbook will be noticed at the guidance.

Evaluation Method

Your final record is graded as follows:
- Understandings through the tasks written in worksheets, drafts (30 points)
- Essay writing (30 points)
- Oral presentations (20 points)
- Examination (20 points)

Evaluation Criteria

Students can get 60 points only when they are supposed to have enough ability in essay writing and oral presentation.

About return of answer, etc.

After the exam, comments on the exam will be provided at the designated time in the teachers' room. As for written
<table>
<thead>
<tr>
<th>Other Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students should be present at the first class. The rules of the course will be explained at the first class.</td>
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</table>
# Methods of self-expression

<table>
<thead>
<tr>
<th>Department</th>
<th>Category</th>
<th>Year/Required or Elective/Credit</th>
<th>Day/Hours/Place</th>
<th>Availability for the Lower-class Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department of Marine Biosciences</td>
<td>Basic Foundation Subjects</td>
<td>Required/2</td>
<td>First Semester Thursday 10:30-12:00 Lec. Bldg. Rm. 31</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chief Instructor</th>
<th>Room</th>
<th>Contact</th>
<th>Office Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>OHBA Rieko</td>
<td>Rm. 5409</td>
<td>Coordinater: OSHIMA Yoyoi (E-mail: <a href="mailto:yayoi@kaiyodai.ac.jp">yayoi@kaiyodai.ac.jp</a>, tel: 03-5463-0646)</td>
<td>Thursday 12:00-13:00</td>
</tr>
</tbody>
</table>

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## Instructors

### Theme & Objectives (Target, Contents, Method)

The course aims to develop the students’ ability in expression of ideas in persuasive manner, both in oral and written communication, through essay writing, discussions and oral presentations. The class will help students to develop their basic communication skills in international settings as well. Students in this university are required to have logical thinking ability, appropriate judgement, and responsibility to the society. To acquire these abilities, students in this class are supposed to write an academic essay and make an oral presentation.

### Learning and Educational Objectives

A

### Academic Goal

All the students should complete their academic essay and oral presentation. Thorough these activities, they will acquire academic writing, presentation skills, and their role in the collaborative works. (A)

### Description & Program

The following is the major components of the program.

1. Introduction
2. Organizing thoughts
3. Reading for communication
4. Gathering information
5. Putting thoughts into writing
6. Outline
7. Paragraph writing
8. Essay writing in detail
9. Citation
10. Revision
11-13. Oral presentation
14. Summary and evaluation
15. Examination

### Preparation & Review

Students should prepare for the task before each class and complete it after each class.

### Textbooks/References/URL

The textbook will be noticed at the guidance.

### Evaluation Method

Your final record is graded as follows:

- Understandings through the tasks written in worksheets, drafts (30 points)
- Essay writing (30 points)
- Oral presentations (20 points)
- Examination (20 points)

### Evaluation Criteria

Students can get 60 points only when they are supposed to have enough ability in essay writing and oral presentation.

---

## About return of answer, etc.

After the exam, comments on the exam will be provided at the designated time in the teachers’ room. As for written
<table>
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</tr>
</thead>
<tbody>
<tr>
<td>Department of Food Science and Technology</td>
<td>Basic Foundation Subjects</td>
<td>1/Required/2</td>
<td>First Semester Thursday 10:30-12:00 Lec.Bldg. Rm. 41</td>
<td>-</td>
</tr>
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</table>

### Chief Instructor

<table>
<thead>
<tr>
<th>Room</th>
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<tr>
<td>Rm. 5409</td>
<td>Coordinater: OSHIMA Yoyoi (E-mail: <a href="mailto:yayoi@kaiyodai.ac.jp">yayoi@kaiyodai.ac.jp</a>, tel:03-5463-0646)</td>
<td>Thursday 12:00-13:00</td>
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</table>

### Instructors

**OGASA Emiko**: Room 5409

### Theme & Objectives (Target, Contents, Method)

The course aims to develop the students' ability in expression of ideas in a persuasive manner, both in oral and written communication, through essay writing, discussions, and oral presentations. The class will help students develop their basic communication skills in international settings as well. Students in this university are required to have logical thinking ability, appropriate judgment, and responsibility to society. To acquire these abilities, students in this class are supposed to write an academic essay and make an oral presentation.

### Learning and Educational Objectives

- A

### Academic Goal

All the students should complete their academic essay and oral presentation. Through these activities, they will acquire academic writing, presentation skills, and their role in the collaborative works. (A)

### Description & Program

1. Introduction
2. Organizing thoughts
3. Reading for communication
4. Gathering information
5. Putting thoughts into writing
6. Outline
7. Paragraph writing
8. Essay writing in detail
9. Citation
10. Revision
11-13. Oral presentation
14. Summary and evaluation
15. Examination

### Preparation & Review

Students should prepare for the task before each class and complete it after each class.

### Textbooks/References/URL

The textbook will be noticed at the guidance.

### Evaluation Method

Your final record is graded as follows:
- Understandings through the tasks written in worksheets, drafts (30 points)
- Essay writing (30 points)
- Oral presentations (20 points)
- Examination (20 points)

### Evaluation Criteria

Students can get 60 points only when they are supposed to have enough ability in essay writing and oral presentation.

### About return of answer, etc.

After the exam, comments on the exam will be provided at the designated time in the teachers' room. As for written
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<tbody>
<tr>
<td>Basic Foundation Subjects</td>
<td>1/Required/2</td>
<td>First Semester Thursday 10:30–12:00 Lec.Bldg. Rm. 21</td>
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<th>Chief Instructor</th>
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<tbody>
<tr>
<td>ISHII Kumiko</td>
<td>Rm. 5409</td>
<td>Coordinater: OSHIMA Yoyoi (E-mail: <a href="mailto:yayoi@kaiyodai.ac.jp">yayoi@kaiyodai.ac.jp</a>, tel:03-5463-0646)</td>
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## Instructors

### Theme & Objectives (Target, Contents, Method)

The course aims to develop the students' ability in expression of ideas in persuasive manner, both in oral and written communication, through essay writing, discussions and oral presentations. The class will help students to develop their basic communication skills in international settings as well. Students in this university are required to have logical thinking ability, appropriate judgment, and responsibility to the society. To acquire these abilities, students in this class are supposed to write an academic essay and make an oral presentation.

### Description & Program

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### Preparation & Review

Students should prepare for the task before each class and complete it after each class.

### Textbooks/References/URL

The textbook will be noticed at the guidance.

### Evaluation Method

- Understandings through the tasks written in worksheets, drafts (30 points)
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### Evaluation Criteria

Students can get 60 points only when they are supposed to have enough ability in essay writing and oral presentation.

### About return of answer, etc.

After the exam, comments on the exam will be provided at the designated time in the teachers' room. As for written
assignments, drafts and oral presentations, comments will be provided during class.

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<tbody>
<tr>
<td>Department of Marine Policy and Culture</td>
<td>Basic Foundation Subjects</td>
<td>1/Required/2</td>
<td>First Semester Wednesday 8:50-10:20 Bldg. 5 Rm. 410</td>
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### Learning and Educational Objectives

A

### Academic Goal

All the students should complete their academic essay and oral presentation. Through these activities, they will acquire academic writing, presentation skills, and their role in the collaborative works. (A)

### Description & Program

The following is the major components of the program.
1. Introduction
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7. Paragraph writing
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11-13. Oral presentation
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15. Examination

### Preparation & Review

Students should prepare for the task before each class and complete it after each class.

### Textbooks/References/URL

The textbook will be noticed at the guidance.

### Evaluation Method

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- Examination (20 points)

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### Evaluation Criteria

About return of answer, etc.

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## Basic Calculus I

<table>
<thead>
<tr>
<th>Department of Ocean Sciences</th>
<th>Category</th>
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<th>Day/Hours/Place</th>
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</tr>
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<tbody>
<tr>
<td></td>
<td>Basic Foundation Subjects</td>
<td>1/Required/2</td>
<td>First Semester Wednesday 16:20-17:50 Lec. Bldg. Rm. 34</td>
<td></td>
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<table>
<thead>
<tr>
<th>Chief Instructor</th>
<th>Room</th>
<th>Contact</th>
<th>Office Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSUBOI Kenji</td>
<td>Bld.5 Rm. 102.</td>
<td><a href="mailto:tsubois@kaiyodai.ac.jp">tsubois@kaiyodai.ac.jp</a></td>
<td>from the noon to 13 O’clock on Thursday and Friday.</td>
</tr>
</tbody>
</table>

### Instructors
Kenji Tsuboi

### Theme & Objectives (Target, Contents, Method)

This class is an introductory course to the differential and integral calculus, which is important for the study of natural sciences. The aim of this lecture is the understanding and the mastery of methods of the calculus of one variable and their application.

### Academic Goal
1. Understanding of the definition of the derived functions of one variable. (C)
2. Calculation and application of the derived functions of one variable. (C)
3. Understanding of the definition of the integrated functions of one variable. (C)
4. Calculation of integrated functions of higher order.

### Description & Program

#### Preparation & Review
Solve the exercises in the lecture by yourself.
If you have some question in the lecture, don’t hesitate to ask it.
After the revision of the lecture, prepare for the next lecture if possible.

The plan of the lecture is as follows.

1. Definition of functions
2. Definition and Calculation of elementary functions.
3. Definition and Calculation of inverse trigonometrical functions
4. Definition of the limit of functions
5. Definition of the derived functions
6. Proof of formulae for derived functions
7. Calculation of derived functions (1)
8. Calculation of derived functions (2)
9. Calculation of derived functions of higher order
10. Application of the differentiation, theorem of l’hospital, Taylor expansion
11. Definition of the integrated functions
12. Proof of formulae for integrated functions
13. Calculation of integrated functions (1)
14. Calculation of integrated functions (2)
15. Application of the integration

### Textbooks/References/URL

- **textbook:** Y. Kamimura and K. Tsuboi, Suugaku-Nyuumon, Tokyo Kagaku Dojin

### Evaluation Method & Evaluation Criteria

<table>
<thead>
<tr>
<th>Evaluation Method</th>
<th>Evaluation Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Your final record is graded by the four examinations described below. The first examination is on the calculus of the limit and the differentiation. The second examination is on the application of the differentiation and the calculus of the integration. The third examination is on the application of the integration.</td>
<td>Your final record is over 60% only if you reach the goal described above.</td>
</tr>
</tbody>
</table>
The final examination is on the calculus and the application of the differentiation and the integration.

<table>
<thead>
<tr>
<th>About return of answer, etc.</th>
</tr>
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<tbody>
<tr>
<td>In appointed time after finishing an examination, the answer sheets of the examination are returned to the students and the answer of the examination is explained</td>
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</table>

<table>
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<tr>
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<tbody>
<tr>
<td>This lecture is connected with Elementary Calculus II.</td>
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</table>
# Basic Calculus I

<table>
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<th>Department</th>
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</thead>
<tbody>
<tr>
<td>Department of Ocean Sciences</td>
<td>Basic Foundation Subjects</td>
<td>1/Required/2</td>
<td>First Semester Wednesday 16:20–17:50 Lec. Bldg. Rm. 42</td>
<td></td>
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</tbody>
</table>

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<tr>
<th>Chief Instructor</th>
<th>Room</th>
<th>Contact</th>
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</tr>
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<tbody>
<tr>
<td>NAKASHIMA Kimie</td>
<td>Bld. 5 Rm. 106</td>
<td>Phone: 03–5463–0637 E-mail <a href="mailto:nkimie@kaiyodai.ac.jp">nkimie@kaiyodai.ac.jp</a></td>
<td>From the noon to 13 O’clock on Wednesday and Friday</td>
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</tbody>
</table>

## Instructors

Kimie Nakashima

## Theme & Objectives (Target, Contents, Method)

This is an introductory course of differential and integral calculus, which is important and necessary to study natural science. The aim of this lecture is to understand and master methods and their applications of differential and integral calculus with one variable.

## Academic Goal

Students are supposed to learn
1. Definition of differentiation with one variable
2. Calculation and application of differentiation with one variable
3. Definition of integration with one variable
4. Calculation and application of integration with one variable

## Description & Program

Plan of this lecture is as follows:
1. Limit of mathematical sequence (1)
2. Limit of mathematical sequence (2)
3. Elementary functions.
4. Inverse trigonometrical functions
5. Limit of functions
6. Differentiation
7. Calculation of differentiation (1)
8. Calculation of differentiation (2)
9. Calculation of higher order differentiation
10. Application of differentiation, theorem of l’hospital, Taylor expansion
11. Definition of integration
12. Proof of formulae for integration
13. Calculation of integration (1)
14. Calculation of integration (2)
15. Application of integration

## Preparation & Review

Solve problems in related exercises in the textbook after reviewing contents of lectures.

## Textbooks/References/URL


## Evaluation Method

<table>
<thead>
<tr>
<th>Evaluation Method</th>
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<tbody>
<tr>
<td>Your final record is graded by the examination (Mid term examination (30% × 2), final exam (40%).)</td>
<td>Your final record is over 60% only if you reach the goal described above.</td>
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</table>

## About return of answer, etc.

In appointed time after finishing an examination, the answer sheets of the examination are returned to the students and the answer of the examination is explained.

## Other Information
This lecture is connected Elementary Calculus II.
### Basic Calculus I

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<tr>
<td>Department of Marine Biosciences</td>
<td>Basic Foundation Subjects</td>
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<td>First Semester Monday 13:00-14:30 Lec. Bldg. Rm. 32</td>
<td></td>
</tr>
</tbody>
</table>

**Chief Instructor**

HAGA Junichi

**Instructors**

Jun-ichi Haga

### Theme & Objectives (Target, Contents, Method)

This class is an introductory course to the differential and integral calculus, which is important for the study of natural sciences. The aim of this lecture is the understanding and the mastery of methods of the calculus of one variable and their application.

### Academic Goal

1. Understanding of the definition of the derived functions of one variable. (C)
2. Calculation and application of the derived functions of one variable. (C)
3. Understanding of the definition of the integrated functions of one variable. (C)
4. Calculation

### Description & Program

1. Definition of Composite Functions and Elementary Functions
2. Equations of Inverse Trigonometric functions
3. Exercise of the differential calculus learning in a third-year high school course
4. Derivative of the product and quotient. Synthetic derivative of the function and Derivative of trigonometric functions
5. Derivative of the exponential function and the logarithmic function
6. Exercise of Indefinite and Definite integrals computation learning in a third-year high school course
7. Indefinite integral (1) (2)
8. Integration by substitution (1) (2)
9. Integration by parts
10. Definite integral (1) (2)
11. Definite integral (3)
12. Limit of the value of functions
13. Differentiation for a university course
14. Integration for a university course
15. Differential Equation of form of separation of variables

### Preparation & Review

**[Preparation]**

You know Mathematics is an accumulation of training. Every class an examination is carried out for motivating to learn. In every class, it may be given time of the exercise, but students not to complete it in time should prepare it before.

### Textbooks/References/URL

Textbook is "Suugaku Nyuumon", by Y. Kamimura and K. Tsuboi, Tokyo Kagaku Dojin. References are "Nyumon Bibunsekibun", by T. Miyake, Baifuukan. The homework during summer vacation is set problems out of "Bibunsekibungaku no Kiso" by H. Mizumoto, Baifuukan. I

### Evaluation Method

As a mark given for class participation, eleven small tests and eight homeworks and three practices are each marked out of 100, a homework during summer vacation out of 300, which are amounted to 2500. Further, five proficiency tests are marked each out of 500, which are

### Evaluation Criteria

Your final record is graded by the average mark of 5000.
amounted to 2500.

<table>
<thead>
<tr>
<th><strong>About return of answer, etc.</strong></th>
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</thead>
<tbody>
<tr>
<td>I will return all examinations. Expect eleven small tests, I will give suggested answers for every examinations.</td>
</tr>
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</table>

<table>
<thead>
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<tbody>
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### Basic Calculus I

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<th>1/Required/2</th>
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</thead>
</table>

#### Chief Instructor
HIRATA Daisuke

#### Instructors
Daisuke Hirata

#### Theme & Objectives (Target, Contents, Method)
This class is an introductory course to the differential and integral calculus, which is important for the study of natural sciences. The aim of this lecture is the understanding and the mastery of methods of the calculus of one variable and their application.

#### Academic Goal
1. Understanding of the definition of the derivatives of one variable. (C)
2. Calculation and application of the derivatives of one variable. (C)
3. Understanding of the definition of the integration of one variable. (C)
4. Calculation and application

#### Description & Program
1. Definition of functions
2. Definition and Calculation of elementary functions
3. Definition and Calculation of inverse trigonometrical functions
4. Definition of the limit of functions
5. Definition of the derived functions
6. Proof of formulae for derived functions
7. Calculation of derived functions (1)
8. Calculation of derived functions (2)
9. Calculation of derived functions of higher order
10. Application of the differentiation, l’Hopital’s theorem, Taylor expansion
11. Definition of the integrated functions
12. Proof of formulae for integrated functions
13. Calculation of integrated functions (1)
14. Calculation of integrated functions (2)
15. Application of the integration

#### Preparation & Review
- You should prepare for the next lecture in the textbook if possible.
- Solve the exercises in the lecture by yourself.
- If you have some question in the lecture, don’t hesitate to ask it.

#### Textbooks/References/URL
「Suugaku-Nyuuumon」 (Y. Kamimura and K. Tsuboi, Tokyo Kagaku Dojin)

#### Evaluation Method
Your final record is graded by the four examinations described below.
- The first examination is on the calculation of elementary functions and the limit of one variable.
- The second examination is on the calculation of the differentiation and its application.
- The third examination is on the calculation of indefinite integrals.
- The final examination is on the calculus and the application of the differentiation and the integration.

#### Evaluation Criteria
Your final record is over 60% only if you reach the goal described above.
Each of reporting assignments or examination papers is returned and elucidated in a class.

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<tbody>
<tr>
<td>This lecture is connected with Elementary Calculus II.</td>
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<tr>
<td>First year students of the department of Marine Biosciences whose ID numbers end with an even number must take this course. This only applies to the first year students.</td>
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# Basic Calculus I

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<tr>
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<td>Basic Foundation Subjects</td>
<td>1/Required/2</td>
<td>First Semester Thursday 13:00-14:30 Lec. Bldg. Rm. 32</td>
<td></td>
</tr>
</tbody>
</table>

**Chief Instructor**

HAGA Junichi

**Room**

**Contact**

**Office Hours**

**Instructors**

Jun-ichi Haga

**Theme & Objectives (Target, Contents, Method)**

This class is an introductory course to the differential and integral calculus, which is important for the study of natural sciences. The aim of this lecture is the understanding and the mastery of methods of the calculus of one variable and their application.

**Learning and Educational Objectives**

C: Basic of Science

**Academic Goal**

1. Understanding of the definition of the derived functions of one variable. (C)
2. Calculation and application of the derived functions of one variable. (C)
3. Understanding of the definition of the integrated functions of one variable. (C)
4. Calculatio

**Description & Program**

1. Definition of Composite Functions and Elementary Functions
2. Equations of Inverse Trigonometric functions
3. Exercise of the differential calculus learning in a third-year high school course
4. Derivative of the product and quotient. Synthetic derivative of the function and Derivative of trigonometric functions
5. Derivative of the exponential function and the logarithmic function
6. Exercise of Indefinite and Definite integrals computation learning in a third-year high school course
7. Indefinite integral (1) (2)
8. Integration by substitution (1) (2)
9. Integration by parts
10. Definite integral (1) (2)
11. Definite integral (3)
12. Limit of the value of functions
13. Differentiation for a university course
14. Integration for a university course
15. Differential Equation of form of separation of variables

**Preparation & Review**

**【Preparation】**

You know Mathematics is an accumulation of training s. Every class an examination is carried out for motivating to learn. In every class, it may be given time of the exercise, but students not to complete it in time should prepare it befo

**Textbooks/References/URL**

Textbook is "Suugaku Nyuumon", by Y. Kamimura and K. Tsuboi, Tokyo Kagaku Dojin. References are "Nyumon Bibunsekibun", by T. Miyake, Baifuukan. The homework during summer vacation is set problems out of "Bibunsekibungaku no Kiso" by H. Mizumoto, Baifuukan. I

**Evaluation Method**

As a mark given for class participation, eleven small tests and eight homeworks and three practices are each marked out of 100, a homework during summer vacation out of 300, which are amounted to 2500. Further, five proficiency tests are marked each out of 500, which are

**Evaluation Criteria**

Your final record is graded by the average mark of 5000.
amounted to 2500.

**About return of answer, etc.**

I will return all examinations. Expect eleven small tests, I will give suggested answers for every examinations.

**Other Information**

This subject is connected with Elementary Calculus II
# Basic Calculus I

<table>
<thead>
<tr>
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<td>First Semester Thursday 13:00–14:30 Lec. Bldg. Rm. 34</td>
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<th>Chief Instructor</th>
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</tr>
</thead>
<tbody>
<tr>
<td>HIRATA Daisuke</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Instructors

Daisuke Hirata

## Theme & Objectives (Target, Contents, Method)

This class is an introductory course to the differential and integral calculus, which is important for the study of natural sciences. The aim of this lecture is the understanding and the mastery of methods of the calculus of one variable and their application.

### Academic Goal

1. Understanding of the definition of the derivatives of one variable. (C)
2. Calculation and application of the derivatives of one variable. (C)
3. Understanding of the definition of the integration of one variable. (C)
4. Calculation and application

### Description & Program

1. Definition of functions
2. Definition and Calculation of elementary functions
3. Definition and Calculation of inverse trigonometrical functions
4. Definition of the limit of functions
5. Definition of the derived functions
6. Proof of formulae for derived functions
7. Calculation of derived functions (1)
8. Calculation of derived functions (2)
9. Calculation of derived functions of higher order
10. Application of the differentiation, l’Hopital’s theorem, Taylor expansion
11. Definition of the integrated functions
12. Proof of formulae for integrated functions
13. Calculation of integrated functions (1)
14. Calculation of integrated functions (2)
15. Application of the integration

### Preparation & Review

- You should prepare for the next lecture in the textbook if possible.
- Solve the exercises in the lecture by yourself.
- If you have some question in the lecture, don’t hesitate to ask it.

## Textbooks/References/URL

「Suugaku-Nyuumon」 (Y. Kamimura and K. Tsuboi, Tokyo Kagaku Dojin)

## Evaluation Method

Your final record is graded by the four examinations described below.

- The first examination is on the calculation of elementary functions and the limit of one variable.
- The second examination is on the calculation of the differentiation and its application.
- The third examination is on the calculation of indefinite integrals.
- The final examination is on the calculus and the application of the differentiation and the integration.

## Evaluation Criteria

Your final record is over 60% only if you reach the goal described above.
### About return of answer, etc.

Each of reporting assignments or examination papers is returned and elucidated in a class.

### Other Information

This lecture is connected with Elementary Calculus II. First year students of the department of Food Science and Technology must take this course. This only applies to the first year students.
## Basic Calculus II

<table>
<thead>
<tr>
<th>Department</th>
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<tbody>
<tr>
<td>Department of Ocean Sciences</td>
<td>Basic Foundation Subjects</td>
<td>1/Required/2</td>
<td>First Semester Friday 13:00-14:30 Lec. Bldg. Rm. 34</td>
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<table>
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<tr>
<th>Chief Instructor</th>
<th>Room</th>
<th>Contact</th>
<th>Office Hours</th>
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</thead>
<tbody>
<tr>
<td>TSUBOI Kenji</td>
<td>Bld.5 Rm. 102</td>
<td><a href="mailto:tsubois@kaiyodai.ac.jp">tsubois@kaiyodai.ac.jp</a></td>
<td>from the noon to 13 O’clock on Thursday and Friday.</td>
</tr>
</tbody>
</table>

### Instructors

Kenji Tsuboi

### Theme & Objectives (Target, Contents, Method)

This class is an introductory course to the differential and integral calculus, which is important for the study of natural sciences. The aim of this lecture is the understanding and the mastery of methods of the calculus of one variable and their application.

### Learning and Educational Objectives

C: Basic Science

### Description & Program

The plan of the lecture is as follows.

1. Definition of functions
2. Definition and Calculation of elementary functions.
3. Definition and Calculation of inverse trigonometrical functions
4. Definition of the limit of functions
5. Definition of the derived functions
6. Proof of formulae for derived functions
7. Calculation of derived functions (1)
8. Calculation of derived functions (2)
9. Calculation of derived functions of higher order
10. Application of the differentiation, theorem of l’hospital, Taylor expansion
11. Definition of the integrated functions
12. Proof of formulae for integrated functions
13. Calculation of integrated functions (1)
14. Calculation of integrated functions (2)
15. Application of the integration

### Preparation & Review

Solve the exercises in the lecture by yourself.

If you have some question in the lecture, don’t hesitate to ask it. After the revision of the lecture, prepare for the next lecture if possible.

### Textbooks/References/URL


### Evaluation Method

Your final record isgraded by the four examinations described below.

The first examination is on the calculus of the limit and the differentiation.

The second examination is on the application of the differentiation and the calculus of the integration.

The third examination is on the application of the integration.

### Evaluation Criteria

Your final record is over 60% only if you reach the goal described above.
<table>
<thead>
<tr>
<th>About return of answer, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>In appointed time after finishing an examination, the answer sheets of the examination are returned to the students and the answer of the examination is explained.</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Other Information</th>
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<tbody>
<tr>
<td>This lecture is connected with Elementary Calculus I.</td>
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# Basic Calculus II

<table>
<thead>
<tr>
<th>Department</th>
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<tr>
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<td>Basic Foundation Subjects</td>
<td>1/Required/2</td>
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<tr>
<th>Chief Instructor</th>
<th>Room</th>
<th>Contact</th>
<th>Office Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAKASHIMA Kimie</td>
<td>Bld. 5 Rm. 106</td>
<td>Phone: 03-5463-0637 E-mail: <a href="mailto:nkimie@kaiyodai.ac.jp">nkimie@kaiyodai.ac.jp</a></td>
<td>From the noon to 3 O’clock on Wednesday and Friday.</td>
</tr>
</tbody>
</table>

## Instructors

Kimie Nakashima

## Theme & Objectives (Target, Contents, Method)

This is an introductory course of differential and integral calculus, which is important and necessary to study natural science. The aim of this lecture is to understand and master methods and their applications of differential and integral calculus with one valuable.

## Academic Goal

Students are supposed to learn
1. Definition of differentiation with one variable
2. Calculation and application of differentiation with one variable
3. Definition of integration with one variable
4. Calculation and application of integration with one variable

## Description & Program

Plan of this lecture:
1. Limit of mathematical sequence (1)
2. Limit of mathematical sequence (2)
3. Elementary functions.
4. Inverse trigonometrical functions
5. Limit of functions
6. Differentiation
7. Calculation of differentiation (1)
8. Calculation of differentiation (2)
9. Calculation of higher order differentiation
10. Application of differentiation, theorem of l’hospital, Taylor expansion
11. Definition of integration
12. Proof of formulae for integration
13. Calculation of integration (1)
14. Calculation of integration (2)
15. Application of integration

## Preparation & Review

Solve problems in related exercises in the textbook after reviewing contents of lectures.

## Textbooks/References/URL


## Evaluation Method

| Your final record is graded by the examination (Mid term examination (30% × 2), final exam (40%)). |
| Your final record is over 60% only if you reach the goal described above. |

## About return of answer, etc.

In appointed time after finishing an examination, the answer sheets of the examination are returned to the students and the answer of the examination is explained

## Other Information
This lecture is connected Elementary Calculus I.
Basic Calculus II

<table>
<thead>
<tr>
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<tr>
<td>Department of Marine Biosciences</td>
<td>Basic Foundation Subjects</td>
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<td>First Semester Monday 14:40-16:10 Lec. Bldg. Rm. 32</td>
<td></td>
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</table>

Instructors

Jun-ichi Haga

Theme & Objectives (Target, Contents, Method)

This class is an introductory course to the differential and integral calculus, which is important for the study of natural sciences. The aim of this lecture is the understanding and the mastery of methods of the calculus of one variable and their application.

Academic Goal

1. Understanding of the definition of the derived functions of one variable. (C)
2. Calculation and application of the derived functions of one variable. (C)
3. Understanding of the definition of the integrated functions of one variable. (C)
4. Calculation

Description & Program

1. Definition of Composite Functions and Elementary Functions
2. Equations of Inverse Trigonometric functions
3. Exercise of the differential calculus learning in a third-year high school course
4. Derivative of the product and quotient, Synthetic derivative of the function and Derivative of trigonometric functions
5. Derivative of the exponential function and the logarithmic function
6. Exercise of Indefinite and Definite integrals computation learning in a third-year high school course
7. Indefinite integral (1) (2)
8. Integration by substitution (1) (2)
9. Integration by parts
10. Definite integral (1) (2)
11. Definite integral (3)
12. Limit of the value of functions
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14. Integration for a university course
15. Differential Equation of form of separation of variables

Preparation & Review

【Preparation】
You know Mathematics is an accumulation of training. Every class an examination is carried out for motivating to learn. In every class, it may be given time of the exercise, but students not to complete it in time should prepare it before

Textbooks/References/URL


Evaluation Method

As a mark given for class participation, eleven small tests and eight homeworks and three practices are each marked out of 100, a homework during summer vacation out of 300, which are amounted to 2500. Further, five proficiency tests are marked each out of 500, which are

Evaluation Criteria

Your final record is graded by the average mark of 5000.
The total amounted to 2500.

### About return of answer, etc.

I will return all examinations. Expect eleven small tests. I will give suggested answers for every examination.

### Other Information

This subject is connected with Elementary Calculus.
## Basic Calculus II

<table>
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<tr>
<th>Department</th>
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</table>

**Chief Instructor**

HIRATA Daisuke

<table>
<thead>
<tr>
<th>Room</th>
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### Instructors

Daisuke Hirata

### Theme & Objectives (Target, Contents, Method)

This class is an introductory course to the differential and integral calculus, which is important for the study of natural sciences. The aim of this lecture is the understanding and the mastery of methods of the calculus of one variable and their application.

### Academic Goal

1. Understanding of the definition of the derivatives of one variable. (C)
2. Calculation and application of the derivatives of one variable. (C)
3. Understanding of the definition of the integration of one variable. (C)
4. Calculation and application

### Description & Program

1. Definition of functions
2. Definition and Calculation of elementary functions
3. Definition and Calculation of inverse trigonometrical functions
4. Definition of the limit of functions
5. Definition of the derived functions
6. Proof of formulae for derived functions
7. Calculation of derived functions (1)
8. Calculation of derived functions (2)
9. Calculation of derived functions of higher order
10. Application of the differentiation, l’Hopital’s theorem, Taylor expansion
11. Definition of the integrated functions
12. Proof of formulae for integrated functions
13. Calculation of integrated functions (1)
14. Calculation of integrated functions (2)

### Preparation & Review

You should prepare for the next lecture in the textbook if possible. Solve the exercises in the lecture by yourself. If you have some question in the lecture, don’t hesitate to ask it.

### Textbooks/References/URL

『Suugaku-Nyuuumon』 (Y. Kamimura and K. Tsuboi, Tokyo Kagaku Dojin)

### Evaluation Method

Your final record is graded by the four examinations described below.

- The first examination is on the calculation of elementary functions and the limit of one variable.
- The second examination is on the calculation of the differentiation and its application.
- The third examination is on the calculation of indefinite integrals.
- The final examination is on the calculus and the application of the differentiation and the integration.

### Evaluation Criteria

Your final record is over 60% only if you reach the goal described above.
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<td>This lecture is connected with Elementary Calculus I.</td>
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<tr>
<td>First year students of the department of Marine Biosciences whose ID numbers end with an even number must take this course. This only applies to the first year students.</td>
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### Instructors

Jun-ichi Haga

### Theme & Objectives (Target, Contents, Method)

This class is an introductory course to the differential and integral calculus, which is important for the study of natural sciences. The aim of this lecture is the understanding and the mastery of methods of the calculus of one variable and their application.

### Academic Goal

1. Understanding of the definition of the derived functions of one variable. (C)
2. Calculation and application of the derived functions of one variable. (C)
3. Understanding of the definition of the integrated functions of one variable. (C)
4.  Calculation

### Description & Program

1. Definition of Composite Functions and Elementary Functions
2. Equations of Inverse Trigonometric functions
3. Exercise of the differential calculus learning in a third-year high school course
4. Derivative of the product and quotient. Synthetic derivative of the function and Derivative of trigonometric functions
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6. Exercise of Indefinite and Definite integrals computation learning in a third-year high school course
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11. Definite integral (3)
12. Limit of the value of functions
13. Differentiation for a university course
14. Integration for a university course
15. Differential Equation of form of separation of variables

### Preparation & Review

**Preparation**

You know Mathematics is an accumulation of training s. Every class an examination is carried out for motivating to learn. In every class, it may be given time of the exercise, but students not to complete it in time should prepare it before.

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### Evaluation Method

As a mark given for class participation, eleven small tests and eight homeworks and three practices are each marked out of 100, a homework during summer vacation out of 300, which are amounted to 2500. Further, five proficiency tests are marked each out of 500, which are

### Evaluation Criteria

Your final record is graded by the average mark of 5000.
amounted to 2500.

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<td></td>
</tr>
</tbody>
</table>

**Chief Instructor**

HIRATA Daisuke

## Instructors

Daisuke Hirata

### Theme & Objectives (Target, Contents, Method)

This class is an introductory course to the differential and integral calculus, which is important for the study of natural sciences. The aim of this lecture is the understanding and the mastery of methods of the calculus of one variable and their application.

### Academic Goal

1. Understanding of the definition of the derivatives of one variable. (C)
2. Calculation and application of the derivatives of one variable. (C)
3. Understanding of the definition of the integration of one variable. (C)
4. Calculation and application

### Description & Program

1. Definition of functions
2. Definition and Calculation of elementary functions
3. Definition and Calculation of inverse trigonometrical functions
4. Definition of the limit of functions
5. Definition of the derived functions
6. Proof of formulae for derived functions
7. Calculation of derived functions (1)
8. Calculation of derived functions (2)
9. Calculation of derived functions of higher order
10. Application of the differentiation. L’Hospital’s theorem, Taylor expansion
11. Definition of the integrated functions
12. Proof of formulae for integrated functions
13. Calculation of integrated functions (1)
14. Calculation of integrated functions (2)
15. Application of the integration

### Preparation & Review

You should prepare for the next lecture in the textbook if possible. Solve the exercises in the lecture by yourself. If you have some question in the lecture, don’t hesitate to ask it.

### Textbooks/References/URL

『Suugaku-Nyuumon』 (Y. Kamimura and K. Tsuboi, Tokyo Kagaku Dojin)

### Evaluation Method

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- The third examination is on the calculation of indefinite integrals.
- The final examination is on the calculus and the application of the differentiation and the integration.

### Evaluation Criteria

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**Fundamental Biology**

<table>
<thead>
<tr>
<th>Department</th>
<th>Category</th>
<th>Year/Required or Elective/Credit</th>
<th>Day/Hours/Place</th>
<th>Availability for the Lower-class Students</th>
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<tr>
<td>Department of Ocean Sciences</td>
<td>Basic Foundation Subjects</td>
<td>1/Required/2</td>
<td>First Semester Thursday 10:30–12:00 Lec. Bldg. Lecture Hall</td>
<td></td>
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</table>

**Chief Instructor**

<table>
<thead>
<tr>
<th>Room</th>
<th>Contact</th>
<th>Office Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name Bld.–Second Rom.– 3110</td>
<td>Email address – ****@kaiyodai.ac.jp ****=hsuzuk</td>
<td>Please email and make an appointment before visiting the teacher’s office.</td>
</tr>
</tbody>
</table>

**Instructors**

SUZUKI Hidekazu, MOTEKI Masato, MIYAZAKI Naho, and others

**Theme & Objectives (Target, Contents, Method)**

This course reviews fundamental knowledge and presents a summary of the latest information in life sciences in order to make it easy for the students, especially those enrolled in non-biological areas, to understand contemporary biology, its rapid progress, and potential applications. Biology is a fast evolving science and is subdivided in various fundamental areas such as taxonomy, biochemistry, molecular biology, embryology, cell biology, physiology, ethology, ecology and many others. This course thus emphasizes the integration of knowledge and the relations between these areas to allow the understanding of the basic process of "life."

**Academic Goal**

A primary goal of this course is to improve the biological literacy of our students, and to have them made informed choices the issues involved biology.

**Description & Program**

This course will include following contents:
1. The Characteristics of Life. It’s Alive or is it? (1st week)
2. Gender and Diversity (from 2nd to 3rd weeks)
3. The Search for the Genetic Material (4th week)
4. The Effect of Mutations on Protein Synthesis (5th week)
5. What Controls Development? (6th week)
6. Communities of Organisms (7th week)
7. Studying Interactions between Organisms and Their Environment (from 8th to 9th weeks)
8. The Process of Photosynthesis (from 10th to 11th weeks)
9. Nutrient Cycles (12th week)
10. Evolution and Biodiversity (from 13th to 15th weeks) etc.

These themes will be lectured for understanding the basis of marine environmental science. In the advanced lectures, various aspects of the modern biology will be lectured.

**Preparation & Review**

We hope that you will prepare through lesson plan, and brush up and improve the level of understanding about biological events and terms through the use of reference and Web site.

**Textbooks/References/URL**

“Shikakude toraeru foto saiensu seibutsu zuroku” Ed. Takahito

**Evaluation Method**

Evaluations will be done based on an end-term exam (100%).

**Evaluation Criteria**

In case the above-described aims of the course are accomplished, the final evaluating score between 60% and 100% will be awarded.

**About return of answer, etc.**

At the end of the final exam, sample answers will be given and comments will be provided. Answer sheets may be
returned to students at the designated time in the teachers’ room.

| Other Information |
Fundamental Biology

<table>
<thead>
<tr>
<th>Department of Marine Biosciences</th>
<th>Category</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Basic Foundation Subjects</td>
<td>1/Required/2</td>
<td>First Semester 16:20-17:50</td>
<td>Monday Lec.Bldg. Lecture Hall</td>
<td></td>
</tr>
</tbody>
</table>

Chief Instructor: HASOBE Masahide

Room: Lecture Hall

Contact: anytime

Instructors: HASOBE Masahide, YOSHIZAKI Goro, ISHII Haruto

Theme & Objectives (Target, Contents, Method)

This course reviews fundamental knowledge and presents a summary of the latest information in life sciences in order to make it easy for the students, especially those enrolled in non-biological areas, to understand contemporary biology, its rapid progress, and potential applications. Biology is a fast-evolving science and is subdivided in several fundamental areas such as biochemistry, molecular biology, embryology, cell biology, physiology, ethology, ecology, and many others. Thus, this course emphasizes the integration of knowledge and the relations between these areas to allow the understanding of the basic processes of “life”.

Academic Goal

The key learnings are to understand the basic knowledge and meaning lectured in the subject described above the syllabus planning.

Description & Program

In this lecture, several topics are taken up and reviewed from the viewpoint of fundamental biology. The scheduled subjects are “in vitro cultured cell and animal body”, “endocrine system and animal behavior”, and “the ecology of the aquatic animal”.

Preparation & Review

The method of preparation and review is directed to each class hours.

Textbooks/References/URL

The teaching materials and side reader lists are supplied as the need arises.

Evaluation Method

Your final record is graded by putting together with reports and the final examination.

Evaluation Criteria

About return of answer, etc.

After the final exam, comments on the exam will be provided at the designated time in the teachers’ room.

Other Information

A roll call is taken at the beginning of each class.
# Fundamental Biology

<table>
<thead>
<tr>
<th>Department of Food Science and Technology</th>
<th>Category</th>
<th>Year/Required or Elective/Credit</th>
<th>Day/Hours/Place</th>
<th>Availability for the Lower-class Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department of Food Science and Technology</td>
<td>Basic Foundation Subjects</td>
<td>1/Required/2</td>
<td>First Semester Tuesday 14:40-16:10 Lec. Bldg. Rm. 22</td>
<td>/</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chief Instructor</th>
<th>Room</th>
<th>Contact</th>
<th>Office Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>KUDA Takashi</td>
<td>Bld. 3 4th floor Rm. 414</td>
<td>Phone: 5463-0602. E-mail:<a href="mailto:kuda@kaiyodai.ac.jp">kuda@kaiyodai.ac.jp</a></td>
<td>Thursday afternoon</td>
</tr>
</tbody>
</table>

## Instructors

KUDA, Takashi

## Theme & Objectives (Target, Contents, Method)

This course reviews fundamental knowledge and presents a summary of the latest information in life sciences in order to make it easy for the students, especially those enrolled in non-biological areas, to understand contemporary biology, its rapid progress, and potential applications. The objective of this lecture is to guide the student of Food Science and Technology to understand biologically human body, health and foods. Students receive the copies for lectures and an explanation for the reference books in the 1st class.

## Learning and Educational Objectives

B, C, D

## Academic Goal

The final goal of this lecture is to understand biology about structure and functions of human body.

## Description & Program

This course will include following contents:

1. What is living things and biology?
2. Structure of cell
3. Genome, gene, DNA
4. Inheritance and environment
5. Development and aging
6. Sickness due to abnormality of cell
7. Infection and immunity
8. Food and health
9. Homeostasis and nervous system
10. Effects of environmental pollutant on human body
11. Environment, ecosystem, and biodiversity
12. Changes of fresh fishes
13. Algae

## Preparation & Review

(P)reparation

Read well the reference materials before the lecture.

(R)eview

Students will be given small questions for the review. It should be understood before the next lecture.

## Textbooks/References/URL

References will be shown. Handouts will also be distributed.

## Evaluation Method

Evaluations will be done based on reports (30%) and end-term exam (70%).

## Evaluation Criteria

The examinations evaluate the acquirement of scientific knowledge (80%), and ability to think (20%).

## About return of answer, etc.

Written assignments and tests will be returned to students and comments will be provided during class. At the end of the final exam, comments will be provided. Students may receive an explanation of the exam result at the designated time in the teachers’

## Other Information

A roll call is taken at the beginning of each class. Students must not be late in the class.
# Fundamental Biology

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<tr>
<td>Department of Marine Policy and Culture</td>
<td>Basic Foundation Subjects</td>
<td>1/Required/2</td>
<td>First Semester Monday 16:20-17:50 Lec.Bldg. Lecture Hall</td>
<td></td>
</tr>
</tbody>
</table>

**Chief Instructor**

HASOBE Masahide

**Room**

**Contact**

anytime

**Instructors**

HASOBE Masahide, YOSHIZAKI Goro, ISHII Haruto

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## Academic Goal

The key learnings are to understand the basic knowledge and meaning lectured in the subject described above the syllabus planning.

## Description & Program

In this lecture, several topics are taken up and reviewed from the viewpoint of fundamental biology. The scheduled subjects are “in vitro cultured cell and animal body”, “endocrine system and animal behavior”, and “the ecology of the aquatic animal”.

## Textbooks/References/URL

The teaching materials and side reader lists are supplied as the need arises.

## Evaluation Method

Your final record is graded by putting together with reports and the final examination.

## About return of answer, etc.

After the final exam, comments on the exam will be provided at the designated time in the teachers’ room.

## Other Information

A roll call is taken at the beginning of each class.
### Physics

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<tbody>
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<td>Department of Ocean Sciences</td>
<td>Basic Foundation Subjects</td>
<td>1/Required/2</td>
<td>First Semester Monday 10:30-12:00 Lec. Bldg. Rm. 22</td>
<td>No</td>
</tr>
</tbody>
</table>

**Chief Instructor**

| OHASHI Hideo | Building No. 5, Room 406 | ohashi@kaiyodai.ac.jp | Mail me in advance. |

**Instructors**

**OHASHI, Hideo**

**Theme & Objectives (Target, Contents, Method)**

The purpose of this lecture is to learn the outline of physics, namely, to view the structure of nature and the fundamental laws working there, and to deepen our systematic understanding of them. However, since this lecture is exclusively for the natural science course, knowledge must be so well defined as capable for quantitative applications.

**Learning and Educational Objectives**

C

**Academic Goal**

In the upper grades, you will attend many experiment classes. The idea of significant figure, rough estimation, dimension analysis will help you perform experiments, and data analysis. One of the goals is to understand these idea through lecture and exercise.

**Description & Program**

1) Lecture on the basic ideas of physics and the practices.
   1-1) Figure of merit
   1-2) Dimensional analysis
   1-3) Estimation of the calculation results without using calculator
2) A brief overview of the constitution of substance, and the universe, the forces acting in those objects, and the history of physics.
3) Dynamics: To get the concept of the fundamental physical quantities of velocity, acceleration, mass, force, energy etc. To study the characteristics of the universal gravitation, which governs the motions of stars.

**Preparation & Review**

<table>
<thead>
<tr>
<th>Preparation</th>
<th>To pass this class, you should clear performance goal in every evaluation items.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prepare the topic based on lecture plan.</td>
<td>Brush up on examples during lecture, solve as many exercises in reference book.</td>
</tr>
</tbody>
</table>

**Textbooks/References/URL**


**Evaluation Method**

Reports and occasional test results are considered with final examination results.

**Evaluation Criteria**

To pass this class, you should clear performance goal in every evaluation items.

**About return of answer, etc.**

At the end of the final exam, sample answers will be given and comments will be provided. Answer sheets may be returned to students at the designated time in the teachers’ office. Written assignments and tests will be returned to students and comments will be provided.

**Other Information**

In each class, write your name with student ID number.

You are required to submit reports on several theme in vacations. Apply what you have learned in the "Methods of self-expression in Japanese” course.
### Physics

<table>
<thead>
<tr>
<th>Department of Ocean Sciences</th>
<th>Basic Foundation Subjects</th>
<th>1/Required/2</th>
<th>First Semester</th>
<th>Monday 10:30-12:00 Bldg. 9 Rm. 208</th>
<th>N/A</th>
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<tr>
<td><strong>Chief Instructor</strong></td>
<td><strong>Room</strong></td>
<td><strong>Contact</strong></td>
<td><strong>Office Hours</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>YOSHIDA Jiro</td>
<td>Bldg. 9 Rm. 506</td>
<td><a href="mailto:jiroy@kaiyodai.ac.jp">jiroy@kaiyodai.ac.jp</a></td>
<td>Bldg. 9 Rm. 506</td>
<td>12:00-13:00 <a href="mailto:jiroy@kaiyodai.ac.jp">jiroy@kaiyodai.ac.jp</a></td>
<td></td>
</tr>
</tbody>
</table>

### Instructors

| Jiro YOSHIDA |

### Theme & Objectives (Target, Contents, Method)

The purpose of this lecture is to learn the basics of physics, and to acquire scientific point of view. Students are required to view the structure of nature and the fundamental laws working there, and to deepen our systematic understanding of them and to have interest in the physical aspects and phenomena. However, since this lecture is exclusively for the natural science course, knowledge must be so well defined as capable for quantitative applications. Emphasis is laid upon the dynamics.

### Academic Goal

To understand the basic of dynamics, and through the understanding of the first, the second and the third law of dynamics, students are required to understand how the basic law of physics is constructed and their relation to natural phenomena. (C)

### Description & Program

Lecture is focused on 8 topics. Regular attendance is indispensable. Practical programs and problems are given as follows:

1. Balance of force
2. Balance of solid body
3. Velocity and acceleration
4. Force and acceleration
5. Parabolic movement, simple oscillation and single pendulum
6. Motion of the moon, satellite and planet
7. Impulse, momentum, work and energy
8. Fluid dynamics and waves in the ocean

(This program may be changed depending on the progress of the class.)

### Preparation & Review

(Preliminary study)
- No need

(After study)
- To study teaching materials provide at home

### Textbooks/References/URL

Teaching materials will be provided in the lecture.

### Evaluation Method

<table>
<thead>
<tr>
<th>Reports (50%)</th>
<th>Exam (50%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(This program may be changed depending on the progress of the class.)</td>
<td></td>
</tr>
</tbody>
</table>

### Evaluation Criteria

To clear the achievement goal of this class is the condition for pass (60%).

### About return of answer, etc.

Written assignments and tests will be returned to students and comments will be provided during class.

### Other Information

N/A
Physics

<table>
<thead>
<tr>
<th>Department of Marine Biosciences</th>
<th>Category</th>
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<tr>
<td>Basic Foundation Subjects</td>
<td>1/Required/2</td>
<td>First Semester Thursday 14:40-16:10 Lec. Bldg. Rm. 22</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Chief Instructor: OZAWA Shunsuke
Room: Soz0206@gmail.com
Contact: Thursday 13:00-18:00 (Email can be connected at any time)

Theme & Objectives (Target, Contents, Method)

In that year, we aim to learn the law of physics for the understanding of the phenomenon that takes place in our environment. In order to understand the law of physics systematically, we are going to spend the enough time on learning of a mathematical approach.

(Introduction): Mainly, it’s told about the scale and the unit between Nucleus and Astronomy for understanding the physical phenomenon and about the history of physics briefly.

(Dynamics) Using the mathematical approach to understanding the physical phenomena, we will think about the velocity, the force and etc. In this term, we will consider the concept of “energy”, “momentum” which are important in physics.

(Wave motion) We will learn the rudiments of the wave motion phenomenon.

(Thermodynamics) We will learn about thermal phenomena. A thermodynamic phenomenon is linked closely to modern environmental problems. We will understand a concept of entropy.

In another, the physical topics -Electrodynamics, Particle physics and etc.- are picked up suitably.

Academic Goal

- To be able to think at a physical point of view to a natural phenomenon (C◎, K○).
- Mastering the basics of the technique of physics’ method for understanding the principle of the phenomenon seen every day (C◎, K○).
- It participates in the argument to the

<table>
<thead>
<tr>
<th>Description &amp; Program</th>
<th>Preparation &amp; Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Introduction: Science history, etc.</td>
<td>(Preparation) It will be told at a lecture for next time.</td>
</tr>
<tr>
<td>2. Dynamics: The experimental measurements, Unit system</td>
<td>(Review) The reports are prepared summarizing the phenomenon that relates to review of content treated in the lecture. You have to do these reports.</td>
</tr>
<tr>
<td>3. Dynamics: The laws of Dynamics 1</td>
<td></td>
</tr>
<tr>
<td>4. Dynamics: The laws of Dynamics 2</td>
<td></td>
</tr>
<tr>
<td>5. Dynamics: The laws of Dynamics 3</td>
<td></td>
</tr>
<tr>
<td>6. Dynamics: The equation of motion</td>
<td></td>
</tr>
<tr>
<td>7. Dynamics: Momentum and energy</td>
<td></td>
</tr>
<tr>
<td>8. Dynamics: The conservation low of energy</td>
<td></td>
</tr>
<tr>
<td>9. Dynamics: The rigid body dynamics</td>
<td></td>
</tr>
<tr>
<td>10. Wave motion: The character of a wave</td>
<td></td>
</tr>
<tr>
<td>11. Wave motion: The synthesis of waves and reflection</td>
<td></td>
</tr>
<tr>
<td>12. Wave motion: Sounds, Lights</td>
<td></td>
</tr>
<tr>
<td>13. Thermodynamics: Heat and workload</td>
<td></td>
</tr>
<tr>
<td>14. Thermodynamics: The laws of thermodynamics</td>
<td></td>
</tr>
<tr>
<td>15. Thermodynamics: Entropy and an environmental problem</td>
<td></td>
</tr>
</tbody>
</table>
A textbook is not specified. The following books are mentioned as a reference book.

- 「大学生のための物理入門」（講談社基礎物理学シリーズ）
- 「基礎物理学」 原 康夫 著, 学術図書出版社
- 「物理学者の基礎—身近なアプローチ」 木下 紀正 著, 東京教学社

If you want the book in your language, the textbook of physics in high school is

<table>
<thead>
<tr>
<th>Evaluation Method</th>
<th>Evaluation Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basically, it will be judged according to the term end examination. The homework, the reports are included in the evaluation. In the term end examination, I will evaluate the understanding level of the principle and the idea of the physics phenomenon treated by the lecture and the result of the description type examination. The reports are scheduled three or more.</td>
<td>Your record will be evaluated with the contents of the end term examination and reports, as “Academic Goal” is the standard of evaluation. When It’s evaluated arrival to the standard, you will get the credit and be estimated the record by your reach.</td>
</tr>
</tbody>
</table>

**About return of answer, etc.**

The answers are not returned basically.
A model answer is indicated during a lecture.

**Other Information**

This lecture is done in Japanese.
## Physics

<table>
<thead>
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<td>First Semester Wednesday 16:20-17:50 Lec. Bldg. Rm. 22</td>
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<tr>
<th>Chief Instructor</th>
<th>Room</th>
<th>Contact</th>
<th>Office Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUZUKI Toru</td>
<td>Number 3 Building, RM110 (SUZUKI Toru)</td>
<td><a href="mailto:toru@kaiyodai.ac.jp">toru@kaiyodai.ac.jp</a>, 03-5463-0623</td>
<td>(SUZUKI Toru) From 9:00 to 12:00 on Wed., Thu. and Fri. (HAGIWARA Tomoaki) Anytime will be welcome if you get an advanced appointment with me by E-mail.</td>
</tr>
<tr>
<td></td>
<td>Number 3 Building, RM114 (HAGIWARA Tomoaki)</td>
<td><a href="mailto:tomoaki@kaiyodai.ac.jp">tomoaki@kaiyodai.ac.jp</a>, 03-5463-0402 (HAGIWARA Tomoaki)</td>
<td></td>
</tr>
</tbody>
</table>

### Instructors

SUZUKI Toru, HAGIWARA Tomoaki

### Theme & Objectives (Target, Contents, Method)

Physics is the natural science which pursue the common law in the universe based on observed facts. It covers the matters and the phenomena related to ocean. Needless to say, foods and food production process and its components such as storage, processing, and cooking etc. is also the subjects of matters of physics. We are now having many problems in marine science, which is spreading globally. Physics will give a comprehensive understanding and solutions for them as a fundamental scientific tool. In addition, learning physics will cultivate the abilities of logical thinking and quantitative analysis. The outline of this class is to learn elementary college-level physics. The class is instructed by lecturing and practice.

### Academic Goal

1. To develop an ability to evaluate velocity and acceleration rate (C)
2. To develop an ability to describe two-dimensional motion with constant acceleration (C)
3. To understand the concept of “Force” in mechanics (C)
4. To develop an ability to describe

### Description & Program

1. Preliminary fundamentals for learning physics (the way of scientific view, physical quantities and units, significant digits, calculation method)
2-3 How to describe force (definition of force, when force acts, examples of force, force as a vector, composition of forces, resolution of a force)
4-5 Equilibrium and acting forces (how to find and describe forces acting on an object, forces of friction)
6-7 How to describe a motion of an object (position, displacement, velocity, acceleration)
8-9 One-dimensional motion with constant acceleration (definition and examples, equation of velocity vs. time, equation of position vs. time)
10-11 Motions in two dimensions and three dimensions (how to describe by vector, freely falling objects, projectile motion)
12-13 Laws of motion (inertial law (first law), equation of motion (second law), action-reaction law (third law))
14-15 Solving problem with the equation of motion (How to determine an equation, freely falling object and projectile motion, trajectory of ball pulled by thread, motion of spring, object on slope)

### Preparation & Review

Students should thoroughly read the textbook and handouts, if any, by themselves before and after the class. Self-learning and solving problems after the class is especially important to deepen your understanding. Sometimes assignments will be given as ho
# Textbooks/References/URL

| Textbook: “Primary academic text Physics” ed. by A. Kinbara, Jikkyo Shuppan (in Japanese) |
| Handouts will be provided in the class when necessary. |

# Evaluation Method

| Rated by the scores of midterm exam (40%) and end-of-term exam (60%). |
| Only in case you accomplish the achievement objectives mentioned above, more than 60% of grade point will be given. |

# About return of answer, etc.

| After the final exam, comments on the exam will be provided at the designated time in the teachers’ room. |

# Other Information

| The contents of this class will be a base for other subjects such as Physical Thinking in Foodprocessing, Practical Physics, Physical Chemistry, Food Engineering, Food Refrigeration Engineering, and Food Machinery Engineering. |
| You need a calculator wit |
### Physics

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</table>

#### Chief Instructor

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<tr>
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<tr>
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#### Instructors

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<td>If you need an English textbook, please ask your instructor for recommendation.</td>
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<table>
<thead>
<tr>
<th><strong>Evaluation Method</strong></th>
<th><strong>Evaluation Criteria</strong></th>
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<th>Department of Marine Policy and Culture</th>
<th>Category</th>
<th>Year/Required or Elective/Credit</th>
<th>Day/Hours/Place</th>
<th>Availability for the Lower-class Students</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Basic Foundation Subjects</td>
<td>1/Required/2</td>
<td>First Semester Thursday 16:20–17:50 Lec. Bldg. Rm. 22</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chief Instructor</th>
<th>Room</th>
<th>Contact</th>
<th>Office Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>OZAWA Shunsuke</td>
<td></td>
<td><a href="mailto:Soz0206@gmail.com">Soz0206@gmail.com</a></td>
<td>Thursday 13:00–18:00 (Email can be connected at any time)</td>
</tr>
</tbody>
</table>

#### Instructors

OZAWA, Shunsuke

#### Theme & Objectives (Target, Contents, Method)

In that year, we aim to learn the law of physics for the understanding of the phenomenon that takes place in our environment. In order to understand the law of physics systematically, we are going to spend the enough time on learning of a mathematical approach.

(Introduction): Mainly, it’s told about the scale and the unit between Nucleus and Astronomy for understanding the physical phenomenon and about the history of physics briefly.

(Dynamics) Using the mathematical approach to understanding the physical phenomena, we will think about the velocity, the force and etc. In this term, we will consider the concept of “energy”. “momentum” which are important in physics.

(Wave motion) We will learn the rudiments of the wave motion phenomenon.

(Thermodynamics) We will learn about thermal phenomena. A thermodynamic phenomenon is linked closely to modern environmental problems. We will understand a concept of entropy. In another, the physical topics –Electrodynamics, Particle physics and etc.– are picked up suitably.

#### Learning and Educational Objectives

A: Communication  
C: Science literacy  
I: Lifelong learning  
K: The ability of synthetic judgment

#### Academic Goal

- To be able to think at a physical point of view to a natural phenomenon (C◎, K○).
- Mastering the basics of the technique of physics’ method for understanding the principle of the phenomenon seen every day (C◎, K○).
- It participates in the argument to the

#### Description & Program

1. Introduction: Science history, etc.
2. Dynamics: The experimental measurements, Unit system
3. Dynamics: The laws of Dynamics 1
4. Dynamics: The laws of Dynamics 2
5. Dynamics: The laws of Dynamics 3
6. Dynamics: The equation of motion
7. Dynamics: Momentum and energy
8. Dynamics: The conservation law of energy
9. Dynamics: The rigid body dynamics
10. Wave motion: The character of a wave
11. Wave motion: The synthesis of waves and reflection
12. Wave motion: Sounds, Lights
13. Thermodynamics: Heat and workload
14. Thermodynamics: The laws of thermodynamics
15. Thermodynamics: Entropy and an environmental problem

(Preparation) It will be told at a lecture for next time.
(Review) The reports are prepared summarizing the phenomenon that relates to review of content treated in the lecture. You have to do these reports.

#### Textbooks/References/URL
A textbook is not specified. The following books are mentioned as a reference book.

- 「大学生のための物理入門」（講談社基礎物理学シリーズ）
- 「基礎物理学」 原 康夫 著、学術図書出版社
- 「物理學の基礎—身近なアプローチ」 木下 紹正 著、東京教学社

If you want the book in your language, the text book of physics in high school is

<table>
<thead>
<tr>
<th>Evaluation Method</th>
<th>Evaluation Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basically, it will be judged according to the term end examination. The homework, the reports are included in the evaluation. In the term end examination, I will evaluate the understanding level of the principle and the idea of the physics phenomenon treated by the lecture and the result of the description type examination. The reports are scheduled three or more.</td>
<td>Your record will be evaluated with the contents of the end term examination and reports. as “Academic Goal” is the standard of evaluation. When It’s evaluated arrival to the standard, you will get the credit and be estimated the record by your reach.</td>
</tr>
</tbody>
</table>

**About return of answer, etc.**

The answers are not returned basically. A model answer is indicated during a lecture.

**Other Information**

This lecture is done in Japanese.
### General Chemistry

**Department**
Department of Ocean Sciences

**Category**
Basic Foundation Subjects

**Year/Required or Elective/Credit**
1/Required/2

**Day/Hours/Place**
First Semester Monday 13:00-14:30 Lec. Bldg. Rm. 42

**Availability for the Lower-class Students**
Possible

<table>
<thead>
<tr>
<th>Chief Instructor</th>
<th>Room</th>
<th>Contact</th>
<th>Office Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HASHIHAMA Fuminori</td>
<td>Hashihama Building #9, room 306B; Okai Building #3, room 211</td>
<td><a href="mailto:f-hashih@kaiyodai.ac.jp">f-hashih@kaiyodai.ac.jp</a>, <a href="mailto:mokai01@kaiyodai.ac.jp">mokai01@kaiyodai.ac.jp</a></td>
<td>Please make the appointment using E-mail before visiting the office.</td>
</tr>
</tbody>
</table>

**Instructors**
HASHIHAMA Fuminori, OKAI Masahiko

### Theme & Objectives (Target, Contents, Method)

This course provides an opportunity for students to learn the basic properties of substances and their reactions, and to obtain fundamental knowledge of environmental, ecological and lifescience.

In order to study further chemistry in university course, rearrangement of chemistry in high school is required. Students learn basic chemical knowledge and its application in this course.

The goal of this course is to get basic knowledge for science, and calculation of concentration, chemical equilibrium and pH.

### Learning and Educational Objectives

- **C:** Basic Science
- **G:** Practice
- **I:** Lifelong study

### Academic Goal

The final goal of this lecture is to attain the basic chemical study from high school to university. (C, I)

The calculation of concentration, equilibrium and pH could be performed. (C, G, I)

### Description & Program

The following subjects will be lectured to new students in the department of ocean science in 2 classes.

1. Basic properties of matter that constitutes nature
   (Inorganic Chemistry, Analytical Chemistry, Physical Chemistry)
   1) Atomic structure and chemical bonding
   2) Properties of gases, liquids and solids, and phase changes,
   3) Thermochemistry and chemical equilibrium
   4) Acid and base and oxidation and reduction
2. Compounds concerning Organic chemistry and Biochemistry
   1) Fundamentals of organic chemistry
   2) Electron configuration
   3) Properties of organic compounds
   4) Stereochemistry
   5) Biogenic polymer

### Preparation & Review

(Preparation for lectures) It is expected that students will study according to the contents listed in the schedule.

(Review past lectures) Any contents, which could not be understood, should be checked after the lesson.

### Textbooks/References/URL

- **Text**

- **“General chemistry” Ed. Kozo Nagashima, Isao Tomita, Syoukabou.**

### Evaluation Method

The evaluation is done based on the examinations of Physical and Inorganic chemistry (50%), and Organic Chemistry (50%).

### Evaluation Criteria

The Credit will be given to pass examination.

### About return of answer, etc.
<table>
<thead>
<tr>
<th>Other Information</th>
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<tbody>
<tr>
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### General Chemistry

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<th>Day/Hours/Place</th>
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<tr>
<td>Department of Ocean Sciences</td>
<td>Basic Foundation</td>
<td>1/Required/2</td>
<td>First Semester Monday 13:00-14:30 Lec. Bldg. Rm. 21</td>
<td>Possible</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chief Instructor</th>
<th>Room</th>
<th>Contact</th>
<th>Office Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>TAKAHASHI Miho</td>
<td>Kamio Building #9, room 402; Takahashi #9, room 301</td>
<td>Kamio Building, #9, room402; Takahashi Building #9, 301</td>
<td>Please make the appointment using E-mail before visiting the office.</td>
</tr>
</tbody>
</table>

#### Theme & Objectives (Target, Contents, Method)

This course provides an opportunity for students to learn the basic properties of substances and their reactions, and to obtain fundamental knowledge of environmental, ecological and lifescience.

In order to study further chemistry in university course, rearrangement of chemistry in high school is required. Students learn basic chemical knowledge and its application in this course.

The goal of this course is to get basic knowledge for science, and calculation of concentration, chemical equilibrium and pH.

#### Academic Goal

The final goal of this lecture is to attain the basical chemical study from high school to University. (C, I)

The calculation of concentration, equilibrium and pH could be performed. (C, G, I)

#### Description & Program

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     4) Acid and base and oxidation and reduction

2. Compounds concerning Organic chemistry and Biochemistry
   - 1) Fundamentals of organic chemistry
   - 2) Electron configuration
   - 3) Properties of organic compounds
   - 4) Stereochemistry
   - 5) Biogenic polymer

#### Preparation & Review

- (Preparation for lectures) It is expected that students will study according to the contents listed in the schedule.
- (Review past lectures) Any contents, which could not be understood, should be checked after the lesson.

#### Instructors

KAMIO Michiya, TAKAHASHI, Miho

#### Textbooks/References/URL

- "General chemistry" Ed. Kozo Nagashima, Isao Tomita, Syoukabou.

#### Evaluation Method

The evaluation is done based on the examinations of Physical and Inorganic chemistry (50%), and Organic Chemistry (50%).

#### Evaluation Criteria

The Credit will be given to pass examination.

### About return of answer, etc.
After the examination, the test paper and model paper are shown to the students in the teacher's room.

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<th>Day/Hours/Place</th>
<th>Availability for the Lower-class Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department of Marine Biosciences</td>
<td>Basic Foundation Subjects</td>
<td>1/Required/2</td>
<td>First Semester Tuesday 14:40-16:10 Lec. Bldg. Rm. 21</td>
<td>N/A</td>
</tr>
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</table>

**Chief Instructor**

<table>
<thead>
<tr>
<th>Room</th>
<th>Contact</th>
<th>Office Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>room 112, No. 2 Buildg</td>
<td><a href="mailto:haga@kaiyodai.ac.jp">haga@kaiyodai.ac.jp</a></td>
<td>Ground floor of the No. 2 Buildg. Any time.</td>
</tr>
</tbody>
</table>

## Instructors

Yutaka Haga, Kyoko Hibi

## Theme & Objectives (Target, Contents, Method)

Fundamental aspect on chemistry will be provided in class to help understanding related classes in subsequent years such as microbiology, life science, fish physiology, fish nutrition, fish pharmacology, and public health, etc. and to learn basic knowledge which is required to understand environmental and life science. Students are required to do drills in the textbook to understand basics of chemistry and biochemistry.

## Academic Goal

Fundamental knowledge on chemistry will be provided to better understand environmental and life science. Students will learn basics of molecules, and chemical reaction such as classification of chemical bonds and property of them, reaction of acid and base.

## Description & Program

In the former part of class (1st-7th), inorganic chemistry will be taught. In the latter part of the class (8th-14th), brush up fundamentals on organic chemistry to support understanding biochemistry-related classes that are open for upper grade students.

- Covalent bond, organic compounds, functional group, structure of molecules and isomers, alkine, alkene, alkyne, alcohol, aldehyde, sugar, carbonic acid, fatty acid, ester, amide, amino acid, protein, macromolecular compounds, and fundamentals of biochemistry will be taught in the latter part of class.

On the 7th class, intermediate exam will be done. Students should read a textbook before the class. Drills in the textbook should be practiced repeatedly.

## Textbooks/References/URL

- Fundamentals of chemistry (in Japanese) (Hiromi Tanaka)

## Evaluation Method

**Evaluation Criteria**

Learning status on fundamentals of chemistry will be evaluated in the exams. If you reach beyond average levels, you will obtain more than 60.

**About return of answer, etc.**

After the exam, correct answers of the exam will be presented. Time and place will be indicated on a message.
board in Shinagawa campus or delivered by online student support system.

<table>
<thead>
<tr>
<th>Other Information</th>
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<tbody>
<tr>
<td>You should keep quiet while in the class.</td>
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General Chemistry

<table>
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<th>Department of Marine Biosciences</th>
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</thead>
<tbody>
<tr>
<td>Basic Foundation Subjects</td>
<td>Required/2</td>
<td>First Semester Tuesday 14:40–16:10 Lec. Bldg. Rm. 31</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

Chief Instructor: HAMADA Naoko
Room: Room 606, No. 7 Buildg
E-mail: hanaoko@kaiyodai.ac.jp
Office hours: Thursday 10:00–12:00

Instructors: Naoko Hamada, Kyoko Hibi

Theme & Objectives (Target, Contents, Method)

Fundamental aspect on chemistry will be provided in class to help understanding related classes in subsequent years such as microbiology, life science, fish physiology, fish nutrition, fish pharmacology, and public health, etc and to learn basic knowledge which is required to understand environmental and life science. Students are required to do drills in the textbook to understand basics of chemistry and biochemistry.

Academic Goal

Fundamental knowledge on chemistiy will be provided to better understand environmental and life science. Students will learn basics of molecules, and chemical reaction such as classification of chemical bonds and property of them, reaction of acid and base.

Description & Program

In the former part of class (1st-7th), organic chemistry will be taught. In the latter part of the class (8th-14th), brush up fundamentals on inorganic chemistry to support understanding biochemistry-related classes that are open for upper grade students.

In detail, structure of atom and chemical bond, molecular weight, concentration of chemical solution, ionization formula, equilibrium constant, acid and base, pH, oxidation and reduction will be taught in the former part of the class.

Covalent bond, organic compounds, functional group, structure of molecules and isomers, alkine, alkyne, aldehyde, sugar, carbonic acid, fatty acid, ester, amine, amino acid, protein, macromolecular compounds, and fundamentals of biochemistry will be taught in the latter part of class. On the 7th class, intermediate examination will be done.

Preparation & Review

Students should read a text book before the class. Drills in the text book should be practised repeatedly.

Textbooks/References/URL

Funamentals of chemistry (in Japanese) (Hiromi Tanaka)

Evaluation Method

Learning status on fundamentals of chemistry will be evaluated in the examination. If you reach beyond average levels, you will obtain more than 60 score.

Evaluation Criteria

About return of answer, etc.
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**Other Information**

You should keep quiet while in the class.
# General Chemistry

<table>
<thead>
<tr>
<th>Department of Food Science and Technology</th>
<th>Category</th>
<th>Year/Required or Elective/Credit</th>
<th>Day/Hours/Place</th>
<th>Availability for the Lower-class Students</th>
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</thead>
<tbody>
<tr>
<td>Basic Foundation Subjects</td>
<td>1/Required/2</td>
<td>First Semester Monday 10:30-12:00 Lec. Bldg. Rm. 44</td>
<td>No</td>
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</tbody>
</table>

### Chief Instructor
- **BEPPU Fumiaki**

### Theme & Objectives (Target, Contents, Method)

It might be the most important matter to understand high school level chemistry for the comprehension of several kind classes relating to chemistry in our department (Department of Food Science and Technology). Our department gives classes such as Organic Chemistry I, Organic Chemistry II, and Food Science and these classes are needed basic level chemistry knowledge; therefore, making sure to understand high school level chemistry is indispensable. In this class, students will study some of fascinating and significant roles which chemistry plays in the world we live.

The purpose of this class is to master basic level chemistry knowledge and students will be divided into 4 classes according to the comprehension level of high school level chemistry.

Basic knowledge obtained in this class will be important to get an ability to solve many problems concerning foods.

### Learning and Educational Objectives

- **C**: Basic of science

### Academic Goal

1. To be able to understand the structure of atom. (C)
2. To be able to understand the concept of mole. (C)
3. To be able to understand the concept of gas, liquid, and solid. (C)
4. To be able to understand the chemical bonds. (C)
5. To be able to

### Description & Program

Students will be divided into 4 classes, nearly 15 students each class, according to the results of placement test taken at the first lesson. From the second lesson, students will learn under the supervision of each instructor of the same curriculum. The main subjects will be as follows.


### Preparation & Review

- **(The way of preparation)**
  - It is desirable to carry out preparation about the contents shown in The plan of a lesson. It will be directed timely, when there is necessity.

- **(The way of review)**
  - It is desirable to investigate the point which got inte

### Textbooks/References/URL

The textbook will be informed at the first lecture.

### Evaluation Method

- Student's comprehension is evaluated by the final test (not open-book examination).
- Evaluation criteria (score in 100)
  - A (excellent): 100-80
  - B (good): 79-70
  - C (fair): 69-60
  - D (failure): 59-0.

### Evaluation Criteria

- Passing scores (more than 60 out of 100 points) are given students who can understand the minimum achievement objective.
| **About return of answer, etc.** |
|---------------------------------
| After the final exam, sample answers will be placed on the web-based learning support system. Answer sheets will be returned to students and comments will be given at the designated time in the teachers’ room. |

| **Other Information** |
|-----------------------
| Students will be given a full detail of this study at the guidance. |
### Theme & Objectives (Target, Contents, Method)

It might be the most important matter to understand high school level chemistry for the comprehension of several kind classes relating to chemistry in our department (Department of Food Science and Technology). Our department gives classes such as Organic Chemistry I, Organic Chemistry II, and Food Science and these classes are needed basic level chemistry knowledge; therefore, making sure to understand high school level chemistry is indispensable. In this class, students will study some of fascinating and significant roles which chemistry plays in the world we live.

The purpose of this class is to master basic level chemistry knowledge and students will be divided into 4 classes according to the comprehension level of high school level chemistry. Basic knowledge obtained in this class will be important to get an ability to solve many problems concerning foods.

#### Learning and Educational Objectives

- **C**: Basic of science

### Academic Goal

1. To be able to understand the structure of atom. (C)
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3. To be able to understand the concept of gas, liquid, and solid. (C)
4. To be able to understand the chemical bonds. (C)
5. To be able to

### Description & Program

Students will be divided into 4 classes, nearly 15 students each class, according to the result of placement test taken at the first lesson. From the second lesson, students will learn under the supervision of each instructor of the same curriculum. The main subjects will be as follows.

1. Structure of atoms.
2. Gas-, liquid-, solid-phases and their chemical changes.
3. Various chemical bonds.
5. Oxidation-reduction reactions.
6. Chemical reactions and equilibrium.
7. Chemicals in environmental pollutions.
8. Summary.

(The way of preparation)

- It is desirable to carry out preparation about the contents shown in [The plan of a lesson]. It will be directed timely, when there is necessity.

(The way of review)

- It is desirable to investigate the point which got into

### Textbooks/References/URL

The textbook will be informed at the first lecture.

### Evaluation Method

Student’s comprehension is evaluated by the final test (not open-book examination).

Evaluation criteria (score in 100)

- A (excellent): 100~80
- B (good): 79~70
- C (fair): 69~60
- D (failure): 59~0

### Evaluation Criteria

Passing scores (more than 60 out of 100 points) are given students who can understand the minimum achievement objective.
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# General Chemistry

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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Department of Food Science and Technology</td>
<td>Basic Foundation Subjects</td>
<td>1/Required/2</td>
<td>First Semester Monday 10:30–12:00 Lec. Bldg. Rm. 32</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chief Instructor</th>
<th>Room</th>
<th>Contact</th>
<th>Office Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOTOH Naohiro</td>
<td>Office:3-412</td>
<td>Phone:03-5463-0714 e-mail: <a href="mailto:ngotoh@kaiyodai.ac.jp">ngotoh@kaiyodai.ac.jp</a></td>
<td>Mon.–Fri. 12:00–13:00</td>
</tr>
</tbody>
</table>

## Instructors

GOTOH Naohiro

## Theme & Objectives (Target, Contents, Method)

It might be the most important matter to understand high school level chemistry for the comprehension of several kind classes relating to chemistry in our department (Department of Food Science and Technology). Our department gives classes such as Organic Chemistry I, Organic Chemistry II, and Food Science and these classes are needed basic level chemistry knowledge: therefore, making sure to understand high school level chemistry is indispensable. In this class, students will study some of fascinating and significant roles which chemistry plays in the world we live. The purpose of this class is to master basic level chemistry knowledge and students will be divided into 4 classes according to the comprehension level of high school level chemistry. Basic knowledge obtained in this class will be important to get an ability to solve many problems concerning foods.

## Academic Goal

1. To be able to understand the structure of atom. (C)
2. To be able to understand the concept of mole. (C)
3. To be able to understand the concept of gas, liquid, and solid. (C)
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5. To be able to understand... 

## Description & Program

Students will be divided into 4 classes, nearly 15 students each class, according to the results of placement test taken at the first lesson. From the second lesson, students will learn under the supervision of each instructor of the same curriculum. The main subjects will be as follows.

1. Structure of atoms.
2. Gas–liquid–solid phases and their chemical changes.
3. Various chemical bonds.
5. Oxidation-reduction reactions.
6. Chemical reactions and equilibrium.
7. Chemicals in environmental pollutions.
8. Summary.

## Evaluation Method

Student’s comprehension is evaluated by the final test (not open-book examination).

Evaluation criteria (score in 100)

- A (excellent): 100–80
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- D (failure): 59–0

Passed scores (more than 60 out of 100 points) are given students who can understand the minimum achievement objective.

## Textbooks/References/URL

The textbook will be informed at the first lecture.

## Evaluation Criteria

- Passing scores (more than 60 out of 100 points) are given students who can understand the minimum achievement objective.

## About return of answer, etc.

After the final exam, sample answers will be placed on the web-based learning support system. Answer sheets will...
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</thead>
<tbody>
<tr>
<td>Department of Marine Policy and Culture</td>
<td>Basic Foundation Subjects</td>
<td>1/Required/2</td>
<td>First Semester Monday 10:30-12:00 Lec. Bldg. Rm. 34</td>
<td>Not available</td>
</tr>
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#### Chief Instructor

- **KUROSE, Kouichi**
  - Building 3, room 404 (KUROSE, Kouichi)
  - Building 3, room 103 (OSAKO, Kazufumi)

#### Room

- Building 3, room 404 (KUROSE, Kouichi)
- Building 3, room 103 (OSAKO, Kazufumi)

#### Contact

- kkuros0@kaiyodai.ac.jp, 03-5463-0601 (KUROSE, Kouichi)
- osako@kaiyodai.ac.jp, 03-5463-0620 (OSAKO, Kazufumi)

#### Office Hours

- Generally available. It is recommended to book an appointment by e-mail in advance.

---

### Instructors

- **KUROSE, Kouichi**
- **OSAKO, Kazufumi**

### Theme & Objectives (Target, Contents, Method)

Chemistry is one of fundamental subjects for students who study in the Department. This course provides an opportunity for students to learn the basic properties of substances and their reactions. Students will gain their confidence in using chemistry to dissolve various problems in the modern world. The lecture will be carried out following the textbook mainly.

### Learning and Educational Objectives

- C: Basic Science

### Academic Goal

1. To understand components of matter and chemical bonding. (C)
2. To understand phases of matter. (C)
3. To understand chemical reactions. (C)
4. To understand inorganic matter. (C)
5. To understand organic compounds such as hydrocarbons, alcohol

### Description & Program

The subjects of this class will be carried out as follows:

1. Components of matter and chemical bonding
2. Phases of matter
3. Chemical reactions
4. Inorganic matter
5. Organic compounds
6. High molecular weight compounds

### Preparation & Review

- Students should read a textbook before the class. Drills in the textbook should be practiced.

### Textbooks/References/URL

**Textbook:**

"Reidaide Manabu Kisokagaku 1st ed., 2nd version" supervised by SASAMOTO Tadashi (¥2,000 + tax). You should get the 2nd version.

### Evaluation Method

The evaluation is done based on the midterm (50%) and final (50%) examinations.

### Evaluation Criteria

- A passing score of 60% or higher will be given to students who achieve the "Target of the student" above mentioned.

### About return of answer, etc.

At the end of the final exam, comments will be provided. Students may receive an explanation of the exam result at the designated time in the teachers' room.

### Other Information

Preparation and review is required.
# General Chemistry

<table>
<thead>
<tr>
<th>Department</th>
<th>Category</th>
<th>Year/Required or Elective/Credit</th>
<th>Day/Hours/Place</th>
<th>Availability for the Lower-class Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ocean Sciences/Marine Biosciences/Marine Policy and Culture</td>
<td>Basic Foundation Subjects</td>
<td>1/Required/2</td>
<td>First Semester Monday 14:40-16:10 Lec. Bldg. Rm. 21</td>
<td>Impossible</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chief Instructor</th>
<th>Room</th>
<th>Contact</th>
<th>Office Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIBI Kyoko</td>
<td></td>
<td><a href="mailto:hibi@kaiyodai.ac.jp">hibi@kaiyodai.ac.jp</a></td>
<td></td>
</tr>
</tbody>
</table>

## Instructors

Kyoko Hibi

## Theme & Objectives (Target, Contents, Method)

This course provides an opportunity to learn the basic properties of substances and their reactions, and to obtain fundamental knowledge of environment, ecology and life. It is the purpose for the students to acquire knowledge when they choose classes in the near future where research and experiment are conducted. In reality, they should be able to understand calculations and chemical formulae for the process of experiments. At first, the basics of theory and organic chemistry are explained, and the problem is maneuvered afterward. The students also solve the problem during the class. At the end of every class the students are given quizzes on what they have learnt on the day. The last quizzes are returned and the explanation of same is given in the following class. (These quizzes are merely to confirm individual student’s degree of acquisition therefore they are not directly connected with evaluation.)

## Academic Goal

The final goal of this lecture is to attain an understanding of the chemistry required for coming lectures in the Univ.

## Description & Program

The following subjects will be studied during the course.

1. Basic properties of natural substances (Inorganic Chemistry, Physical Chemistry)
   1) Atomic structure and chemical bonding
   2) Properties of gases, liquids and solids, and phase changes,
   3) Thermochemistry and chemical equilibrium
   4) Acid and base and oxidation and reduction

2. Compounds concerning Organic chemistry and Biochemistry
   1) Fundamentals of organic chemistry
   2) Electron configuration
   3) Properties of organic compounds
   4) Stereochemistry
   5) Biogenic polymer

(Preparation for lectures) It is expected that students will study the topic of the lecture in advance. As a minimum students are required to study the relevant section of the textbook for each lecture. It is recommended that students undertake additional study.

## Textbooks/References/URL

As the exercise, “Kagaku no Kiso-ensyu” Ed. H. Tanaka, Tokyo kaiyodaogaku seikyo.

<table>
<thead>
<tr>
<th>Evaluation Method</th>
<th>Evaluation Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students are required to take examination on Physical and Inorganic chemistry (representing 50% of the overall course score) and Organic chemistry (representing the other 50% of the overall course score). Students that Learning status on fundamentals of chemistry will be evaluated in the exams. If you reach beyond average levels, you will obtain more than 60.</td>
<td></td>
</tr>
<tr>
<td>About return of answer, etc.</td>
<td></td>
</tr>
<tr>
<td>----------------------------</td>
<td></td>
</tr>
</tbody>
</table>
The examination paper is returned. Model answers will be distributed to the students if necessary.

<table>
<thead>
<tr>
<th>Other Information</th>
</tr>
</thead>
</table>
The second graders or above are eligible to take the lecture. Whereas the first graders are not eligible. Please be careful not to make a mistake in eligibility.
## Aquatic Marine Environmental Literacy (AMEL)

<table>
<thead>
<tr>
<th>Department</th>
<th>Category</th>
<th>Year/Required or Elective/Credit</th>
<th>Day/Hours/Place</th>
<th>Availability for the Lower-class Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>All departments in the faculty of Marine Science</td>
<td>Basic Foundation Subjects</td>
<td>1/Required/1</td>
<td>Third Quarter Thursday 10:30–12:00 Lec. Bldg. Lecture Hall</td>
<td>/</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chief Instructor</th>
<th>Room</th>
<th>Contact</th>
<th>Office Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>SASAKI Tsuyoshi</td>
<td>5–403</td>
<td><a href="mailto:t-sasaki@kaiyodai.ac.jp">t-sasaki@kaiyodai.ac.jp</a></td>
<td>Instructors will announce at the lecture.</td>
</tr>
</tbody>
</table>

### Instructors

Instructors belonging each department

### Theme & Objectives (Target, Contents, Method)

The purposes of AMEL is
1) understanding the Fundamental Concepts about the functioning of the ocean (Aquatic marine environmental literacy)
2) to communicate about the ocean in a meaningful way
3) and to make informed and responsible decisions regarding the ocean and its resources.

### Learning and Educational Objectives

Academic Goal

Aquatic marine environmental literacy means understanding the ocean’s influence on you and your influence on the ocean.

This program make students become Aquatic marine environmental literacy person who can 1) understanding the Fundamental Concepts about the functioning of the ocean and its resources.

### Description & Program

Ocean Literacy means understanding the ocean’s influence on you and your influence on the ocean.

#1 Introduction of this AMEL Studies
#2 Relationship between Environment and Human Society
#3 Ocean as our Environment
#4 Ocean and Ecosystem
#5 Marine resources
#6 Traditional Seafood Culture and Fisheries
#7 Coastal Area and Our Human Life
#8 Environmental Education challenges for the future

### Preparation & Review

Preparation: Contents of the program must be studied before lecture.

Review: To enrich your understanding investigating thesis and book of references which you are interested in should be done.

### Textbooks/References/URL

**Evaluation Method**

Criterion: Students who engage practice, materials development, and writing to achieve the purpose of this program will pass.

At the end of the final exam, sample answers will be given and comments will be provided. Answer sheets may be returned to students at the designated time in the teachers’ room.

### Other Information
Enhancing holistic understanding of marine science and culture, students must be prepared to learn the textbook at first semester.
## Introduction to TOEIC

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<thead>
<tr>
<th>Department</th>
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</tr>
</thead>
<tbody>
<tr>
<td>YOKOGAWA Ayako</td>
<td>Room 207 in the 5th building</td>
<td><a href="mailto:ayokog0@kaiyodai.ac.jp">ayokog0@kaiyodai.ac.jp</a> 03-5463-0379 (Contact person: Ayako YOKOGAWA, Room 207 in 5th building)</td>
<td>The instructor will take questions before or after class. <strong>[TOEIC Counseling]</strong> Mon, Tue, Thu &amp; Fri 10:00-18:00 at Room 207 in the 5th building. It is preferable to make an appointment at <a href="mailto:ayokog0@kaiyodai.ac.jp">ayokog0@kaiyodai.ac.jp</a> in advance.</td>
</tr>
</tbody>
</table>

### Instructors

Ayako YOKOGAWA

**Theme & Objectives (Target, Contents, Method)**

- **Objectives**
  1. develop basic English competence and gain further international communications skills.
  2. master specific strategies for the TOEIC test.
  3. learn how to autonomously improve their English ability throughout their university years.

- **Method**
  1. **Pre-class:** learn vocabulary and structures frequently used on the TOEIC test.
  2. **Class:**
     a. Quiz for the vocabulary and structures
     b. Practice for the TOEIC test
     c. Check the answers and do pronunciation training
  3. **Post-class:** review of what was learned in class and study utilizing the e-learning program, ‘Net Academy2’.

**Academic Goal**

In order to improve their scores on the TOEIC test, the students should be able to:

1. develop basic English competence and gain further international communications skills. (A)
2. learn specific strategies for the TOEIC test. (A)
3. understand the

### Description & Program

1. Introduction
2. Practice (Listening and Reading), guidance for the E-learning program, ‘Net Academy2’
3. Practice (Listening and Reading), training for pronunciation
4. Practice (Listening and Reading), training for pronunciation
5. Practice (Listening and Reading), training for pronunciation
6. Practice (Listening and Reading), training for pronunciation

Each class consists of the following activities:

- (a) Quiz for the vocabulary and structures
- (b) Practice for the TOEIC test
- (c) Check the answers and do pronunciation training

### Learning and Educational Objectives

A: Communication, I: Continuing Education
7. Practice (Listening and Reading), training for pronunciation
8. Practice (Listening and Reading), training for pronunciation
9. Practice (Listening and Reading), training for pronunciation
10. Practice (Listening and Reading), training for pronunciation
11. Practice (Listening and Reading), training for pronunciation
12. Practice (Listening and Reading), training for pronunciation
13. Practice (Listening and Reading), training for pronunciation
14. Practice (Listening and Reading), training for pronunciation
15. Practice (Listening and Reading), training for pronunciation

[Preparation]
- Students are required to learn the vocabulary and structure.

Textbooks/References/URL
Either of the textbooks, A or B, will be designated according to the result of the placement test and introduced by the instructor in the first class. DO NOT purchase any textbook before the first class.
A: [TOEIC(R) Test Official Book Vol. 5] (IIBC)

<table>
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<tr>
<th>Evaluation Method</th>
<th>Evaluation Criteria</th>
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<td>Students' achievement to the attainment target is to be evaluated according to the following criteria holistically. 1. Score on the TOEIC IP test in July 60% 2. In-class quizzes 30% 3. Achievement rate of e-learning program “Netacademy2” 10% ※Students are required to take the TOEIC test in July or in September due to unavoidable circumstances otherwise, they will fail this course automatically. ※Students who achieve 600 or more on the TOEIC IP test in July or TOEIC official tests conducted by the end of July submit their score report to the instructor by Thursday, September 3. (Students who take the TOEIC IP test in September due to circumstances and achieve 600 or more submit their score report to Yokogawa by 6 P.M. on Friday, September 18.)</td>
<td>Students will gain the passing grade 60 when the listed attainment targets are achieved to a minimum extent.</td>
</tr>
</tbody>
</table>

About return of answer, etc.
The instructor will provide answer keys and explanations regarding quizzes conducted in class.

Other Information
The result of the placement will be announced on campus before class. Check your class and go to the assigned class.
※The textbook will be decided according to the result of the placement and introduced by the instructor in the first class. DO NOT pur
# Introduction to TOEIC

## Department

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<th>Department</th>
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<th>Day/Hours/Place</th>
<th>Availability for the Lower-class Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>All departments in the faculty of Marine Science</td>
<td>Basic Foundation Subjects</td>
<td>1/Required/1</td>
<td>First Semester Monday 16:20-17:50 Lec. Bldg. Rm. 33</td>
<td>~</td>
</tr>
</tbody>
</table>

## Chief Instructor

<table>
<thead>
<tr>
<th>Room</th>
<th>Contact</th>
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</thead>
<tbody>
<tr>
<td>YOKOGAWA Ayako</td>
<td>Room 207 in the 5th building <a href="mailto:ayokog0@kaiyodai.ac.jp">ayokog0@kaiyodai.ac.jp</a> 03-5463-0379 (Contact person: Ayako YOKOGAWA, Room 207 in 5th building)</td>
<td>The instructor will take questions before or after class. <strong>[TOEIC Counseling]</strong> Mon, Tue, Thu &amp; Fri 10:00–18:00 at Room 207 in the 5th building. It is preferable to make an appointment at <a href="mailto:ayokog0@kaiyodai.ac.jp">ayokog0@kaiyodai.ac.jp</a> in advance.</td>
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</table>

## Instructors

Ayako YOKOGAWA

## Theme & Objectives (Target, Contents, Method)

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Learning and Educational Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>In order to improve their scores on the TOEIC test, the students will need to:</td>
<td>A: Communication, I: Continuing Education</td>
</tr>
<tr>
<td>1) develop basic English competence and gain further international communications skills. 2) master specific strategies for the TOEIC test. 3) learn how to autonomously improve their English ability throughout their university years.</td>
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</tbody>
</table>

**Method**

1) Pre-class: learn vocabulary and structures frequently used on the TOEIC test.
2) Class:
   (a) Quiz for the vocabulary and structures
   (b) Practice for the TOEIC test
   (c) Check the answers and do pronunciation training
3) Post-class: review of what was learned in class and study utilizing the e-learning program, ‘Net Academy 2’.※

※ The E-learning program, ‘Net Academy 2’, will be introduced in class.

## Academic Goal

In order to improve their scores on the TOEIC test, the students should be able to:

1) develop basic English competence and gain further international communications skills. (A)
2) learn specific strategies for the TOEIC test. (A)
3) understand thei

## Description & Program

<table>
<thead>
<tr>
<th>Preparation &amp; Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>Each class consists of the following activities:</td>
</tr>
<tr>
<td>(a) Quiz for the vocabulary and structures</td>
</tr>
<tr>
<td>(b) Practice for the TOEIC test</td>
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<tr>
<td>(c) Check the answers and do pronunciation training</td>
</tr>
</tbody>
</table>

| 1. Introduction |
| 2. Practice (Listening and Reading), guidance for the E-learning program, ‘Net Academy 2’ |
| 3. Practice (Listening and Reading), training for pronunciation |
| 4. Practice (Listening and Reading), training for pronunciation |
| 5. Practice (Listening and Reading), training for pronunciation |
| 6. Practice (Listening and Reading), training for pronunciation |
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13. Practice (Listening and Reading), training for pronunciation
14. Practice (Listening and Reading), training for pronunciation
15. Practice (Listening and Reading), training for pronunciation

**Preparation**

- Students are required to learn the vocabulary and structure.

**Textbooks/References/URL**

Either of the textbooks, A or B, will be designated according to the result of the placement test and introduced by the instructor in the first class. DO NOT purchase any textbook before the first class.

A: 『TOEIC(R) Test Official Book Vol. 5』 (IIBC)

<table>
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<tr>
<th>Evaluation Method</th>
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<tr>
<td>Students' achievement to the attainment target is to be evaluated according to the following criteria holistically. 1. Score on the TOEIC IP test in July 60% 2. In-class quizzes 30% 3. Achievement rate of e-learning program “Netacademy2” 10% ※Students are required to take the TOEIC test in July or in September due to unavoidable circumstances; otherwise, they will fail this course automatically. ※Students who achieve 600 or more on the TOEIC IP test in July or TOEIC official tests conducted by the end of July submit their score report to the instructor by Thursday, September 3. (Students who take the TOEIC IP test in September due to circumstances and achieve 600 or more submit their score report to Yokogawa by 6 P.M. on Friday, September 18.)</td>
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**About return of answer, etc.**

The instructor will provide answer keys and explanations regarding quizzes conducted in class. ※The final exam will not be explained in class because the TOEIC IP test in July is regarded as the final exam and TOEIC test questions are not disclosed to

**Other Information**

The result of the placement will be announced on campus before class. Check your class and go to the assigned class. ※The textbook will be decided according to the result of the placement and introduced by the instructor in the first class. DO NOT pur
# Introduction to TOEIC

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<tr>
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</thead>
<tbody>
<tr>
<td>All departments in the faculty of Marine Science</td>
<td>Basic Foundation Subjects</td>
<td>1/Required/1</td>
<td>First Semester Tuesday 16:20-17:50 Lec. Bldg. Rm. 35</td>
<td>-</td>
</tr>
</tbody>
</table>

**Chief Instructor**

<table>
<thead>
<tr>
<th>Chief Instructor</th>
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<th>Contact</th>
<th>Office Hours</th>
</tr>
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<tbody>
<tr>
<td>YOKOGAWA Ayako</td>
<td>Room 207 in the 5th building</td>
<td><a href="mailto:ayokog0@kaiyodai.ac.jp">ayokog0@kaiyodai.ac.jp</a> 03-5463-0379 (Contact person: Ayako YOKOGAWA, Room 207 in 5th building)</td>
<td>The instructor will take questions before or after class. [TOEIC Counseling] Mon, Tue, Thu &amp; Fri 10:00–18:00 at Room 207 in the 5th building. It is preferable to make an appointment at <a href="mailto:ayokog0@kaiyodai.ac.jp">ayokog0@kaiyodai.ac.jp</a> in advance.</td>
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</tbody>
</table>

## Instructors

**Ayako YOKOGAWA**

**Theme & Objectives (Target, Contents, Method)**

### Objectives

In order to improve their scores on the TOEIC test, the students will need to:
1. develop basic English competence and gain further international communications skills.
2. master specific strategies for the TOEIC test.
3. learn how to autonomously improve their English ability throughout their university years.

### Method

1. **Pre-class:** learn vocabulary and structures frequently used on the TOEIC test.
2. **Class:**
   - (a) Quiz for the vocabulary and structures
   - (b) Practice for the TOEIC test
   - (c) Check the answers and do pronunciation training
3. **Post-class:** review of what was learned in class and study utilizing the e-learning program, ‘Net Academy2’.※

※ The E-learning program, ‘Net Academy 2’, will be introduced in class.

**Learning and Educational Objectives**

A: Communication, I: Continuing Education

## Academic Goal

In order to improve their scores on the TOEIC test, the students should be able to:
1. develop basic English competence and gain further international communications skills. (A)
2. learn specific strategies for the TOEIC test. (A)
3. understand thei

### Preparation & Review

Each class consists of the following activities:

<table>
<thead>
<tr>
<th>Description &amp; Program</th>
<th>Preparation &amp; Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Introduction</td>
<td>(a) Quiz for the vocabulary and structures</td>
</tr>
<tr>
<td>2. Practice (Listening and Reading), guidance for the E-learning program, ‘Net Academy2’</td>
<td>(b) Practice for the TOEIC test</td>
</tr>
<tr>
<td>3. Practice (Listening and Reading), training for pronunciation</td>
<td>(c) Check the answers and do pronunciation training</td>
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<tr>
<td>4. Practice (Listening and Reading), training for pronunciation</td>
<td></td>
</tr>
<tr>
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<tr>
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【Preparation】
- Students are required to learn the vocabulary and structure.

Textbooks/References/URL
Either of the textbooks, A or B, will be designated according to the result of the placement test and introduced by the instructor in the first class. DO NOT purchase any textbook before the first class.
A: [TOEIC(R) Test Official Book Vol. 5] (IIBC)

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</table>
| Students' achievement to the attainment target is to be evaluated according to the following criteria holistically.  
1. Score on the TOEIC IP test in July  60%  
2. In-class quizzes 30%  
3. Achievement rate of e-learning program “Netacademy2” 10%  
※Students are required to take the TOEIC test in July or in September due to unavoidable circumstances; otherwise, they will fail this course automatically.  
※Students who achieve 600 or more on the TOEIC IP test in July or TOEIC official tests conducted by the end of July submit their score report to the instructor by Thursday, September 3. (Students who take the TOEIC IP test in September due to circumstances and achieve 600 or more submit their score report to Yokogawa by 6 P.M. on Friday, September 18.) | Students will gain the passing grade 60 when the listed attainment targets are achieved to a minimum extent. |

About return of answer, etc.
The instructor will provide answer keys and explanations regarding quizzes conducted in class.
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Other Information
The result of the placement will be announced on campus before class. Check your class and go to the assigned class.
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### Introduction to TOEIC

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<tr>
<th>Chief Instructor</th>
<th>Room</th>
<th>Contact</th>
<th>Office Hours</th>
</tr>
</thead>
</table>
| HANADA Tetsuya   | TOEIC faculty’s room (Room 408 in the 5th building) | ayokog0@kaiyodai.ac.jp 03-5463-0379 (Contact person: Ayako YOKOGAWA, Room 207 in 5th building) | The instructor will take questions before or after class.  
【TOEIC Counseling】  
Mon, Tue, Thu & Fri 10:00—18:00 at Room 207 in the 5th building.  
It is preferable to make an appointment at ayokog0@kaiyodai.ac.jp in advance. |

### Instructors

Tetsuya HANADA

### Theme & Objectives (Target, Contents, Method)

**Objectives**

In order to improve their scores on the TOEIC test, the students will need to:
1) develop basic English competence and gain further international communications skills.
2) master specific strategies for the TOEIC test.
3) learn how to autonomously improve their English ability throughout their university years.

**Method**

1) **Pre-class:** learn vocabulary and structures frequently used on the TOEIC test.
2) **Class:**
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### Academic Goal

In order to improve their scores on the TOEIC test, the students should be able to:
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### Learning and Educational Objectives

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Instructors

Atsushi WATANABE

Theme & Objectives (Target, Contents, Method)

【Objectives】
In order to improve their scores on the TOEIC test, the students will need to:
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A: Communication, I: Continuing Education

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Instructors

Pasca ROMAN

Theme & Objectives (Target, Contents, Method)

**[Objectives]**

In order to improve their scores on the TOEIC test, the students will need to:
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Instructors

Tetsuya HANADA

Theme & Objectives (Target, Contents, Method)

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Learning and Educational Objectives

A: Communication, I: Continuing Education

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Instructors

Atsushi WATANABE

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## Instructors

Pasca ROMAN

## Theme & Objectives (Target, Contents, Method)

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3. Achievement rate of e-learning program “Netacademy2”  10%

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### Evaluation Criteria

Students will gain the passing grade 60 only when the attainment targets are achieved to a minimum extent.

### About return of answer, etc.

The instructor will provide answer keys and explanations regarding quizzes conducted in class.

※The final exam will not be explained in class because the TOEIC IP test in July is regarded as the final exam and TOEIC test questions are not disclosed to.

### Other Information

The result of the placement will be announced on campus before class. Check your class and go to the assigned class.

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**Textbooks/References/URL**

Either of the textbooks, A or B, will be designated according to the result of the placement test and introduced by the instructor in the first class. DO NOT purchase any textbook before the first class.

A: 『TOEIC(R) Test Official Book Vol.5』  (IIBC)
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### Instructors

**Tetsuya HANADA**

### Theme & Objectives (Target, Contents, Method)

#### Objectives

In order to improve their scores on the TOEIC test, the students will need to:

1. develop basic English competence and gain further international communications skills.
2. master specific strategies for the TOEIC test.
3. learn how to autonomously improve their English ability throughout their university years.

#### Method

1. **Pre-class:** learn vocabulary and structures frequently used on the TOEIC test.
2. **Class:**
   - (a) Quiz for the vocabulary and structures
   - (b) Practice for the TOEIC test
   - (c) Check the answers and do pronunciation training
3. **Post-class:** review of what was learned in class and study utilizing the e-learning program, ‘Net Academy2’.

#### Academic Goal

In order to improve their scores on the TOEIC test, the students should be able to:

1. develop basic English competence and gain further international communications skills. (A)
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【Preparation】
- Students are required to learn the vocabulary and structure.

Textbooks/References/URL
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A:『TOEIC(R) Test Official Book Vol.5』（IIBC）

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### Chief Instructor
- **Name:** WATANABE Atsushi
- **Room:** TOEIC faculty’s room (Room 408 in the 5th building)
- **Contact:** ayokog0@kaiydai.ac.jp 03-5463-0379
  (Contact person: Ayako YOKOGAWA, Room 207 in 5th building)

### Instructors
- **Name:** Atsushi WATANABE

### Theme & Objectives (Target, Contents, Method)

#### Objectives
- In order to improve their scores on the TOEIC test, the students will need to:
  1. develop basic English competence and gain further international communications skills.
  2. master specific strategies for the TOEIC test.
  3. learn how to autonomously improve their English ability throughout their university years.

#### Method
- 1) Pre-class: learn vocabulary and structures frequently used on the TOEIC test.
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### Learning and Educational Objectives
- A: Communication, I: Continuing Education

### Academic Goal
- In order to improve their scores on the TOEIC test, the students should be able to:
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### Chief Instructor & Room

| HANADA Tetsuya | TOEIC faculty's room (Room 408 in the 5th building) | ayokog0@kaiyodai.ac.jp 03-5463-0379 (Contact person: Ayako YOKOGAWA, Room 207 in 5th building) | The instructor will take questions before or after class.  
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### Instructors

Tetsuya HANADA

### Theme & Objectives (Target, Contents, Method)

#### Objectives

In order to improve their scores on the TOEIC test, the students will need to:

1. develop basic English competence and gain further international communications skills.
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### Learning and Educational Objectives

A: Communication, I: Continuing Education

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### Preparation & Review

Each class consists of the following activities:

1. Quiz for the vocabulary and structures
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**Textbooks/References/URL**

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A: 『TOEIC(R) Test Official Book Vol. 5』 (IIIBC)
# Introduction to TOEIC

## Department
- All departments in the faculty of Marine Science

## Category
- Basic Foundation Subjects

## Year/Required or Elective/Credit
- 1/Required/1

## Day/Hours/Place
- First Semester Thursday 14:40-16:10 Lec. Bldg. Rm. 43

## Availability for the Lower-class Students
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## Chief Instructor
- WATANABE Atsushi

## Room
- TOEIC faculty’s room (Room 408 in the 5th building)

## Contact
- ayokogO@kaiyodai.ac.jp
  - 03-5463-0379
  - (Contact person: Ayako YOKOGAWA, Room 207 in 5th building)

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---

## Instructors

**Atsushi WATANABE**

### Theme & Objectives (Target, Contents, Method)

#### Objectives
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### Learning and Educational Objectives
- A: Communication, I: Continuing Education

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**[Preparation]**
- Students are required to learn the vocabulary and structures.

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**Other Information**
This class is exclusively for the students of the year 2014.
# Introduction to TOEIC

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**Day/Hours/Place**

| Second Semester | Monday 14:40–16:10 Bldg. 2 Rm. 100B |

**Availability for the Lower-class Students**

- |

## Chief Instructor

Grace Randall K

**Room**

TOEIC faculty's room (Room 408 in the 5th building)

**Contact**

[ayokog0@kaiyodai.ac.jp](mailto:ayokog0@kaiyodai.ac.jp)

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## Instructors

Grace Randall K

## Theme & Objectives (Target, Contents, Method)

### Objectives

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## Academic Goal

In order to improve their scores on the TOEIC test, the students should be able to:

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## Learning and Educational Objectives

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【Preparation】
- Students are required to learn the vocabulary and structure

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<td>Grace Randall K</td>
<td>TOEIC faculty’s room (Room 408 in the 5th building)</td>
<td><a href="mailto:ayokog0@kaiyodai.ac.jp">ayokog0@kaiyodai.ac.jp</a> 03-5463-0379 (Contact person: Ayako YOKOGAWA, Room 207 in 5th building)</td>
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## Instructors
Grace Randall K

## Theme & Objectives (Target, Contents, Method)

### Objectives
In order to improve their scores on the TOEIC test, the students will need to:
1. develop basic English competence and gain further international communications skills.
2. master specific strategies for the TOEIC test.
3. learn how to autonomously improve their English ability throughout their university years.

### Method
1. Pre-class: learn vocabulary and structures frequently asked used on the TOEIC test.
2. Class:
   a. Quiz for the vocabulary and structures
   b. Practice for the TOEIC test
   c. Check the answers and do pronunciation training
3. Post-class: review of what was learned in class and study utilizing the E-learning program, ‘Net Academy2’.※
   ※ The E-learning program, ‘Net Academy 2’, will be introduced in class.

## Learning and Educational Objectives
A: Communication, I: Continuing Education

## Academic Goal
In order to improve their scores on the TOEIC test, the students should be able to:
1. develop the basic English competence and gain further international communications skills. (A)
2. learn specific strategies for the TOEIC test. (A)
3. grasp their

## Description & Program
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5. Practice (Listening and Reading), training for pronunciation
6. Practice (Listening and Reading), training for pronunciation

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Each class consists of the following activities:
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14. Practice (Listening and Reading), training for pronunciation
15. Practice (Listening and Reading), training for pronunciation

**Preparation**
- Students are required to learn the vocabulary and structure.

**Textbooks/References/URL**

『TOEIC(R) Test Official Book vol. 3』 (IIBC)
※Additionally, handouts are distributed by the instructor.

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**About return of answer, etc.**
The instructor will provide answer keys and explanations regarding quizzes conducted in class.
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**Other Information**
The result of the placement test will be announced on campus before class. Check your class and go to the assigned class.
※If you are unable to take your assigned class due to circumstances, contact before the second class.
Contact person: Ayako YOK
Introduction to TOEIC

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</table>

Chief Instructor: HANADA Tetsuya  
Room: TOEIC faculty's room (Room 408 in the 5th building)  
Contact: ayokog0@kaiyodai.ac.jp  
Office Hours: The instructor will take questions before or after class.  
TOEIC Counseling: Mon, Tue, Thu & Fri 10:00-18:00 at Room 207 in the 5th building. It is preferable to make an appointment at ayokog0@kaiyodai.ac.jp in advance.

Instructors

Tetsuya HANADA

Theme & Objectives (Target, Contents, Method)

[Objectives]  
In order to improve their scores on the TOEIC test, the students will need to:  
1) develop basic English competence and gain further international communications skills.  
2) master specific strategies for the TOEIC test.  
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**Textbooks/References/URL**

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Contact person: Ayako YOKOGAWA
# Introduction to TOEIC

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**Chief Instructor**

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<th>Name</th>
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## Instructors

| Tetsuya HANADA |

### Theme & Objectives (Target, Contents, Method)

**Objectives**

In order to improve their scores on the TOEIC test, the students will need to:

1. develop basic English competence and gain further international communications skills.
2. master specific strategies for the TOEIC test.
3. learn how to autonomously improve their English ability throughout their university years.

**Method**

1. Pre-class: learn vocabulary and structures frequently asked used on the TOEIC test.
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### Academic Goal

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【Preparation】
- Students are required to learn the vocabulary and structure.

Textbooks/References/URL
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Contact person: Ayako YOKOGAWA
### Introduction to TOEIC

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#### Chief Instructor

**WATANABE Atsushi**

**Room**

TOEIC faculty’s room (Room 408 in the 5th building)

**Contact**

ayokog0@kaiyodai.ac.jp

03-5463-0379

(Contact person: Ayako YOKOGAWA, Room 207 in 5th building)

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#### Instructors

**Atsushi WATANABE**

#### Theme & Objectives (Target, Contents, Method)

**Objectives**

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#### Learning and Educational Objectives

- A: Communication
- I: Continuing Education

#### Academic Goal

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**Textbooks/References/URL**

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Contact person: Ayako YOKOGAWA
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Instructors

Atsushi WATANABE

Theme & Objectives (Target, Contents, Method)

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Learning and Educational Objectives
A: Communication, I: Continuing Education

Academic Goal
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Description & Program
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**[Preparation]**
- Students are required to learn the vocabulary and structure.

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**Mathematical Analysis**

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**Chief Instructor**

<table>
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<tr>
<th>Chief Instructor</th>
<th>Room</th>
<th>Contact</th>
<th>Office Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>KAMIMURA Yutaka</td>
<td>Office: Bld.5 Rm.103</td>
<td>Office: Bld.5 Rm.103</td>
<td>Office hour: anytime</td>
</tr>
</tbody>
</table>

**Instructors**

Yutaka Kamimura

**Theme & Objectives (Target, Contents, Method)**

It is important to know the method of differential and integral calculus with several valuables because the functions used in the field of natural sciences generally depend on several valuables. The aim of this lecture is the understanding and the mastery of methods of the calculus of several variables and its application. Students may learn how to view, how to study, how to consider, how to discuss, and how to express a subject, based upon logical thinking, through differential and integral calculus with several valuables, as well as learn how to analyse problems.

**Learning and Educational Objectives**

C: Basic of Science

**Academic Goal**

The final goal of this lecture is to acquire the calculus of the (partial) differentiation, its applications, the concept of multiple integrals, and their computation. (C)

**Description & Program**

The plan of the class is as follows:

1. Functions of several variables and their graphs
2. Definition of the partial derivatives and their computation
3. Extremmal values of functions of several variables
4. Maximums and minimums of functions of several variables
5. Differential of functions of several variables
6. The chain rule of partial derivatives
7. Exercise on differential calculus
8. Examination on differential calculus
9. Concept and definition of multiple integrals
10. Multiple integrals and iterated integrals
11. Measure
12. Change of variables in multiple integrals
13. Application of multiple integrals
14. Exercise on differential calculus
15. Higher partial derivatives

**Preparation & Review**

Solve problems in related exercises in the textbook after reviewing contents of lectures, and, after it, read the textbook concerning the content of the next class.

**Textbooks/References/URL**

Suugaku Nyuumon II. by Y. Kamimura and K. Tsuboi. Tokyo Kagaku Dojin

**Evaluation Method**

Your final record is graded by the two examinations. The first examination is on the calculus of the (partial) differentiation, and the second (final) examination is on the multiple integrals and calculus of the differentiation.

**Evaluation Criteria**

Your final record is over 60% only if you reach the goal described above.

**About return of answer, etc.**

After exams, at the designated time and place, answer sheets will be returned to students and sample answers and comments will be provided.
<table>
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<td>Freshmen in Department of Ocean Sciences with odd numbers for their student numbers should take this hour.</td>
</tr>
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</table>
# Mathematical Analysis

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</tbody>
</table>

### Chief Instructor
- KAMIMURA Yutaka
  - Office: Bld. 5 Rm. 103
  - Contact: Office: Bld. 5 Rm. 103
  - Office hour: anytime

### Instructors
- Yutaka Kamimura

### Theme & Objectives (Target, Contents, Method)
It is important to know the method of differential and integral calculus with several valuables because the functions used in the field of natural sciences generally depend on several valuables. The aim of this lecture is the understanding and the mastery of methods of the calculus of several variables and its application. Students may learn how to view, how to study, how to consider, how to discuss, and how to express a subject, based upon logical thinking, through differential and integral calculus with several valuables, as well as learn how to analyse problems.

### Academic Goal
The final goal of this lecture is to acquire the calculus of the (partial) differentiation, its applications, the concept of multiple integrals, and their computation. (C)

### Description & Program
1. Functions of several variables and their graphs
2. Definition of the partial derivatives and their computation
3. Extremmal values of functions of several variables
4. Maximums and minimums of functions of several variables
5. Differential of functions of several variables
6. The chain rule of partial derivatives
7. Exercise on differential calculus
8. Examination on differential calculus
9. Concept and definition of multiple integrals
10. Multiple integrals and iterated integrals
11. Measure
12. Change of variables in multiple integrals
13. Application of multiple integrals
14. Exercise on differential calculus
15. Higher partial derivatives

### Preparation & Review
Solve problems in related exercises in the textbook after reviewing contents of lectures, and, after it, read the textbook concerning the content of the next class.

### Textbooks/References/URL
Suugaku Nyuumon II, by Y. Kamimura and K. Tsuboi, Tokyo Kagaku Dojin

### Evaluation Method
Your final record is graded by the two examinations. The first examination is on the calculus of the (partial) differentiation, and the second (final) examination is on the multiple integrals and calculus of the differentiation.

### Evaluation Criteria
Your final record is over 60% only if you reach the goal described above.

### About return of answer, etc.
After exams, at the designated time and place, answer sheets will be returned to students and sample answers and comments will be provided.

### Other Information
Freshmen in Department of Ocean Sciences with odd numbers for their student numbers should take this hour.
# Theme & Objectives (Target, Contents, Method)

It is important to know the method of differential and integral calculus with several valuables because the functions used in the field of natural sciences generally depend on several valuables. The aim of this lecture is the understanding and the mastery of methods of the calculus of several variables and their application.

## Learning and Educational Objectives

\( C \): Basic of Science

## Academic Goal

The final goal of this lecture is to acquire the calculus of the (partial) differentiation, its applications, the concept of multiple integrals, and their computation.

## Description & Program

<table>
<thead>
<tr>
<th></th>
<th>Description &amp; Program</th>
<th>Preparation &amp; Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Definition of the partial differentiation and the calculation of higher partial derivatives</td>
<td>[Preparation] You know Mathematics is an accumulation of training s. An examination, for every section, is carried out for motivating to learn. In every class, it may be given time of the exercise to do fourteen homeworks mainly based on sections 5 and 6</td>
</tr>
<tr>
<td>2</td>
<td>Chain rule of partial derivatives</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Application of the partial differentiation</td>
<td></td>
</tr>
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<td>4</td>
<td>Functions of several variables and their graphs</td>
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<td>5</td>
<td>Multiple integrals and iterated integrals 1</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Multiple integrals and iterated integrals 2</td>
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</tr>
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<td>7</td>
<td>Multiple integrals and iterated integrals 3</td>
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<td>Multiple integrals and iterated integrals 4</td>
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<td>9</td>
<td>Change of variables in multiple integrals 1</td>
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<td>10</td>
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<tr>
<td>13</td>
<td>Change of variables in multiple integrals 5</td>
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</tr>
<tr>
<td>14</td>
<td>Volume of a three-dimensional shape 1</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Volume of a three-dimensional shape 2</td>
<td></td>
</tr>
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</table>

## Textbooks/References/URL

Textbook is "Suugaku Nyuumon II", by Y. Kamimura and K. Tsuboi, Tokyo Kagaku Dojin. In addition, as references some prints are distributed in class.

## Evaluation Method

As a mark given for class participation, four small tests and fourteen homeworks are each marked out of 100, which are amounted to 1800. Further, four proficiency tests are marked each out of 450, which are amounted to 1800.

Your final record is graded by the average mark of 3600.

## About return of answer, etc.

I will return all examinations. Expect eleven small tests, I will give suggested answers for every examinations.

## Other Information

First-year students of the department of Ocean Sciences whose ID numbers end with an odd number must take this course. This only applies to first-year students.
# Mathematical Analysis

<table>
<thead>
<tr>
<th>Department</th>
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<th>Day/Hours/Place</th>
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<tbody>
<tr>
<td>Department of Marine Biosciences</td>
<td>Basic Foundation Subjects</td>
<td>1/Elective/2</td>
<td>Second Semester Monday 13:00–14:30 Lec. Bldg. Rm. 41</td>
<td></td>
</tr>
</tbody>
</table>

**Chief Instructor**

HIRATA Daisuke

**Room**

**Contact**

**Office Hours**

---

## Instructors

Daisuke Hirata

## Theme & Objectives (Target, Contents, Method)

It is important to know the method of differential and integral calculus with several valuables because the functions used in the field of natural sciences generally depend on several valuables. The aim of this lecture is the understanding and the mastery of methods of the calculus of several variables and its application. Students may learn how to view, how to study, how to consider, how to discuss, and how to express a subject based upon logical thinking, through differential and integral calculus with several valuables, as well as learn how to analyze problems.

## Academic Goal

The final goal of this lecture is to acquire the calculus of the (partial) differentiation, its applications, the concept of multiple integrals and their computation.

## Description & Program

1. Functions of several variables and their graphs
2. Definition of the partial derivatives and their computation
3. Local extrema of functions of several variables
4. Maximums and minimums of functions of several variables
5. Differentiation of functions of several variables
6. The chain rule of partial derivatives
7. Exercise on differential calculus
8. Examination on differential calculus
9. Concept and definition of multiple integrals
10. Multiple integrals and iterated integrals
11. Measure
12. Change of variables in multiple integrals
13. Application of multiple integrals
14. Exercise on differential calculus
15. Higher partial derivatives

## Preparation & Review

You should prepare for the next lecture in the textbook if possible. Solve the exercises in the lecture by yourself. If you have some question in the lecture, don’t hesitate to ask it.

## Textbooks/References/URL

「Suugaku-Nyuuumon II」 (Y. Kamimura and K. Tsuboi, Tokyo Kagaku Dojin)

## Evaluation Method

Your final record is graded by the two examinations. The first examination is on the calculus of the (partial) differentiation, and the second (final) examination is on the multiple integrals and the calculus of the differentiation.

## Evaluation Criteria

Your final record is over 60% only if you reach the goal described above.

## About return of answer, etc.

Each of reporting assignments or examination papers is returned and elucidated in a class.
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<th>Department of Marine Policy and Culture</th>
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<tr>
<td>HAGA Junichi</td>
<td></td>
<td></td>
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### Instructors

Jun-ichi Haga

### Theme & Objectives (Target, Contents, Method)

It is important to know the method of differential and integral calculus with several valuables because the functions used in the field of natural sciences generally depend on several valuables. The aim of this lecture is the understanding and the mastery of methods of the calculus of several variables and their application.

### Academic Goal

The final goal of this lecture is to acquire the calculus of the (partial) differentiation, its applications, the concept of multiple integrals, and their computation.

### Description & Program

1. Definition of the partial differentiation and the calculation of higher partial derivatives
2. Chain rule of partial derivatives
3. Application of the partial differentiation
4. Functions of several variables and their graphs
5. Multiple integrals and iterated integrals 1
6. Multiple integrals and iterated integrals 2
7. Multiple integrals and iterated integrals 3
8. Multiple integrals and iterated integrals 4
9. Change of variables in multiple integrals 1
10. Change of variables in multiple integrals 2
11. Change of variables in multiple integrals 3
12. Change of variables in multiple integrals 4
13. Change of variables in multiple integrals 5
14. Volume of a three-dimensional shape 1
15. Volume of a three-dimensional shape 2

### Preparation & Review

**Preparation**

You know Mathematics is an accumulation of training s. An examination, for every section, is carried out for motivating to learn. In every class, it may be given time of the exercise to do fourteen homeworks mainly based on sections 5 and 6.

### Textbooks/References/URL

Textbook is “Suugaku Nyuumon II”, by Y. Kamimura and K. Tsuboi, Tokyo Kagaku Dojin. In addition, as references some prints are distributed in class.

### Evaluation Method

As a mark given for class participation, four small tests and fourteen homeworks are each marked out of 100, which are amounted to 1800. Further, four proficiency tests are marked each out of 450, which are amounted to 1800.

Your final record is graded by the average mark of 3600.

### About return of answer, etc.

I will return all examinations. Expect eleven small tests, I will give suggested answers for every examinations.

### Other Information
# Mathematical Analysis

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<tr>
<td>Department of Food Science</td>
<td>Basic Foundation</td>
<td>1/Elective/2</td>
<td>Second Semester Thursday 13:00–14:30 Lec. Bldg. Rm. 34</td>
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<tr>
<td>and Technology</td>
<td>Subjects</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Chief Instructor**: HIRATA Daisuke

**Room**: Contact

**Office Hours**:  

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## Instructors

Daisuke Hirata

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## Theme & Objectives (Target, Contents, Method)

It is important to know the method of differential and integral calculus with several valuables because the functions used in the field of natural sciences generally depend on several valuables. The aim of this lecture is the understanding and the mastery of methods of the calculus of several variables and its application. Students may learn how to view, how to study, how to consider, how to discuss, and how to express a subject based upon logical thinking, through differential and integral calculus with several valuables, as well as learn how to analyze problems.

---

## Academic Goal

The final goal of this lecture is to acquire the calculus of the (partial) differentiation, its applications, the concept of multiple integrals and their computation. (C)

### Description & Program

1. Functions of several variables and their graphs
2. Definition of the partial derivatives and their computation
3. Local extrema of functions of several variables
4. Maximums and minimums of functions of several variables
5. Differentiation of functions of several variables
6. The chain rule of partial derivatives
7. Exercise on differential calculus
8. Examination on differential calculus
9. Concept and definition of multiple integrals
10. Multiple integrals and iterated integrals
11. Measure
12. Change of variables in multiple integrals
13. Application of multiple integrals
14. Exercise on differential calculus
15. Higher partial derivatives

### Preparation & Review

You should prepare for the next lecture in the textbook if possible. Solve the exercises in the lecture by yourself. If you have some question in the lecture, don’t hesitate to ask it.

---

## Textbooks/References/URL

「Suugaku-Nyuuumon II」 (Y. Kamimura and K. Tsuboi, Tokyo Kagaku Dojin)

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## Evaluation Method

Your final record is graded by the two examinations. The first examination is on the calculus of the (partial) differentiation, and the second (final) examination is on the multiple integrals and the calculus of the differentiation.

## Evaluation Criteria

Your final record is over 60% only if you reach the goal described above.

---

## About return of answer, etc.

Each of reporting assignments or examination papers is returned and elucidated in a class.
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<tr>
<td>First year students of the department of Food Science and Technology must take this course. This only applies to the first year students.</td>
</tr>
</tbody>
</table>
# Mathematical Survey

<table>
<thead>
<tr>
<th>Department of Ocean Sciences</th>
<th>Basic Foundation Subjects</th>
<th>Year/Required or Elective/Credit</th>
<th>Day/Hours/Place</th>
<th>Availability for the Lower-class Students</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Chief Instructor</th>
<th>Room</th>
<th>Contact</th>
<th>Office Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAKASHIMA Kimie</td>
<td>Bld. 5 Rm. 106.</td>
<td>Phone: 03-5463-0637 E-mail: <a href="mailto:nkimie@kaiyodai.ac.jp">nkimie@kaiyodai.ac.jp</a></td>
<td>From the noon to 13 O’clock on Monday and Tuesday.</td>
</tr>
</tbody>
</table>

## Instructors

Kimie Nakashima

## Theme & Objectives (Target, Contents, Method)

This class is an introductory course to the linear algebra, which is necessary for the analysis of functions of several variables in natural sciences. The aim of this lecture is the understanding and the mastery of the fundamental method of the calculation of matrices. Students may learn how to view, how to study, how to consider, how to discuss, and how to express a subject, based upon logical thinking, as well as learn how to analyze problems.

## Academic Goal

The final goal of this lecture is to acquire the foundation of the linear algebra. (C)

## Description & Program

1. Definition of matrices
2. Calculation of matrices
3. Elementary transformation and elementary matrices
4. Regular matrices and their inverse matrices
5. Properties of regular matrices
6. Elementary transformation and rank of matrices
7. Elementary transformation and inverse matrices
8. Properties of rank of matrices
9. Matrices and linear equations I
10. Matrices and linear equations II
11. Homogeneous equations
12. Determinant of matrices
13. Elementary transformation and determinant of matrices
14. Determinant and regularity of matrices
15. Cofactor

Solve problems in related exercises in the textbook after reviewing contents of lectures.

## Textbooks/References/URL

Textbook is “Suugaku Nyuumon II”, by Y. Kamimura and K. Tsuboi, Tokyo Kagaku Dojin

## Evaluation Method

Your final record is graded by the examination (Mid term examination(40%), final exam(60%).)

## Evaluation Criteria

Your final record is over 60% only if you reach the goal described above.

## About return of answer, etc.

In appointed time after finishing an examination, the answer sheets of the examination are returned to the students and the answer of the examination is explained.
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<td>First-year students of the department of Ocean Sciences whose ID numbers end with an even number must take the second hour, with an odd number must take the third hour.</td>
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**Mathematical Survey**

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### Instructors

Kimie Nakashima

### Theme & Objectives (Target, Contents, Method)

This class is an introductory course to the linear algebra, which is necessary for the analysis of functions of several variables in natural sciences. The aim of this lecture is the understanding and the mastery of the fundamental method of the calculation of matrices. Students may learn how to view, how to study, how to consider, how to discuss, and how to express a subject, based upon logical thinking, as well as learn how to analyze problems.

### Academic Goal

The final goal of this lecture is to acquire the foundation of the linear algebra. (C)

### Description & Program

<table>
<thead>
<tr>
<th>Plan of this lecture:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Definition of matrices</td>
</tr>
<tr>
<td>2. Calculation of matrices</td>
</tr>
<tr>
<td>3. Elementary transformation and elementary matrices</td>
</tr>
<tr>
<td>4. Regular matrices and their inverse matrices</td>
</tr>
<tr>
<td>5. Properties of regular matrices</td>
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<td>6. Elementary transformation and rank of matrices</td>
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<tr>
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<tr>
<td>8. Properties of rank of matrices</td>
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<tr>
<td>9. Matrices and linear equations I</td>
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<tr>
<td>10. Matrices and linear equations II</td>
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<td>11. Homogeneous equations</td>
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<tr>
<td>14. Determinant and regularity of matrices</td>
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<td>15. Cofactor</td>
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### Preparation & Review

Solve problems in related exercises in the textbook after reviewing contents of lectures.

### Textbooks/References/URL

Textbook is “Suugaku Nyuumon II”, by Y. Kamimura and K. Tsuboi, Tokyo Kagaku Dojin

### Evaluation Method

Your final record is graded by the examination (Mid term examination(40%), final exam(60%)).

### Evaluation Criteria

Your final record is over 60% only if you reach the goal described above.

### About return of answer, etc.

In appointed time after finishing an examination, the answer sheets of the examination are returned to the students and the answer of the examination is explained.
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<td>Second Semester Monday 14:40–16:10 Lec. Bldg. Rm. 44</td>
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## Instructors

Jun-ichi Haga

## Theme & Objectives (Target, Contents, Method)

This class is an introductory course to the linear algebra, which is necessary for the analysis of functions of several variables in natural sciences. The aim of this lecture is the understanding and the mastery of the fundamental method of the calculation of matrices. Students may learn how to view, how to study, how to consider, how to discuss, and how to express a subject, based upon logical thinking, through differential and integral calculus with several valuables, as well as learn how to analyze problem.

## Academic Goal

The final goal of this lecture is to acquire the foundation of the linear algebra. (C)

### Description & Program

1. Definition of matrices
2. Calculation of matrices
3. Elementary transformation and the rank of matrices
4. Reduced row echelon matrix
5. Matrices and linear equations I
6. Matrices and linear equations II
7. Requirements of the existence of solutions of linear equations I
8. Requirements of the existence of solutions of linear equations II
9. Regular matrices and their inverse matrices
10. Calculation of inverse matrices
11. Definition of determinant of matrices
12. Elementary transformation and determinant of matrices
13. Determinant and regularity of matrices
14. Cofactor expansion
15. Factorization of determinant of matrices including unknown number

### Preparation & Review

**[Preparation]**
You know Mathematics is an accumulation of trainings. An examination, for every section, is carried out for motivating to learn. In every class, it may be given times of the exercise to do seven homeworks according to sections from 2 to 15.

## Textbooks/References/URL

Textbook is “Suugaku Nyuumon II”, by Y. Kamimura and K. Tsuboi, Tokyo Kagaku Dojin. In addition, as references some prints are distributed in class.

## Evaluation Method

As a mark given for class participation, eight small tests and ten homeworks are each marked out of 100, which are amounted to 1800. Further, three proficiency tests are marked each out of 600, which are amounted to 1800.

## Evaluation Criteria

Your final record is graded by the average mark of 3600.
I will return all examinations. Expect eleven small tests. I will give suggested answers for every examinations.

Other Information

First-year students of the department of Ocean Sciences whose ID numbers end with an odd number must take this course. This only applies to first-year students.
Mathematical Survey

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Chief Instructor

HIRATA Daisuke

Room

Contact

Office Hours

Instructors

Daisuke Hirata

Theme & Objectives (Target, Contents, Method)

This class is an introductory course to the linear algebra, which is necessary for the analysis of functions of several variables in natural sciences. The aim of this lecture is the understanding and the mastery of the fundamental method of the calculation of matrices.

Students may learn how to view, how to study, how to consider, how to discuss, and how to express a subject, based upon logical thinking.

Learning and Educational Objectives

◎ C: Basic of Science

Academic Goal

The final goal of this lecture is to acquire the foundation of the linear algebra. (C)

Description & Program

Preparation & Review

1. Definition of matrices
   You should prepare for the next lecture in the textbook if possible.
2. Calculation of matrices
   Solve the exercises in the lecture by yourself.
3. Elementary transformation and elementary matrices
   If you have some question in the lecture, don’t hesitate to ask it.
4. Regular matrices and their inverse matrices
5. Properties of regular matrices
6. Elementary transformation and rank of matrices
7. Elementary transformation and inverse of matrices
8. Properties of rank of matrices
9. Matrices and linear equation I
10. Matrices and linear equation II
11. Homogeneous equations
12. Determinant of matrices
13. Elementary transformation and determinant of matrices
14. Determinant and regularity of matrices
15. Cofactor and inverse matrices

Textbooks/References/URL

「Suugaku-Nyuuumon II」 (Y. Kamimura and K. Tsuboi, Tokyo Kagaku Dojin)

Evaluation Method

Evaluation Criteria

Your final record is graded by the two examinations. The first examination is on the calculus of the (partial) differentiation, and the second (final) examination is on the multiple integrals and the calculus of the differentiation.

Your final record is over 60% only if you reach the goal described above.

About return of answer, etc.

Each of reporting assignments or examination papers is returned and elucidated in a class.

Other Information
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# Mathematical Survey

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## Instructors

Jun-ichi Haga

## Theme & Objectives (Target, Contents, Method)

This class is an introductory course to the linear algebra, which is necessary for the analysis of functions of several variables in natural sciences. The aim of this lecture is the understanding and the mastery of the fundamental method of the calculation of matrices. Students may learn how to view, how to study, how to consider, how to discuss, and how to express a subject, based upon logical thinking, through differential and integral calculus with several valuables, as well as learn how to analyze problem.

## Learning and Educational Objectives

- **C : Basic of Science**

## Academic Goal

The final goal of this lecture is to acquire the foundation of the linear algebra. (C)

## Description & Program

<table>
<thead>
<tr>
<th>Description &amp; Program</th>
<th>Preparation &amp; Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Definition of matrices</td>
<td>[Preparation] You know Mathematics is an accumulation of training s. An examination, for every section, is carried out for motivating to learn. In every class, it may be given times of the exercise to do seven homeworks according to sections from 2 to 15.</td>
</tr>
<tr>
<td>2. Calculation of matrices</td>
<td></td>
</tr>
<tr>
<td>3. Elementary transformation and the rank of matrices</td>
<td></td>
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<tr>
<td>4. Reduced row echelon matrix</td>
<td></td>
</tr>
<tr>
<td>5. Matrices and linear equations I</td>
<td></td>
</tr>
<tr>
<td>6. Matrices and linear equations II</td>
<td></td>
</tr>
<tr>
<td>7. Requirements of the existence of solutions of linear equations I</td>
<td></td>
</tr>
<tr>
<td>8. Requirements of the existence of solutions of linear equations II</td>
<td></td>
</tr>
<tr>
<td>9. Regular matrices and their inverse matrices</td>
<td></td>
</tr>
<tr>
<td>10. Calculation of inverse matrices</td>
<td></td>
</tr>
<tr>
<td>11. Definition of determinant of matrices</td>
<td></td>
</tr>
<tr>
<td>12. Elementary transformation and determinant of matrices</td>
<td></td>
</tr>
<tr>
<td>13. Determinant and regularity of matrices</td>
<td></td>
</tr>
<tr>
<td>14. Cofactor expansion</td>
<td></td>
</tr>
<tr>
<td>15. Factorization of determinant of matrices including unknown number</td>
<td></td>
</tr>
</tbody>
</table>

## Textbooks/References/URL

Textbook is “Suugaku Nyuumon II”, by Y. Kamimura and K. Tsuboi, Tokyo Kagaku Dojin. In addition, as references some prints are distributed in class.

## Evaluation Method

As a mark given for class participation, eight small tests and ten homeworks are each marked out of 100, which are amounted to 1800. Further, three proficiency tests are marked each out of 600, which are amounted to 1800.

## Evaluation Criteria

Your final record is graded by the average mark of 3600.

## About return of answer, etc.
I will return all examinations. Expect eleven small tests. I will give suggested answers for every examinations.

| Other Information |
**Mathematical Survey**

<table>
<thead>
<tr>
<th>Department</th>
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</thead>
<tbody>
<tr>
<td>Department of Food Science and Technology</td>
<td>Basic Foundation Subjects</td>
<td>1/Elective/2</td>
<td>Second Semester Thursday 14:40–16:10 Lec. Bldg. Rm. 34</td>
<td></td>
</tr>
</tbody>
</table>

**Chief Instructor**

HIRATA Daisuke

**Instructors**

Daisuke Hirata

**Theme & Objectives (Target, Contents, Method)**

This class is an introductory course to the linear algebra, which is necessary for the analysis of functions of several variables in natural sciences. The aim of this lecture is the understanding and the mastery of the fundamental method of the calculation of matrices.

Students may learn how to view, how to study, how to consider, how to discuss, and how to express a subject, based upon logical thinking.

**Academic Goal**

The final goal of this lecture is to acquire the foundation of the linear algebra. (C)

**Description & Program**

1. Definition of matrices
2. Calculation of matrices
3. Elementary transformation and elementary matrices
4. Regular matrices and their inverse matrices
5. Properties of regular matrices
6. Elementary transformation and rank of matrices
7. Elementary transformation and inverse of matrices
8. Properties of rank of matrices
9. Matrices and linear equation I
10. Matrices and linear equation II
11. Homogeneous equations
12. Determinant of matrices
13. Elementary transformation and determinant of matrices
14. Determinant and regularity of matrices
15. Cofactor and inverse matrices

**Preparation & Review**

You should prepare for the next lecture in the textbook if possible. Solve the exercises in the lecture by yourself. If you have some question in the lecture, don’t hesitate to ask it.

**Evaluation Method**

Your final record is graded by the two examinations. The first examination is on the calculus of the (partial) differentiation, and the second (final) examination is on the multiple integrals and the calculus of the differentiation.

**Evaluation Criteria**

Your final record is over 60% only if you reach the goal described above.

**About return of answer, etc.**

Each of reporting assignments or examination papers is returned and elucidated in a class.

**Other Information**
First year students of the department of Food Science and Technology must take this course. This only applies to the first year students.
**Introduction to Information Processing I**

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**Instructors**

**Theme & Objectives (Target, Contents, Method)**

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**Academic Goal**

**Description & Program**

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**Other Information**

About return of answer, etc.
**Introduction to Information Processing I**

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### Learning and Educational Objectives

### Academic Goal

### Description & Program

### Preparation & Review

### Textbooks/References/URL

### Evaluation Method

### Evaluation Criteria

### About return of answer, etc.

### Other Information
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## Instructors

OHWAKI, Atsushi

## Theme & Objectives (Target, Contents, Method)

- Introduction to the Fortran programming language.

## Learning and Educational Objectives

C

## Academic Goal

The aim of this class is to understand how we use information technology in Marine Science. (C)

## Description & Program

1. Introduction (1 week).
2. Basic Fortran programming (4 weeks).
3. Advanced Fortran programming (10 weeks)

Preparation & Review

Use web-based materials.

## Textbooks/References/URL

There is no text to purchase for this course. Instead we will use web-based materials and reprints.

## Evaluation Method

- Two or three reports (60%).
- Attendance (40%).

## Evaluation Criteria

Ask instructor.

## About return of answer, etc.

Ask instructor.

## Other Information
Introduction to Information Processing I

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</table>

Chief Instructor: Yoshida Jiro, Mizobata Kouhei

Room: #9 Building, Rm605
Contact: mizobata@kaiyodai.ac.jp
Office Hours: Mon–Fri 12:00–13:00

Instructors

Jiro Yoshida, Kohei Mizobata

Theme & Objectives (Target, Contents, Method)  
Learning and Educational Objectives

The primary objective is to learn the basic of the Fortran. Lecture on the capability of Fortran will be given first. In this class, each student will learn how to deal with digital data and how to apply the fundamental statistical analysis to scientific dataset, and will obtain logical thinking ability through Fortran programming. As an exercise of Fortran programming, each student will analyze sample of the Earth Science dataset (e.g., ocean observation dataset). Through the extraction of the arbitrary information from dataset and the fundamental analysis using Fortran, each student will achieve the fundamental skills for coming report generation and graduation thesis.

Academic Goal

1. To know how to deal with the computer (C)
2. To understand logical structure of programming and to build own scripts using Fortran without any help from anyone (C, G)
3. To be able to manage the digital data and conduct the fundamental analysis (C, G)

Description & Program

1. Brief overview of the computer and Fortran, basic arithmetic operations and compilation
2. DO loop and IF statements
3. Sorting
4. Finding Maximum/minimum value
5. Extracting Mean, variance and standard deviation
6. Dealing with binary dataset
7–12. Application to earth science dataset
13. Newton method
14. Integration
15. Drill
※Contents will be changed based on progress status

Preparation & Review

Preparation: Upcoming contents will be introduced each time. Students must prepare for upcoming contents. Information students need is on the web (http://www2.kaiyodai.ac.jp/~mizobata/)
Review: Carrying out a review after the lecture is needed.

Textbooks/References/URL

A resume will be distributed each time.
A resume will also be found on the web (http://www2.kaiyodai.ac.jp/~mizobata/).

Evaluation Method

<table>
<thead>
<tr>
<th>Evaluation Method</th>
<th>Evaluation Criteria</th>
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<tr>
<td>Attendance (60%), Report (40%)</td>
<td>1. understanding level of fortran programming</td>
</tr>
<tr>
<td></td>
<td>2. degree of perfection of fortran programming</td>
</tr>
</tbody>
</table>
### About return of answer, etc.

Written assignments and tests will be returned to students and comments will be provided during class.

### Other Information

Course record of “Information Literacy” is needed.
# Introduction to Information Processing I

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<tbody>
<tr>
<td>YOSHIDA Jiro</td>
<td>Bldg. 9 Rm. 506</td>
<td><a href="mailto:jiroy@kaiyodai.ac.jp">jiroy@kaiyodai.ac.jp</a></td>
<td>Bldg. 9 Rm. 506 12:00-13:00 <a href="mailto:jiroy@kaiyodai.ac.jp">jiroy@kaiyodai.ac.jp</a></td>
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</table>

## Instructors

Jiro YOSHIDA, Takeyoshi NAGAI

## Theme & Objectives (Target, Contents, Method)

The aim of this class is to master BASIC as a programming language in order to learn the information processing capability. Beginners are targeted and the class starts from “What is a programming language”. And it introduces “What is BASIC like”, “What can be done by BASIC” and so on. In addition, logical consideration abilities are also trained through making algorithms.

## Learning and Educational Objectives

C: Basic in science  
G: Practical exercise  
J: Problem-solving ability

## Academic Goal

To be able to write fundamental programs for what are required in near future one’s own information processing tasks.

## Description & Program

The practice and repetition are very important to learn the programming language. Regular attendance is indispensable. Practical programs and problems are given as follows:

1. Basic structures of programming
2. Expressions of integer number, real number and symbols
3. Expressions of mathematical and logical operation
4. Commands of input, output, branching and repeating operation
5. Function subprograms and subroutines
6. Practical exercises
7. Exam  
(This program may be changed depending on the progress of the class.)

## Preparation & Review

To study teaching materials provide at home

## Textbooks/References/URL

To be announced at the first lecture

## Evaluation Method

Reports (100%)  
(This program may be changed depending on the progress of the class)

## Evaluation Criteria

To clear the achievement goal of this class is the condition for pass (60%).

## Other Information

Neither BASIC class nor FORTRAN class can be taken together.
Introduction to Information Processing I

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<td>Bldg. 9 Rm. 506 12:00-13:00 <a href="mailto:jiroy@kaiyodai.ac.jp">jiroy@kaiyodai.ac.jp</a></td>
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Instructors

Jiro YOSHIDA, Takeyoshi NAGAI

Theme & Objectives (Target, Contents, Method)  

The aim of this class is to master BASIC as a programming language in order to learn the information processing capability. Beginners are targeted and the class starts from “What is a programming language”. And it introduces “What is BASIC like”, “What can be done by BASIC” and so on. In addition, logical consideration abilities are also trained through making algorithms.

Academic Goal

To be able to write fundamental programs for what are required in near future one’s own information processing tasks.

Description & Program  

The practice and repetition are very important to learn the programming language. Regular attendance is indispensable. Practical programs and problems are given as follows:

1. Basic structures of programming
2. Expressions of integer number, real number and symbols
3. Expressions of mathematical and logical operation
4. Commands of input, output, branching and repeating operation
5. Function subprograms and subroutines
6. Practical exercises
7. Exam

(These programs may be changed depending on the progress of the class.)

Preparation & Review  

To study teaching materials provided at home

Textbooks/References/URL

To be announced at the first lecture

Evaluation Method

Reports (100%)  
(This program may be changed depending on the progress of the class)

Evaluation Criteria

To clear the achievement goal of this class is the condition for pass (60%).

About return of answer, etc.

Written assignments and tests will be returned to students and comments will be provided during class.

Other Information

Neither BASIC class nor FORTRAN class can be taken together.
# Introduction to Information Processing II

<table>
<thead>
<tr>
<th>Department</th>
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<th>Year/Required or Elective/Credit</th>
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## Instructors

**OHWAKI, Atsushi**

### Theme & Objectives (Target, Contents, Method)
- Introduction to the UNIX operating system.
- Introduction to the C programming language.

### Learning and Educational Objectives
- C

### Academic Goal
The aim of this class is to understand how we use information technology in Marine Science. (C)

### Description & Program

<table>
<thead>
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<tbody>
<tr>
<td>Use web-based materials.</td>
</tr>
</tbody>
</table>

1. Introduction (1 week).
2. Basic UNIX operations (5 weeks).
3. Shell and tools (4 weeks)
4. C programming (5 weeks)

### Textbooks/References/URL
There is no text to purchase for this course. Instead we will use web-based materials and reprints.

### Evaluation Method

<table>
<thead>
<tr>
<th>Evaluation Criteria</th>
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</thead>
<tbody>
<tr>
<td>Ask instructor.</td>
</tr>
</tbody>
</table>

- Two or three reports (60%).
- Attendance (40%).

### About return of answer, etc.
Ask instructor.

### Other Information
# Introduction to Information Processing II

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## Instructors

OHWAKI, Atsushi

---

### Theme & Objectives (Target, Contents, Method)

- Introduction to the UNIX operating system.
- Introduction to the C programming language.

---

### Academic Goal

The aim of this class is to understand how we use information technology in Marine Science. (C)

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### Description & Program

1. Introduction (1 week).
2. Basic UNIX operations (5 weeks).
3. Shell and tools (4 weeks)
4. C programming (5 weeks)

Use web-based materials.

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### Textbooks/References/URL

There is no text to purchase for this course. Instead we will use web-based materials and reprints.

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### Evaluation Method

- Two or three reports (60%).
- Attendance (40%).

Ask instructor.

### Evaluation Criteria

Ask instructor.

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**About return of answer, etc.**

Ask instructor.

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### Other Information
### Introduction to Information Processing II

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### Instructors

OHWAKI, Atsushi

### Theme & Objectives (Target, Contents, Method)

- Introduction to the UNIX operating system.
- Introduction to the C programming language.

### Learning and Educational Objectives

C

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### Description & Program

1. Introduction (1 week).
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Use web-based materials.

### Textbooks/References/URL

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### Evaluation Method

- Two or three reports (60%).
- Attendance (40%).
- Ask instructor.

### Evaluation Criteria

Ask instructor.

### Other Information

About return of answer, etc.
## Introduction to Information Processing II

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### Instructors

OHWAKI, Atsushi

### Theme & Objectives (Target, Contents, Method)

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### Academic Goal

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4. C programming (5 weeks)

Use web-based materials.

### Textbooks/References/URL

There is no text to purchase for this course. Instead we will use web-based materials and reprints.

### Evaluation Method

- Two or three reports (60%).
- Attendance (40%).

### Evaluation Criteria

Ask instructor.

### Other Information

Ask instructor.
# Statistics

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<td>2/Elective/2</td>
<td>First Semester Wednesday 13:00-14:30 Lec.Bldg. Rm.34</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chief Instructor</th>
<th>Room</th>
<th>Contact</th>
<th>Office Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>KITAKADO Toshihide</td>
<td>Building #8: room 711</td>
<td>kitakado[at]kaiyodai.ac.jp</td>
<td>Friday 10:00-12:00</td>
</tr>
</tbody>
</table>

## Instructors

KITAKADO, Toshihide

### Theme & Objectives (Target, Contents, Method)

Students will learn elementary statistics on the basis of lecture and practice.

### Learning and Educational Objectives

C, J

### Academic Goal

Students will learn about random variables, probability distributions, estimation and hypothesis testing.

### Description & Program

1. Introduction of data science and a software R
2. Probability distributions and random variables
3. Conditional probability
4. Sampling
5. Statistical estimation
6. Binomial distribution and its applications
7. Poisson distribution and its applications
8. Normal distribution and its applications (I)
9. Normal distribution and its applications (II)
10. Interval estimation
11. Hypothesis testing: theory
12. Hypothesis testing: practice
13. Testing ratio
14. Statistics in scientific papers (I) a fictitious paper for dolphin surveys
15. Statistics in scientific papers (II) a fictitious paper for assessment of environmental impacts

### Preparation & Review

Students are recommended to do preparation of class beforehand according to the lecture schedule. Students are also recommended to go over and review the course contents after the class and work on their homework assignments.

### Textbooks/References/URL

---

### Evaluation Method

Grading is based on assignments and the final examination.

### Evaluation Criteria

Grading is based on assignments (30%) and the final examination (70%).

### About return of answer, etc.

At the end of the final exam, comments will be provided. Students may receive an explanation of the exam result at the designated time in the teacher’s room.

### Other Information

Full detail will be given at the guidance.
# Statistics

<table>
<thead>
<tr>
<th>Department</th>
<th>Category</th>
<th>Year/Required or Elective/Credit</th>
<th>Day/Hours/Place</th>
<th>Availability for the Lower-class Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Science and Technology/Marine Policy and Culture</td>
<td>Basic Foundation Subjects</td>
<td>2/Elective/2</td>
<td>First Semester Tuesday 13:00-14:30 Lec. Bldg. Rm. 32</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chief Instructor</th>
<th>Room</th>
<th>Contact</th>
<th>Office Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>TANAKA Eiji</td>
<td>Bld. 8 Rm. 703</td>
<td><a href="mailto:hermit@kaiyodai.ac.jp">hermit@kaiyodai.ac.jp</a>, 03-5463-0567</td>
<td>15:00-17:00 on Wednesday</td>
</tr>
</tbody>
</table>

## Instructors

**TANAKA, Eiji**

## Theme & Objectives (Target, Contents, Method)

Statistics, as a science for data analysis, is applied to both natural science and social science. In our class we aim for understanding basic concepts of statistical methods. The notion of probability is also introduced at an elementary level. Various probability distributions are introduced in this class to make probability models for concrete phenomena.

## Academic Goal

Objective of achievement is to obtain ability to apply fundamental statistical theory to actual data using binomial, normal distribution or its related distributions. (c)

## Description & Program

- Description of data, probability and probability distribution, statistical estimation are main items to be studied in our class. The lecture is arranged in the following order.
  1. Summaries of one-dimensional data,
  2. Summaries of two-dimensional data,
  3. Probability,
  4. Random variable and its distribution,
  5. Two-dimensional random variable,
  6. Discrete probability distribution,
  7. Multinomial distribution, normal distribution (a),
  8. Normal distribution (b), lognormal distribution,
  9. Gamma distribution, exponential distribution, Weibull distribution,
  10. K−square distribution, t−distribution, F−distribution,
  11. Basic idea of statistical estimation,
  12. Maximum likelihood estimation,
  13. Interval estimation (a),
  14. Interval estimation (b),
  15. Statistical test.

## Preparations & Review

- Preparation
  - Students shall read texts and find description to not be understandable.
- Review
  - Students shall review the contents and exercise, in particular principle of inference and meaning of parameters because statistical sciences are applied to

### Textbooks/References/URL

- 「Introduction to biostatistics (in Japanese)」  (Yamada・Kitada, Seizan-dou)

## Evaluation Method

Your record is graded by final examination.

## Evaluation Criteria

Record is graded based on outcome of exams with numerical calculations to measure extent of understandings on probability distributions, point estimate, interval estimates, and hypothetical tests. Passing score from the exam is 60 points.

## About return of answer, etc.

After the final exam, students may receive the explanations of the exam at the designated time in the teacher room.
<table>
<thead>
<tr>
<th><strong>Other Information</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientific pocket computer is needed for frequent exercises.</td>
</tr>
</tbody>
</table>
**Statistics**

<table>
<thead>
<tr>
<th>Department</th>
<th>Category</th>
<th>Year/Required or Elective/Credit</th>
<th>Day/Hours/Place</th>
<th>Availability for the Lower-class Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department of Ocean Sciences</td>
<td>Basic Foundation Subjects</td>
<td>2/Elective/2</td>
<td>First Semester Wednesday 16:20-17:50 Bldg. 9 Rm. 208</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chief Instructor</th>
<th>Room</th>
<th>Contact</th>
<th>Office Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>KITAKADO, Toshihide</td>
<td>Building #8: room 711</td>
<td>kitakado[at]kaiyodai.ac.jp</td>
<td>Friday 10:00-12:00</td>
</tr>
</tbody>
</table>

**Instructors**

KITAKADO, Toshihide

**Theme & Objectives (Target, Contents, Method)**

Students will learn elementary statistics on the basis of lecture and practice.

**Learning and Educational Objectives**

C, J

**Academic Goal**

Students will learn about random variables, probability distributions, estimation and hypothesis testing.

**Description & Program**

1. Introduction of data science and a software R
2. Probability distributions and random variables
3. Conditional probability
4. Sampling
5. Statistical estimation
6. Binomial distribution and its applications
7. Poisson distribution and its applications
8. Normal distribution and its applications (I)
9. Normal distribution and its applications (II)
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12. Hypothesis testing: practice
13. Testing ratio
14. Statistics in scientific papers (I) a fictitious paper for dolphin surveys
15. Statistics in scientific papers (II) a fictitious paper for assessment of environmental impacts

**Preparation & Review**

Students are recommended to do preparation of class beforehand according to the lecture schedule. Students are also recommended to go over and review the course contents after the class and work on their homework assignments.

**Textbooks/References/URL**

**Evaluation Method**

Grading is based on assignments and the final examination.

**Evaluation Criteria**

Grading is based on assignments (30%) and the final examination (70%).

**About return of answer, etc.**

At the end of the final exam, comments will be provided. Students may receive an explanation of the exam result at the designated time in the teacher's room.

**Other Information**

Full detail will be given at the guidance.
**Statistics for Ocean Sciences**

<table>
<thead>
<tr>
<th>Department</th>
<th>Category</th>
<th>Year/Required or Elective/Credit</th>
<th>Day/Hours/Place</th>
<th>Availability for the Lower-class Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department of Marine Biosciences</td>
<td>Basic Foundation Subjects</td>
<td>2/Elective/2</td>
<td>Second Semester Tuesday 8:50-10:20 Bldg. 1 Rm. 13</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

**Chief Instructor**

<table>
<thead>
<tr>
<th>TOKAI Tadashi</th>
</tr>
</thead>
<tbody>
<tr>
<td>My office: Bld. 1, Rm. 214</td>
</tr>
<tr>
<td>Phone: 03-5463-0474</td>
</tr>
<tr>
<td>e-mail: <a href="mailto:tokai@kaiyodai.ac.jp">tokai@kaiyodai.ac.jp</a></td>
</tr>
<tr>
<td>Office hour: From 17:00 to 20:00 on Monday, and from 17:00 to 20:00 on Friday; Please make an appointment.</td>
</tr>
</tbody>
</table>

**Instructors**

TOKAI, Tadashi

**Theme & Objectives (Target, Contents, Method)**

The aim of this lecture is to learn basic statistical methods. We will learn these methods through actual examples.

**Academic Goal**

The target is that the students understand basic idea of statistical test and estimation, and they also learn the basic methods through practice exercises.

**Description & Program**

We will learn basic statistical test, analysis of variance and linear regression analysis. Exercise will be given in the lecture for better understanding of the methods.

1. Introduction to statistical test and Nonparametric test (Mann-Whitney U-test, Wilcoxon’s signed-ranks test)
2. t-test and F-test
3. Analysis of Variance (ANOVA test) one-way and two way. Correlation analysis and Regression analysis (simple regression analysis and multiple regression analysis)

**Preparation & Review**

[Preparation]
- Students are required to learn beforehand about the next subject on the lesson schedule provided at the first lesson.

[Review]
- Students must do self-study completing the report with the teaching material distributed for each subject.

**Evaluation Method**

The final record will be graded by the short reports of each subject.

**Evaluation Criteria**

Credits will be given to those who achieved over 60% of the student achievement objective by the reports.

**Textbooks/References/URL**

Teaching materials are distributed for each subject. The book "Bio-resources Statistics" by S. Yamada and S. Kitada, Seizandou, Tokyo, 2004 and some other related books are introduced.

**About return of answer, etc.**

The report will be returned with briefly explanation at the following class.

**Other Information**

Strictly adhere to the deadline for submitting the report.
# Statistics for Ocean Sciences

<table>
<thead>
<tr>
<th>Department</th>
<th>Category</th>
<th>Year/Required or Elective/Credit</th>
<th>Day/Hours/Place</th>
<th>Availability for the Lower-class Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department of Ocean Sciences</td>
<td>Basic Foundation Subjects</td>
<td>2/Elective/2</td>
<td>Second Semester Wednesday 10:30–12:00 IP Center</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chief Instructor</th>
<th>Room</th>
<th>Contact</th>
<th>Office Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>YAMAZAKI Hidekatsu</td>
<td>Hidekatsu Yamazaki 9th building 601</td>
<td><a href="mailto:hide@kaiyodai.ac.jp">hide@kaiyodai.ac.jp</a></td>
<td>Send e-mail to get an appointment</td>
</tr>
<tr>
<td></td>
<td>Kazumi Sakuramoto 8th building 606</td>
<td>Kazumi Sakuramoto <a href="mailto:sakurak@kaiyodai.ac.jp">sakurak@kaiyodai.ac.jp</a></td>
<td></td>
</tr>
</tbody>
</table>

## Instructors

Hidekatsu Yamazaki  
Kazumi Sakuramoto

## Theme & Objectives (Target, Contents, Method)

In order to analyze oceanography data statistically, we learn the basic knowledge of statistical methods. First, we learn the basic idea of population and samples, and statistical estimation and hypothetical testing are introduced. Then, we study regression analyses and variance analyses.

### Academic Goal

Acquire the basic knowledge of statistical method to analyze the data. (C)

### Description & Program

In order to acquire statistical methods, it is desirable to process real data using many examples. We use free statistical package R to process real data, thus the lecture will be given at the university computer center. The lecture covers the following subject:

1. What is R?
2. The basic idea of statistics and probability distribution
3. Regression analyses
4. Analysis of variance
5. Statistical estimation and hypothesis testing

### Preparation & Review

(preparation) read the assigned section for the next class. (review) solve those problems covered in the class. Review two quizzes.

## Textbooks/References/URL

The text will be introduced at the first class.

### Evaluation Method

2 quizzes (20%), homework (30%) and final exam (50%)

The evaluation is based on the ability to exam the statistics of data. The total score has to exceed 60% in order to pass the course.

### About return of answer, etc.

Two quizzes are returned and explained in class. The final exam will be returned and explained if student requests.

### Other Information

Prerequisite: Statistics I
Statistics for Ocean Sciences

Department: Food Science and Technology/Marine Policy and Culture
Category: Basic Foundation Subjects
Year/Required or Elective/Credit: 2/Elective/2
Day/Hours/Place: Second Semester Wednesday 13:00-14:30 Lec. Bldg. Rm. 22
Availability for the Lower-class Students: No

Chief Instructor: IWATA Shigehide
Room: 8th Building Room709
Contact: E-mail: siwata0[at]kaiyodai.ac.jp
TEL/FAX: 03-5463-0469
Office Hours: 13:00-17:00. Tuesday

Instructors
Shigehide Iwata

Theme & Objectives (Target, Contents, Method)
This course provides an opportunity to learn the method to analyze with objective way, which is statistics. The aim of this course is to learn the statistical knowledge for data analysis and to apply this to data set appropriately. This course provides the opportunity to learn about statistical methods (statistical test, analysis of regression and analysis of variance). The text for the class would be distributed if necessary. Written assignments will be implemented in several times during classes.

Academic Goal
1. To understand the essence of statistical test, analysis of variance, analysis of regression (C, I, J).
2. To be able to explain the essence of statistical test, analysis of variance, analysis of regression (C, I, J).

Description & Program

<table>
<thead>
<tr>
<th>1. Introduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 - 6. Analysis of variance</td>
</tr>
<tr>
<td>• What is analysis of variance (ANOVA)?</td>
</tr>
<tr>
<td>• One-way analysis of variance</td>
</tr>
<tr>
<td>• Two-way analysis of variance</td>
</tr>
<tr>
<td>7 - 10. Analysis of regression</td>
</tr>
<tr>
<td>• What is analysis of regression?</td>
</tr>
<tr>
<td>• Single regression analysis</td>
</tr>
<tr>
<td>• Multiple regression analysis</td>
</tr>
<tr>
<td>11 - 15. Statistical test</td>
</tr>
<tr>
<td>• Non-parametric test (Mann-Witney U-test, Wilcoxon’s signed-ranks test)</td>
</tr>
<tr>
<td>• t-test</td>
</tr>
<tr>
<td>• F-test</td>
</tr>
</tbody>
</table>

Preparation & Review
[Preparation] The keyword to the next classes will be presented, so please prepare that keyword by using reference book etc.
[Review] Find yourself the data which will be able to apply the method learned in the class and apply the method learned.

Textbooks/References/URL

Evaluation Method
| Your record is graded by the final Exam (60%) and written assignments (40%). |

Evaluation Criteria
Scores for both of written assignments and final exam 60% over are the level for passing.

About return of answer, etc.
Written assignments will be returned to students and comments will be provided during class.
After the final exam, comments on the exam will be provided at the designated time in the teachers’ room.

<table>
<thead>
<tr>
<th>Other Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students are recommended to take &quot;statistics I&quot;.</td>
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</table>
# Earth Science

<table>
<thead>
<tr>
<th>Department</th>
<th>Category</th>
<th>Year/Required or Elective/Credit</th>
<th>Day/Hours/Place</th>
<th>Availability for the Lower-class Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>All departments in the faculty of Marine Science</td>
<td>Basic Foundation Subjects</td>
<td>2/Elective/2</td>
<td>Intensive Course Spring Semester Others</td>
<td>Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chief Instructor</th>
<th>Room</th>
<th>Contact</th>
<th>Office Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSURUGA, Kayoko</td>
<td>Office: Shinagawa campus, Bld. 8, Room 408</td>
<td>e-mail: <a href="mailto:tsuru@kaiyodai.ac.jp">tsuru@kaiyodai.ac.jp</a></td>
<td>Office: Shinagawa campus, Bld. 8, Room 408 Office hour: 15:00 – 17:00 on Tuesday (Schedules will be not fixed.)</td>
</tr>
</tbody>
</table>

## Instructors

TSURUGA, Kayoko

## Theme & Objectives (Target, Contents, Method)

The purpose of this lecture is to learn the relationship and importance between the earth sciences and our life through the history and the dynamics of the earth.

### Academic Goal

To understand basic phenomenon of earth science and synthetic history of earth.

## Description & Program

<table>
<thead>
<tr>
<th>Major topics of classes are as follows:</th>
<th>Preparation &amp; Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st-3rd class: Overview of the earth</td>
<td>I expect you to prepare beforehand to the reference in the textbook about the contents of the plan of the class.</td>
</tr>
<tr>
<td>4th-7th class: Structure and material of the earth</td>
<td></td>
</tr>
</tbody>
</table>
| 8th-11th class: Dynamics and evolution of the Earth | I expect you to review about the lecture content every time. Moreover I hope you to read the references and paper.
| 12th-15th class: History of the earth and relationships of human being | |
| Final test will be done after all classes. | |

## Evaluation Method

<table>
<thead>
<tr>
<th>Evaluation Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Results of both reports at each class and the final examination are totally evaluated. In case the above-described aims of the course were accomplished, the final evaluating score between 60% and 100% will be awarded.</td>
</tr>
</tbody>
</table>

## About return of answer, etc.

After the final exam, sample answers will be placed on the web-based learning support system. Answer sheets will be returned to students and comments will be given at the designated time in the teachers’ room.

## Other Information

Any questions are welcomed. Sufficient attendance for this lecture, taking the examination, submission of the reports are required to get the credit of this subject.

Schedules:
- Room: Hakuyo-Hall
- Schedules: 4 days in a period from June to Aug

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*Book: Kiso-Chikyukagaku (ed. Y. Nishimura)*
Experimental Geology

<table>
<thead>
<tr>
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<th>Day/Hours/Place</th>
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</tr>
</thead>
<tbody>
<tr>
<td>All departments in the faculty of Marine Science</td>
<td>Basic Foundation Subjects</td>
<td>4/Elective/1</td>
<td>Intensive Course Spring Semester Others</td>
<td>YES</td>
</tr>
</tbody>
</table>

Chief Instructor: TSURUGA Kayoko

Office: Shinagawa campus, Bld. 8, Room 408
e-mail: tsuru@kaiyodai.ac.jp

Office: Shinagawa campus, Bld. 8, Room 408
Office hour: 15:00 - 17:00 on Wednesday

Theme & Objectives (Target, Contents, Method)

The purposes of this experiment are to understand characteristics of the Japan Islands having numerous volcanoes and earthquakes through some analogue experimentation and geological observations tour to the earth museum.

Learning and Educational Objectives

C: basic science, F: experiment

Academic Goal

1. To understand basic of earth science. (C)
2. To understand natural phenomenon of earth science through analogue experiments and observation. (F)

Description & Program

To achieve the objectives described above,
1) geophysical analogue experiments will be done at the university’s laboratory
and
2) we observe many geological material in a geoscience museum tour.

Major topics of class are as follows:

1. Studies of topographic information and basics of geological map and rock-science (4 classes)
2. Redeposition experiment of sedimentary layers (3 classes)
3. Studies of rock geology through an experiments of natural igneous, sedimentary and metamorphic rocks at a geoscience museum (one-day tour as 4 classes)
4. Analogue experiments of nature of seismogenic fault, Tsunami, and liquefaction by an earthquake (4 classes)

Preparation & Review

<Preparation>
All students should attend the guidance before the class to understand about the purpose and the contents of the experiments for earth science.

<Review>
I expect you to review and summarize the experiments and results.
All the students

Textbooks/References/URL

Teaching material is supplied as the need arises.

Evaluation Method

<table>
<thead>
<tr>
<th>Evaluation protocol</th>
<th>Evaluation Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attendance, discussions and result of experiment of each class (30%), and the reports (70%).</td>
<td>In case the above-described aims of the course were accomplished, the final evaluating score between 60% and 100% will be awarded.</td>
</tr>
</tbody>
</table>

About return of answer, etc.

Written assignments and tests will be returned to students and comments will be provided during class.

Other Information

Any fees for traveling, and material are needed.
Students will be given a full detail of this experiment at the guidance.