TOKAI

For Exchange Students and
UMAP Students

Tokai University

2019, 2020
Bachelor's classes taught in English
(For UMAP and Exchange Students)

TOKAI UNIVERSITY

Courses taught in English

Course of Global Japanese Studies [2020 Spring]

(Undergraduate course)

Day	Period	Grade No.	Course No.	Credit	Subject	Professor
Mon	3	V200	CH7061	2	ADVANCED SUSTAINABLE ENGINEERING	Yukari Aoki
Tue	2	V100	CH7029	2	JAPANESE SOCIETY A	Yuki Takatori
Tue	4	V200	CH7070	2	JAPANESE STUDIES' SPECIALITIES PROJECT B	Abdulla Almomen
Thu	2	V100	CH7045	2	SUSTANIABLE ENGINEERING and GLOBAL SOCIETY A	Yukari Aoki
Thu	3	V100	CH7053	2	GLOBAL AREA STUDIES A	Yuki Takatori
Thu	4	V100	CH7011	2	INTERNATIONAL RELATIONS	Yuki Takatori
Fri	2	V100	CH7002	2	GLOBAL CULTURE AND COMMUNICATION	Yuki Takatori
Fri	3	V100	CH7037	2	JAPANESE SUSTAINABLE TECHNOLOGY A	Yukari Aoki

Courses taught in English

Course of Global Japanese Studies [2019 Fall]

(Undergraduate course)

Day	Period	Grade No.	Course No.	Credit	Subject	Professor
Mon	2	V100	CU7003	2	JAPANESE CULTURE STUDIES	Yuki Takatori
Mon	4	V100	CU7011	2	GLOBAL HUMAN SECURITY	Yaroslava Gladysheva
Tue	2	V200	CU7046	2	SUSTANIABLE ENGINEERING and GLOBAL SOCIETY B	Yukari Aoki
Tue	3	V100	CU7020	2	JAPANESE SOCIETY B	Yuki Takatori
Tue	4	V200	CU7071	2	JAPANESE STUDIES' SPECIALITIES PROJECT B	Abdulla Almomen
Thu	2	V200	CU7054	2	GLOBAL AREA STUDIES B	Yuki Takatori
Thu	3	V200	CU7062	2	GLOBAL CIVIL RIGHTS AND CITIZENSHIP	Yuki Takatori
Fri	2	V100	CU7038	2	JAPANESE SUSTAINABLE TECHNOLOGY B	Yukari Aoki
Field work		V300	CU7089	2	FIELD WORK GLOBAL COMMUNICATION A*	Yukari Aoki
Internship		V301	CU7097	2	INTERNSHIP INTERNATIONAL RELATION A*	Abdulla Almomen

*Field work and Internship are not available for UMAP students.

Courses taught in English

Department of International Studies

(Undergraduate course)

[2020 Spring]

Day	Period	Grade No.	Course No.	Credit	Subject	Professor
Mon	2	IV260	EG0010	2	Japan-US Relations	Ryuta Wada
Mon	4	IV250	EG0079	2	Intercultural Communications A	Margalit Faden
Thu	4	IV250	EG0427	2	Intercultural Communications B	Margalit Faden

[2019 Fall]

(Undergraduate course)

Day	Period	Grade No.	Course No.	Credit	Subject	Professor
Mon	3	IV250	EP0230	2	International Development A	Keiichi Tanabe
Mon	4	IV250	EP0256	2	International Development B	
Mon	3	IV240	EP0019	2	Issues in International Security A	Ryuta Wada
Mon	4	IV240	EP0205	2	Issues in International Security B	
Tue	4	IV250	EO0086	2	Global Issues A	Daisuke Onuki
Thu	4	IV250	EP0264	2	American Studies	Margalit Faden
Fri	4	IV250	EP0329	2	Global Issues B	Daisuke Onuki

Courses taught in English

School of Engineerring

(Undergraduate Course)

[2020 Fall Semester]

Day and period	Grade No.	Course No.	Credit	Subject	Professor
TBD	IV100	Ask Your Teacher	2	Basic Chemistry	Sergei Kulinich
TBD	IV100	Ask Your Teacher	2	Calculus for Engineers 1	Yukari Aoki
TBD	IV100	Ask Your Teacher	2	Calculus for Engineers 2	Yukari Aoki
TBD	IV100	Ask Your Teacher	2	Linear algebra for Engineers 1	Yukari Aoki
TBD	IV100	Ask Your Teacher	2	Linear algebra for Engineers 2	Yukari Aoki
TBD	IV220	Ask Your Teacher	2	Foundations of Robotics	Yoshio Yamamoto
TBD	IV220	Ask Your Teacher	2	Machine Design 1	Yoshio Yamamoto
TBD	IV300	Ask Your Teacher	2	Electric Vehicle Engineering	Toshiyuki Sakamoto
TBD	IV300	Ask Your Teacher	2	High-Speed Aerodynamics	Toshiharu Mizukaki, Daiki Numata, Hideyuki Horisawa
TBD	IV320	Ask Your Teacher	2	Engine Engineering	Zhili Chen
TBD	IV370	Ask Your Teacher	2	Numerical Simulation in Engineering	Shun Takahashi

*TBD: To be decided

TOKAI UNIVERSITY

2020

Course of Global Japanese Studies (Undergraduate course)

Subjects taught in English

*Class schedule is subject to change

Spring Semester

Global Japanese Studies					
Day	**Period**	**Course Title (Japanese)**	**Course Title (English)**	**Professor**	**Credit**
Mon	3	ADVANCED SUSTAINABLE ENGINEERING	ADVANCED SUSTAINABLE ENGINEERING	Yukari Aoki	2

【Summary】
Earth environmental problem including global warming is one of the most serious issues that human beings are facing in the 21st century. To become an international citizen, it is quite important to know about the earth environment problems and have the ability of discussing on the issue with people from overseas. In this lecture, various earth environment problems are introduced in plain English using many satellite images. The technology of observing the earth from space is called remote sensing. The themes of the lectures are listed below. Through the lectures, the students will be requested to do researches on particular theme of interest and report during the class. The earth environment problem will be discussed by all the students from international point of view. The lectures are based on science and technology. However, the lectures will be prepared understandable even to the students from social science background.

【Skills】
- Ability to think independently: Developing the ability to think about global environmental issues.
- Ability to achievement: To develop the ability to achieve by investigating and announcing environmental issues which you are interested in.
- Global perspective: Develop a global perspective while viewing satellite images that capture various environmental changes in the world.

【Achievements】
1. Ability to understand the essence of the problem.
    - Can understand each specific problem accurately.
    - Understand the relationship between the two issues.
    - Point out the essential parts of the three problems.
2. Ability to investigate.
    - Clarify the items to be investigated.
    - Understand how to investigate.
    - Be able to actual investigation.
3. Presentation skills
    - Summarize the survey results.
    - Present the survey results.
    - be able to answer questions accurately.

【Schedule】
1. Guidance
2. What is a sustainability??
3. Looking the earth environment from space
4. What is Remote Sensing
5. Recent environmental issues around the world
6. Thinking about global warming
7. Deforestation of Amazon
8. wood and timbers using in Japan
9. Ozone hole and ultraviolet
10. Debris in the Pacific Ocean
11. About micro plastics
12. Preparation for final presentation
13. Prepare and rehearsal for final presentation
14. Final reports from students and discussion

【Preparation & Review】
- Preparation: List the most significant environmental issues.
  Review: Research about the environmental issues which the other student searched.
- Preparation: Study the meaning of 'sustainability'.
  Review: Summarize about the most important sustainable thing.
- Preparation: Study about the satellite images.
  Review: Summarize 3 environmental issues learned from the class.

- Preparation: Research about the remote sensing.
  Review: What was the remote sensing and how to use it.
- Preparation: List the most significant environmental issues today.
  Review: Summarize regarding to the air pollution.
- Preparation: Research the cause of global warming.
  Review: Think about the solution of global warming.
- Preparation: Search about the fact to Amazon deforestation.
  Review: List about the most recent issues happen in Amazon.
- Preparation: The history of timber using in Japan.
  Review: Write about your opinion whether you agree to use timbers or not.
- Preparation: What is the Ozone hole.
  Review: What is the effect of Ozone hole to the humans.
- Preparation: Search about the Debris coming to Japan.
  Review: What is the debris coming from Japan to the other countries.
- Preparation: What is the micro plastics?
  Review: Summarize about the solution of the micro plastics.
- Preparation: Think about the theme for your final presentation.
  Review: Make your final presentation.
- Preparation: Finalize the final presentation and prepare script.
  Review: Practice the final presentation.
- Preparation: Practice the final presentation.

【Cautionary note】

This class is in English. However, your English level is not very important. You should be able to speak or communicate your opinion in English. The final presentation must be in English.

【Evaluation】

We will evaluate your grade comprehensively based on the points of each minute paper or mini-test (5 points x 10 times), attitude toward the class + Q and A in English (10%), and the results of the final presentation (40%). Attendance of each class is confirmed by submitting a minute paper or a mini test. Late arrivals are limited to 10 minutes, and late arrivals longer than 10 minutes are considered as an absent.
In the evaluation, the applicability of each of the items (1) to (3) in each of the learning objectives (1) to (3) is checked and graded according to the following criteria. Confirm the applicability and score according to the following criteria.
S: Achieve three goals each.
A: Achieve two goals each two or more.
B: Achieve two goals each.
C: Achieve one goals.

【Contact information】

Yukari Aoki, International Education Section
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Global Japanese Studies					
Day	**Period**	**Course Title (Japanese)**	**Course Title (English)**	**Professor**	**Credit**
Tue	2	JAPANESE SOCIETY A	JAPANESE SOCIETY A	Yuki Takatori	2

【Summary】
In this course, participants study the relationship between Japan or Japanese people and various regions in the world. Through this study, participants always need to think interesting points and come up with some questions: for example, the relationship of Japan and the world; the structure of Japanese society; a wide-range of views of Japan from the world. Also, by doing discussions and presentations in this course, participants realize various behavioral patterns and mentalities of Japanese people and consider what Japanese identity and social phenomenon are by means of understanding of others. This course includes various aspects: Language and culture, Education system, Factors of human behavior in different societies. Therefore, participants always need to think diverse problems, and needless to say that active attitudes and participation are mandatory in this course.

【Achievements】
- Ability to Challenge: Positive and active attitudes toward each class
- Ability of Gathering: Summarize what you do and what your group discusses
- Presentation Skills: Having flexible and creative thoughts

【Schedule】
1. Guidance
2. Basic Idea for Writing an Academic Paper
3. Practice Writing of an Academic Paper
4. Education System in Japan: Its History
5. Education System in Japan: Its History
6. Effects of Education System in Japan: Practice Presentation
7. Effects of Education System in Japan: Discussion
8. Human behavior and interactions
9. National character and mentality of the East and West ①
10. National character and mentality of the East and West ②
11. Influence of education on human behavior
12. Presentation Preparation Day
13. Final Presentation Day ①
14. Final Presentation Day ②

【Preparation & Review】
Preparation: In order to understand and catch what the instructors are talking about during the classes, participants need to prepare and think about the topics beforehand. For example, participants may need to research for the topics on the Internet, books, and so on at your home. Otherwise, it may be hard for you to grasp what the instructors are talking about. Additionally, participants may need to be accustomed to English by listening radio, watching television, and so on, in order to listen and catch a meaning given by the English language.

Review: Again, in order to understand and grasp the contents of each class, participants need to review each class at your home. Please make sure and make the contents clear, so you are able to prepare for the final presentation and the final term paper.

【Cautionary note】
English will be used as the lecture language, so please keep up with your English ability and study by yourself at your home.

【Evaluation】
Participation: 10%
Paper Works: 10%x2
Presentation: 40%
Term Paper: 30%

【Textbooks】
Some handouts may be given during the lectures.

【Contact information】
Gladysheva Yaroslava: ysgladysheva@gmail.com
Yuki Takatori: yukitakatori@tsc.u-tokai.ac.jp

Global Japanese Studies					
Day	**Period**	**Course Title (Japanese)**	**Course Title (English)**	**Professor**	**Credit**
Tue	4	JAPANESE STUDIES' SPECIALITIES PROJECT A	JAPANESE STUDIES' SPECIALITIES PROJECT A	Almohmen Abdulla, Yuki Takatori, Yaroslava Gladysheva	2

【Summary】
JAPANESE STUDIES' SPECIALITIES PROJECT A is a Project Based Learning by the project team, which is one of the educational programs for fostering the four powers of self-thinking ability, gathering ability, challenging ability and accomplishment ability.
Project based Learning is a teaching method in which students gain knowledge and skills by working for an extended period of time to investigate and respond to an authentic, engaging and complex question, problem, or challenge. In Gold Standard PBL, projects are focused on student learning goals and include Essential Project Design Elements.

【Achievements】
(CT) CRITICAL THINKING SKILLS refer to students being able to analyze complex problems, investigate questions for which there are no clear-cut answers, evaluate different points of view or sources of information, and draw appropriate conclusions based on evidence and reasoning.
(CO) COLLABORATION SKILLS refer to students being able to work together to solve problems or answer questions, to work effectively and respectfully in teams to accomplish a common goal and to assume shared responsibility for completing a task.
(CM) COMMUNICATION SKILLS refer to students being able to organize their thoughts, data and findings and share these effectively through a variety of media, as well as orally and in writing.
(CR) CREATIVITY AND INNOVATION SKILLS refer to students being able to generate and refine solutions to complex problems or tasks based on synthesis, analysis and then combining or presenting what they have learned in new and original ways.
(DS) DIRECTION SKILLS refer to students being able to take responsibility for their learning by identifying topics to pursue and processes for their own learning, and being able to review their own work and respond to feedback.
(G) GLOBAL CONNECTIONS refer to students being able to understand global, geo-political issues including awareness of geography, culture, language, history, and literature from other countries.

【Schedule】
1. Guidance [disseminate “Japan” to the world]
2. Let's discuss about the theme
3. Set target project and its task [disseminate “Japan” to the world]
4. Preparation, Practice, Revise and Fix [Peer feedback and Self-evaluation]
5. Preparation, Practice, Revise and Fix
6. Preparation, Practice, Revise and Fix
7. Preparation, Practice, Revise and Fix
8. Preparation, Practice, Revise and Fix
9. Preparation, Practice, Revise and Fix
10. Preparation, Practice, Revise and Fix
11. Preparation, Practice, Revise and Fix
12. Preparation, Practice, Revise and Fix
13. Project final presentation
14. Project final presentation

【Preparation & Review】
- Students are asked to have discussions in the class. Please study the key points and gather necessary information before the class.
- It is recommended to write a summary in each class. It will lead to your next presentation.

【Evaluation】

Attendance and Participation: 30%
Project task and Presentation: 40%
Term paper: 30%

【Textbooks】

We use various visual materials and printouts in the class.

【Contact information】

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Takatori: yukitakatori@tsc.u-tokai.ac.jp

Global Japanese Studies					
Day	**Period**	**Course Title (Japanese)**	**Course Title (English)**	**Professor**	**Credit**
Thu	2	SUSTAINABLE ENGINEERING AND GLOBAL SOCIETY A	SUSTAINABLE ENGINEERING AND GLOBAL SOCIETY A	Yukari Aoki	2

【Summary】
Do you know or have you ever heard a word of ‘sustainability’? Recently, this word has been used in wide area, including civil engineering. In this lecture, the students will study the sustainability in the general society. And then, the y will study about the sustainable constructions. Finally, the lecture will be focused on sustainable bridges. In this lecture, a few topics related to sustainability will be explained. After that students will discuss about the topic in small group in English. All the students will make a bridge model in a small group and create the presentation regarding to the model you made.

【Skills】
- Ability to think independently: Developing the ability to think about global environmental issues.
- Ability to achievement: To develop the ability to achieve by investigating and announcing environmental issues which you are interested in.
- Global perspective: Develop a global perspective while viewing satellite images that capture various environmental changes in the world.

【Achievements】
1. Ability to understand the essence of the problem
   - Can understand each specific problem accurately.
   - Understand the relationship between the two issues.
   - Point out the essential parts of the three problems.
2. Ability to investigate
   - Clarify the items to be investigated.
   - Understand how to investigate.
   - Be able to actual investigation.
3. Presentation skills
   - Summarize the survey results.
   - Present the survey results.
   - be able to answer questions accurately.

【Schedule】
1. Guidance
2. Think about the environmental issues
3. Importance of SDGs
4. SDGs in different countries
5. Sustainable bridges: Introduction
6. Discuss about the bridges
7. Sustainable bridges: steel, concrete, Timber, Stone and bricks
8. Sustainable bridges: Aesthetics, Serviceability, Safety, Life cycle cost
9. Discuss and design the bridge model
10. Making the bridge model 1
11. Making the bridge model 2
12. Finalizing the bride model
13. Making Final presentation using PPT
14. Model test and final presentation.

【Preparation & Review】
- Preparation: What is 'civil engineering'?
  Review: List up the famous bridges in your country.
- Preparation: What is the most significant environmental issue in your country?
  Review: Think about the technology to solve the environmental issue.
- Preparation: Research about the 'SDGs'
  Review: What is the most important SDGs, and why?
- Preparation: Which rank in SDGs achievement in 2019 of your country?
  Review: Compare with your country and the No.1 country. What is the most significant difference between two countries?

- Preparation: Write a mini article about your favorite bridge.
  Review: Which bride is the most sustainable bridge you learned today?
- Preparation: Research about the latest bridge build in your country.
  Review: What is the most important reason to build a bridge?
- Preparation: Study about the structural materials.
  Review: Which bridge do you like most? why?
- Preparation: What is the meaning of 'life cycle cost'?
  Review: List the points of sustainable bridge.
- Preparation: Think about the bridge model.
  Review: Discuss with your group mates about the model.
- Preparation: Think about how to improve your model.
  Review: Discuss with your group mates about the model.
- Preparation: Make sure that your model is strong enough.
  Review: Discuss with your group mates about the model.
- Preparation: Think about the sustainable points of your bridge.
  Review: Discuss with your group mates about the model.
- Preparation: Prepare the presentation.
  Review: Finalize and practice your presentation.
- Preparation: Practice your presentation with your group mates.

【Cautionary note】

This class is in English. However, your English level is not very important. You should be able to speak or communicate your opinion in English. The final presentation must be in English.

【Evaluation】

We will evaluate your grade comprehensively based on the points of each minute paper or mini-test (5 points x 10 times), attitude toward the class + Q and A in English (10%), and the results of the final presentation (40%). Attendance of each class is confirmed by submitting a minute paper or a mini test. Late arrivals are limited to 10 minutes, and late arrivals longer than 10 minutes are considered as an absent.
In the evaluation, the applicability of each of the items (1) to (3) in each of the learning objectives (1) to (3) is checked and graded according to the following criteria. Confirm the applicability and score according to the following criteria.
S: Achieve three goals each.
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B: Achieve two goals each.
C: Achieve one goals.

【Contact information】

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Global Japanese Studies					
Day	**Period**	**Course Title (Japanese)**	**Course Title (English)**	**Professor**	**Credit**
Thu	3	GLOBAL AREA STUDIES A	GLOBAL AREA STUDIES A	Yuki Takatori	2

【Summary】

In this course, participants are going to study about “different countries” and “different people”. Global Area Studies is about History, Economy, Politics, Culture, Language, People etc. We are going to concentrate on analyses of this spears in Hawaiian and European Context. Through different type of activities such as discussion, paper writing and presentation, participants are going to form a view about whole situation, problems and challenges of different areas.

【Achievements】

- Ability to Challenge: Positive and active attitudes toward each class.
- Ability of Gathering: Summarize what you do and what your group discusses.
- Presentation Skills: Having flexible and creative thoughts.

【Schedule】

1. Guidance
2. Basic Idea for Writing an Academic Paper
3. Practice Writing of an Academic Paper
4. Basic Idea of Hawai‘i: History
5. Basic Idea of Hawai‘i: History
6. Basic Idea of Hawai‘i: Language and Culture
7. Practice Presentation
8. Europe in Global Context
9. Europe in Politics
10. Europe in World Economy
11. Europe in Global Culture
12. Presentation Preparation Day
13. Final Presentation Day ①
14. Final Presentation Day ②

【Preparation & Review】

Preparation: In order to understand and catch what the instructors are talking about during the classes, participants need to prepare and think about the topics beforehand. For example, participants may need to research for the topics on the Internet, books, and so on at your home. Otherwise, it may be hard for you to grasp what the instructors are talking about. Additionally, participants may need to be accustomed to English by listening radio, watching television, and so on, in order to listen and catch a meaning given by the English language.
Review: Again, in order to understand and grasp the contents of each class, participants need to review each class at your home. Please make sure and make the contents clear, so you are able to prepare for the final presentation and the final term paper.

【Cautionary note】

English will be used as the lecture language, so please keep up with your English ability and study by yourself at your home.

【Evaluation】

Participation: 10%
Paper Works: 10%x2
Presentation: 40%
Term Paper: 30%

【Txstbook】

Some handouts may be given during the lectures.

【Contact information】

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Global Japanese Studies					
Day	**Period**	**Course Title (Japanese)**	**Course Title (English)**	**Professor**	**Credit**
Thu	4	INTERNATIONAL RELATIONS	INTERNATIONAL RELATIONS	Yuki Takatori	2

【Summary】
In this course, participants study comparative view of human societies. Especially, we will focus on Japan and Russia. However, the theme will not only focus on these countries, but also some cases in Asia, Pacific, or Europe may also be included. Through this study, participants always need to think interesting points and come up with some questions: for example, the relationship of Japan and the world; the relationship of Russia and the world; a wide-range of views of various countries. Also, by doing discussions and presentations in this course, participants realize various issues in international societies. This course includes various aspects: International Relations, Society, Compare and Contrast in international affairs and issues. Therefore, participants always need to think diverse problems, and needless to say that active attitudes and participation are mandatory in this course.

【Achievements】
- Ability to Challenge: Positive and active attitudes toward each class.
- Ability of Gathering: Summarize what you do and what your group discusses.
- Presentation Skills: Having flexible and creative thoughts.

【Schedule】
1. Guidance
2. Basic Idea for Writing an Academic Paper
3. Practice Writing of an Academic Paper
4. Japan and Its Relationship with Other Countries ①
5. Japan and Its Relationship with Other Countries ②
6. Japan and Its Relationship with Other Countries ③
7. Japan and Its Relationship with Other Countries: Presentation Practice
8. Russian Foreign Policy
9. World View on Russia
10. Russia in Global Affairs
11. Economic Constraints on Russian Foreign Policy
12. Presentation Preparation Day
13. Final Presentation Day ①
14. Final Presentation Day ②

【Preparation & Review】
- Preparation: What is 'civil engineering'?
  Review: List up the famous bridges in your country.
- Preparation: What is the most significant environmental issue in your country?
  Review: Think about the technology to solve the environmental issue.
- Preparation: Research about the 'SDGs'.
  Review: What is the most important SDGs, and why?
- Preparation: Which rank in SDGs achievement in 2019 of your country?
  Review: Compare with your country and the No.1 country. What is the most significant difference between two countries?
- Preparation: Write a mini article about your favorite bridge.
  Review: Which bride is the most sustainable bridge you learned today?
- Preparation: Research about the latest bridge build in your country.
  Review: What is the most important reason to build a bridge?
- Preparation: Study about the structural materials.
  Review: Which bridge do you like most? why?
- Preparation: What is the meaning of 'life cycle cost'?
  Review: List the points of sustainable bridge.
- Preparation: Think about the bridge model.
  Review: Discuss with your group mates about the model.
- Preparation: Think about how to improve your model.
  Review: Discuss with your group mates about the model.

- Preparation: Make sure that your model is strong enough.
  Review: Discuss with your group mates about the model.
- Preparation: Think about the sustainable points of your bridge.
  Review: Discuss with your group mates about the model.
- Preparation: Prepare the presentation.
  Review: Finalize and practice your presentation.
- Preparation: Practice your presentation with your group mates.

【Cautionary note】

This class is in English. However, your English level is not very important. You should be able to speak or communicate your opinion in English. The final presentation must be in English.

【Evaluation】

Participation: 10%
Paper Works: 10%x2
Presentation: 40%
Term Paper: 30%

【Contact information】

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Yuki Takatori: yukitakatori@tsc.u-tokai.ac.jp

Global Japanese Studies					
Day	**Period**	**Course Title (Japanese)**	**Course Title (English)**	**Professor**	**Credit**
Fri	2	GLOBAL CULTURE AND COMMUNICATION	GLOBAL CULTURE AND COMMUNICATION	Yuki Takatori	2

【Summary】
“Globalization” is the one of the popular words to describe different processes in the Modern World. Recently, diversification of globalization is growing more and more. Culture and Communications are not the exception. In this course, we are going to study different aspects of worldwide Culture in the terms of Globalization proses and its connection and (or) influence on Communication. Through theoretical and practical types of activities, participants are going to learn how to analyze the changing situation of Culture Globalization and Globalization of the structure of the Communication, and its dependency.

【Achievements】
- Ability to Challenge: Positive and active attitudes toward each class.
- Ability of Gathering: Summarize what you do and what your group discusses.
- Presentation Skills: Having flexible and creative thoughts.

【Schedule】
1. Guidance
2. Basic Idea for Writing an Academic Paper
3. Practice Writing of an Academic Paper
4. Cultural Spreading into the World: The United States
5. Cultural Spreading into the World: Japan
6. Mutual Cultural Influences: Japan and Other Countries
7. Practice Presentation
8. Cultural Spreading into the World: Europe ①
9. Cultural Spreading into the World: Europe ②
10. Globalization theory and Global Communication
11. How Culture controls Communication?
12. Presentation Preparation Day
13. Final Presentation Day ①
14. Final Presentation Day ②

【Preparation & Review】
Preparation: In order to understand and catch what the instructors are talking about during the classes, participants need to prepare and think about the topics beforehand. For example, participants may need to research for the topics on the Internet, books, and so on at your home. Otherwise, it may be hard for you to grasp what the instructors are talking about. Additionally, participants may need to be accustomed to English by listening radio, watching television, and so on, in order to listen and catch a meaning given by the English language.
Review: Again, in order to understand and grasp the contents of each class, participants need to review each class at your home. Please make sure and make the contents clear, so you are able to prepare for the final presentation and the final term paper.

【Cautionary note】
English will be used as the lecture language, so please keep up with your English ability and study by yourself at your home.

【Evaluation】
Participation: 10%
Paper Works: 10%x2
Presentation: 40%
Term Paper: 30%

【Contact information】
Gladysheva Yaroslava: ysgladysheva@gmail.com
Yuki Takatori: yukitakatori@tsc.u-tokai.ac.jp

Global Japanese Studies					
Day	**Period**	**Course Title (Japanese)**	**Course Title (English)**	**Professor**	**Credit**
Fri	3	JAPANESE SUSTAINABLE TECHNOLOGY A	JAPANESE SUSTAINABLE TECHNOLOGY A	Yukari Aoki	2

【Summary】
Do you know or have you ever heard a word of ‘sustainability’? Recently, this word has been used in wide area, including civil engineering. In this lecture, the students will study the sustainability in the general society. And then, they will study about the sustainable constructions. Finally, the lecture will be focused on sustainable bridges.
In this lecture, a few topics related to sustainability will be explained. After that students will discuss about the topic in small group in English.

【Skills】
- Ability to think independently: Developing the ability to think about global environmental issues.
- Ability to achievement: To develop the ability to achieve by investigating and announcing environmental issues which you are interested in.
- Global perspective: Develop a global perspective while viewing satellite images that capture various environmental changes in the world.

【Achievements】
1. Ability to understand the essence of the problem
   - Can understand each specific problem accurately.
   - Understand the relationship between the two issues.
   - Point out the essential parts of the three problems.
2. Ability to investigate
   - Clarify the items to be investigated.
   - Understand how to investigate.
   - Be able to actual investigation.
3. Presentation skills
   - Summarize the survey results.
   - Present the survey results.
   - be able to answer questions accurately.

【Schedule】
1. Guidance
2. Latest Environmental issue
3. History of energy consumption
4. Sustainable technologies inspired by nature ---- Biomimetics ---
5. Actual state and issues of hydrogen energy technology for a sustainable society.
6. Environment-friendly products and recycling technologies
7. SDGs
8. The latest energy technologies spreading in Europe
9. Design for modeling in the group
10. Creating sustainable model 1
11. Creating sustainable model 2
12. Creating and analyzing the sustainable model
13. Making final presentation and finalize the sustainable model
14. Demonstrate the model, final presentation, discussion and peer review

【Preparation & Review】
- Preparation: Research about the renewable energy.
  Review: Write an article about the energy you are interested in.
- Preparation: Research about the most significant environmental issues.
  Review: Summarize about the environmental issue which you are most interested in.
- Preparation: Check how much you pay for your electricity per month.
  Review: How can you reduce your energy consumption?
- Preparation: What is the Biomimetics?
  Review: Please find more biomimetics things in the world.

- Preparation: What is hydrogen energy?
  Review: write about your opinion about hydrogen energy.
- Preparation: research about the recycling system in your country.
  Review: Create the new recycling system. What kind of products do you want to recycle?
- Preparation: Study about the meaning of 'sustainability'/
  Review: Which one among the SDGs is good for your country?
- Preparation: What is the latest energy technology you searched?
  Review: Do you think the latest energy is good? why and why not?
- Preparation: Think about the idea for sustainable model.
  Review: Discuss with your partner/group mate about the model.
- Preparation: Prepare some materials which you want to use for your model.
  Review: Please check and analyzing the model with your partner/group mates.
- Preparation: Analyzing the weak point of your model.
  Review: Think about the good point and bad point about your model.
- Preparation: Think about the way to improve your model.
  Review: Think about the sustainable point about your model.
- Preparation: Prepare your final presentation and make slides.
  Review: Practice your presentation.
- Preparation; Finalize your model and practice your presentation.

【Cautionary note】

This class is in English. However, your English level is not very important. You should be able to speak or communicate your opinion in English. The final presentation must be in English.

【Evaluation】

We will evaluate your grade comprehensively based on the points of each minute paper or mini-test (5 points x 10 times), attitude toward the class + Q and A in English (10%), and the results of the final presentation (40%). Attendance of each class is confirmed by submitting a minute paper or a mini test. Late arrivals are limited to 10 minutes, and late arrivals longer than 10 minutes are considered as an absent.
In the evaluation, the applicability of each of the items (1) to (3) in each of the learning objectives (1) to (3) is checked and graded according to the following criteria. Confirm the applicability and score according to the following criteria.
S: Achieve three goals each
A: Achieve two goals each two or more
B: Achieve two goals each
C: Achieve one goals.

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Fall Semester

(Please be noted that the following syllabus is of
2019 Fall Global Japanese Studies)

Global Japanese Studies					
Day	**Period**	**Course Title (Japanese)**	**Course Title (English)**	**Professor**	**Credit**
Mon	2	JAPANESE CULTURE STUDIES	JAPANESE CULTURE STUDIES	Yuki Takatori	2

【Summary】

In this course, participants study culture(s) in Japan. We especially focus on Japanese cultures in the Modern Times.

Through this study, participants always need to think interesting points and come up with some questions: for example, some features of Japanese cultures; a wide-range of views of Japanese cultures. Also, by doing discussions and presentations in this course, participants realize various cultures of Japanese people; by means of understanding others, we consider what Japanese identity and social phenomenon are.

This course includes various topics: Japanese culture, Music culture in Japan, the influence “of” and “on” Japanese Culture to the World’s Culture, Japanese Fashion and Japanese Movies. Therefore, participants always need to think diverse problems, and needless to say that active attitudes and participation are mandatory in this course.

【Schedule】

1. (9/30) Guidance
2. (10/7) Basic Idea for Writing an Academic Paper 1
3. (10/14) Basic Idea for Writing an Academic Paper 2
4. (10/21) Japan and Music Culture 1
5. (10/28) Japan and Music Culture 2
6. (11/11) Small Presentation Day 1: The Situation of Japanese Music Industry
7. (11/18) Small Presentation Day 2: The Situation of Japanese Music Industry
8. (11/25) Japanese Culture in the World 1（Due date of Paper work 1）
9. (12/2) Japanese Culture in the World 2
10. (12/9) Japanese Fashion
11. (12/16) Japanese Movies
12. (12/23) Presentation Preparation Day（Due date of Paper work 2）
13. (1/6) Final Presentation Day 1
14. (1/20) Final Presentation Day 2

【Goal】

(1) Ability to Challenge: Positive and active attitudes toward each class
(2) Ability of Gathering: Summarize what you do and what your group discusses
(3) Presentation Skills: Having flexible and creative thoughts

Global Japanese Studies					
Day	**Period**	**Course Title (Japanese)**	**Course Title (English)**	**Professor**	**Credit**
Mon	4	GLOBAL HUMAN SECURITY	GLOBAL HUMAN SECURITY	Yaroslava Gladysheva	2

【Summary】
The course will be taught mainly in English. In this course, participants study general theoretical aspects of the Human Security Concept and through the group work and discussion activities will be able to think about Human Security from the perspectives of the International Society, Government, Economics etc.
To analyse the International Society from different perspectives various real cases connected with Human Security Concept implementation will be used.
To enhance the understanding of Human Security Concept such topics as City Security, Migration and Refugees Issues, Domestic Issues of Japan, EU and Russia are included to the course program.

【Schedule】
Class 1 Introduction of the Course
Class 2 Globalization: Theory and Practice
Class 3 Evolution of International Society
Class 4 Political Theories and Security
Class 5 International issues
Class 6 Concepts of Security and Human security (Paper (1) due)
Class 7 Human Rights and Human Security
Class 8 Human Security Issues and International Relations
Class 9 - Human Security Issues in EU and Russia I
Class 10 - Domestic Issues in Human Security in EU and Russia
Class 11 - Migration Issues and Security in EU and Russia
Class 12 - City Security (Paper (2) due)
Class 13 – Final Presentation
Class 14 – Final Presentation and feedback

【Goal】
(1) Analytical ability: streamline and analyze cases connected with Human Security issues that exist in different countries.
(2) Communication skills: express your ideas properly from the standpoint of theory and be able to discuss in English.
(3) Problem solving ability: appropriately understand the role that different actors can play in the process of problem solving.

Global Japanese Studies					
Day	**Period**	**Course Title (Japanese)**	**Course Title (English)**	**Professor**	**Credit**
Tue	2	SUSTAINABLE ENGINEERING AND GLOBAL SOCIETY B	SUSTAINABLE ENGINEERING AND GLOBAL SOCIETY B	Yukari Aoki	2

【Summary】

Do you think the earth environmental is destroying these days by human activity? Do you think these extreme weathers is because of environmental issues? Do you know the meaning of ‘suitability’? You will find the answers when you study in this course. Sustainability can be used for many different areas.

In this class, the sustainability of architectural area will be introduced and learned by the professionals.

【Schedule】

1. Guidance（Aoki, Nakano, Nakamura）
2. Discuss about the environmental issues。（Aoki）
3. SDGs (Aoki)
4. Achievement of SDGs (Aoki)
5. What is the ‘tower’? (Aoki)
6. Sustainability in buildings. （Nakano））
7. Environmental Control Strategies of Vernacular Houses. （Nakano）
8. Experiment on Passive Environmental Control of Buildings. （Nakano）
9. Design and Making models 1. (Aoki,Nakamura）
10. Design and Making models 2. (Aoki,Nakamura）
11. Design and Making models 3. (Aoki,Nakamura）
12. Design and Making models 4. (Aoki,Nakamura）
13. Design and Making models 5. (Aoki,Nakamura）
14. Presentation day with peer review. (Aoki, Nakano, Nakamura

Global Japanese Studies					
Day	**Period**	**Course Title (Japanese)**	**Course Title (English)**	**Professor**	**Credit**
Tue	3	JAPANESE SOCIETY B	JAPANESE SOCIETY B	Yuki Takatori	2

【Summary】

In this course, participants study various aspects of Japanese society.

Through this study, participants always need to think interesting points and come up with some questions: for example, the kinship system of Japan and the world; the structure of Japanese society; a wide-range of views of Japan from the world. Also, by doing discussions and presentations in this course, participants realize various behavioral patterns and systems of Japan; by means of understanding of others, participants consider what Japanese identity and social phenomenon are.

This course includes various aspects: Kinship, Social Security System, Residency, Family, Mortgage Loan. Therefore, participants always need to think diverse problems, and needless to say that active attitudes and participation are mandatory in this course.

【Schedule】

1. (10/1) Guidance
2. (10/8) Basic Idea for Writing an Academic Paper 1
3. (10/15) Basic Idea for Writing an Academic Paper 2
4. (10/29) Kinship in Japanese Society
5. (11/5) Kinship in Other Countries
6. (11/12) Small Presentation Day 1: Presenting Your Thoughts on the Concept of Kinship
7. (11/19) Small Presentation Day Presenting Your Thoughts on the Concept of Kinship
8. (11/26) Social Security System in Japan and Europe（Due date of Paper work 1）
9. (12/3) Japanese Residents and Non-residents
10. (12/10) Family
11. (12/17) Mortgage Loan as a Social System
12. (1/7) Presentation Preparation Day（Due date of Paper work 2）
13. (1/14) Final Presentation Day 1
14. (1/21) Final Presentation Day 2

【Goal】

(1) Ability to Challenge: Positive and active attitudes toward each class
(2) Ability of Gathering: Summarize what you do and what your group discusses
(3) Presentation Skills: Having flexible and creative thoughts

Global Japanese Studies					
Day	**Period**	**Course Title (Japanese)**	**Course Title (English)**	**Professor**	**Credit**
Tue	4	JAPANESE STUDIES' SPECIALITIES PROJECT B	JAPANESE STUDIES' SPECIALITIES PROJECT B	Almohmen Abdulla	2

【Summary】
「JAPANESE STUDIES SPECIALITIES PROJECT B」is a Project Based Learning by the project team, which is one of the educational programs for fostering the four powers of self-thinking ability, gathering ability, challenging ability and accomplishment ability.
Project based Learning is a teaching method in which students gain knowledge andskills by working for an extended period of time to investigate and respond toan authentic, engaging and complex question, problem, or challenge.
In Gold Standard PBL, projects are focused on student learning goals and include Essential Project Design Elements.

【Schedule】
1- Orientation, [disseminate "hidden Japanese culture" to the world]
2- Let's discuss about it.
3- Tell your opinion
4- Set target project and its task [disseminate "hidden Japanese culture" to the world]
5- Project task, hidden Japanese culture. Let's discuss in earnest
6- Project task、hidden Japanese culture. Let's discuss in earnest
7- Project task、hidden Japanese culture. Let's gather information
8- Project task、hidden Japanese culture. Let's gather information
9- Project task, Let's pose an issue
10- Project task、Let's pose an issue
11- Project task, try to envision plan
12- Project task, try to envision plan
13- Project presentation
14- Project presentation

【Goal】
(CT) CRITICAL THINKING SKILLS refer to students being able to analyze complex problems, investigate questions for which there are no clear-cut answers, evaluate different points of view or sources of information, and draw appropriate conclusions based on evidence and reasoning.
(CO) COLLABORATION SKILLS refer to students being able to work together to solve problems or answer questions, to work effectively and respectfully in teams to accomplish a common goal and to assume shared responsibility for completing a task.
(CM) COMMUNICATION SKILLS refer to students being able to organize their thoughts, data and findings and share these effectively through a variety of media, as well as orally and in writing.
(CR) CREATIVITY AND INNOVATION SKILLS refer to students being able to generate and refine solutions to complex problems or tasks based on synthesis, analysis and then combining or presenting what they have learned in new and original ways.
DIRECTION SKILLS refer to students being able to take responsibility for their learning by identifying topics to pursue and processes for their own learning, and being able to review their own work and respond to feedback.
(G) GLOBAL CONNECTIONS refers to students being able to understand global, geo-political issues including awareness of geography, culture, language, history, and literature from other countries.

Global Japanese Studies					
Day	**Period**	**Course Title (Japanese)**	**Course Title (English)**	**Professor**	**Credit**
Thu	2	GLOBAL AREA STUDIES B	GLOBAL AREA STUDIES B	Yuki Takatori	2

【Summary】

In this course, participants are going to study about “different countries” and “different people”. Global Area Studies, in general, is about History, Economy, Politics, Culture, Language, People, and so on.

We are going to concentrate on analyses of these spears in Hawaiian context. We are especially going to focus on traditional cultures and cultures in the present times. Also, we will see how people have been lived with those cultural activities.

Participants always need to think about them from your point of view, and you need to compare and contrast the case in Hawai‘i with other areas.

Through different type of activities such as discussions, paper works, and presentations, participants are going to form a view about whole situation, problems and challenges of different abilities.

Needless to say, attendance is mandatory, and your participations toward each class are expected.

【Schedule】

1. (10/3) Guidance
2. (10/10) Basic Idea for Writing an Academic Paper 1
3. (10/17) Basic Idea for Writing an Academic Paper 2
4. (10/24) The Case Study in Hawai‘i 1: Language and Culture
5. (11/7) The Case Study in Hawai‘i 2: Language and Culture
6. (11/14) Small Presentation Day 1: Introducing Other Areas
7. (11/21) Small Presentation Day 2: Introducing Other Areas（Due date of Paper work 1）
8. (11/28) The Case Study in Hawai‘i 3: Society and People
9. (12/5) The Case Study in Hawai‘i 4: Society and People
10. (12/12) The Case Study in Hawai‘i 5: Tourism Industry and Economy
11. (12/19) The Case Study in Hawai‘i 6: Tourism Industry and Economy
12. (1/9) Presentation Preparation Day（Due date of Paper work 2）
13. (1/16) Final Presentation Day 1: Compare and Contrast between Different Countries
14. (1/23) Final Presentation Day 2: Compare and Contrast between Different Countries

【Goal】

(1) Ability to Challenge: Positive and active attitudes toward each class
(2) Ability of Gathering: Summarize what you do and what your group discusses
(3) Presentation Skills: Having flexible and creative thoughts

Global Japanese Studies					
Day	**Period**	**Course Title (Japanese)**	**Course Title (English)**	**Professor**	**Credit**
Thu	3	GLOBAL CIVIL RIGHTS AND CITIZENSHIP	GLOBAL CIVIL RIGHTS AND CITIZENSHIP	Yuki Takatori	2

【Summary】

In this course, participants study the role of global civil society.

Through this study, participants always need to think interesting points and come up with some questions: for example, the fundamental meaning of citizenship and social rights; the role of language and culture in the global society; the relationship of language, culture, and human rights; the case study in Europe. Also, by doing discussions and presentations in this course, participants realize the meaning of citizenship and people's role in the global civil society; by means of understanding of others, participants focus on how we can be as a global citizen in the present society.

This course includes various topics: The meaning of Citizenship, Language and Culture, Human Rights and Sustainable Development Goals. Therefore, participants always need to think diverse problems, and needless to say that active attitudes and participation are mandatory in this course.

【Schedule】

1. (10/3) Guidance
2. (10/10) Basic Idea for Writing an Academic Paper 1
3. (10/17) Basic Idea for Writing an Academic Paper 2
4. (10/24) Language and Human Rights
5. (11/7) Culture and Human Rights
6. (11/14) Small Presentation Day 1: Present Your Ideas on Human Rights
7. (11/21) Small Presentation Day 2: Present Your Ideas on Human Rights
8. (11/28) Citizenship and Human Rights（Due date of Paper work 1）
9. (12/5) Citizenship Issues
10. (12/12) Sustainable Development Goals and Global Citizenship
11. (12/19) Case Study
12. (1/9) Presentation Preparation Day（Due date of Paper work 2）
13. (1/16) Final Presentation Day 1
14. (1/23) Final Presentation Day 2

【Goal】

(1) Ability to Challenge: Positive and active attitudes toward each class
(2) Ability of Gathering: Summarize what you do and what your group discusses
(3) Presentation Skills: Having flexible and creative thoughts

Global Japanese Studies					
Day	**Period**	**Course Title (Japanese)**	**Course Title (English)**	**Professor**	**Credit**
Fri	2	JAPANESE SUSTAINABLE TECHNOLOGY B	JAPANESE SUSTAINABLE TECHNOLOGY B	Yukari Aoki	2

【Summary】
Do you know or have you ever hard a word of ‘sustainability’? Recently, this word has been used in wide area, including engineering.
In this lecture, the students will study the sustainability for the engineering technology, such as energy and materials.
Also we will go to the laboratory to see the latest research related to sustainability at this university.

【Schedule】
1: Guidance (Aoki)
2: What is the Sustainability? (Aoki, Uchida)
3: Discuss about the waste problem (AOKI, Genma)
4: International investigation. (Aoki,Uchida, Genma)
5: Sustainable technologies inspired by nature ---- Biomimetics --- (Uchida, Aoki)
6: Actual state and issues of hydrogen energy technology for a sustainable society. (Uchida, Aoki)
7: How to research and how to make presentation. (Aoki, Uchida)
8: Carbon Capture and Storage (Genma, Aoki)
9: Hydrogen Energy and Hydrogen Storage (Genma, Aoki)
10: Design and create the battery model (Genma, Aoki)
11: Create the model using the battery 1(Uchida and Aoki)
12: Create the model using the battery 2 (Genmaand Aoki)
13: Presentation and discussion 1(Aoki, Uchida,Genma)
14: Presentation and discussion 2(Aoki, Uchida, Genma)

Global Japanese Studies					
Day	**Period**	**Course Title (Japanese)**	**Course Title (English)**	**Professor**	**Credit**
Field work		FIELD WORK GLOBAL COMMUNICATION A	FIELD WORK GLOBAL COMMUNICATION A	Yukari Aoki	2

【Summary】

This course, which mainly conducted during session period as a college-wide program, has been developed to provide students with off-campus learning opportunities that are planned through collaboration with other educational / business / and administrative institutions.

During such activities, students led by a teacher(s) will be extensively supported by those professionals from external institutions and be involved in educational actions as followed; 1) visiting particular sites, 2) fieldwork and empirical research, 3) workshop, 4) discussion and presentation, 5) internship and working experience.

It also requires students to prepare a research either / both on visiting institutions and given assignments from them, utilizing extra hours in prior semester.

Due to the fact that course topic, design, and its partner institutions will be altered in every course, students must follow the instructions given by the course instructors at the orientation / guidance period to comprehend detailed contents of the course before registering the course.

【Goal】

1. To learn basic contents and frameworks related to the topic given and to produce solutions
2. To develop skills of conducting scientific research collecting evidences and objective data to support his/her own hypotheses
3. To develop skills needed to communicate and cooperate with peers to manage team discussions and presentations. A

Global Japanese Studies					
Day	**Period**	**Course Title (Japanese)**	**Course Title (English)**	**Professor**	**Credit**
Internship		INTERNSHIP INTERNATIONAL RELATIONS A	INTERNSHIP INTERNATIONAL RELATIONS A	Almohmen Abdulla	2

【Summary】

This session course is a [problem-solving type] educational program developed by partnership between industry, government and academia. We will give unit credits to students who attended. A group of 6 to 12 students gathered beyond the boundaries of undergraduate and graduate studies will work on actual issues presented by international organizations and organizations and make proposals for problem solving.

In principle, through practical training at institutions and organizations who presented the issues, we will autonomously conduct research and planning work to solve the problem. The feature of the short-term internship practical training program and filled work classes in this department is to carry out with the cooperation of cooperating agencies (such as overseas diplomatic missions and international business organizations) with high-level expertise and abundant practical experience.

In other words, the expert guidance as an expert at the intermediary introduction of host institution before training, preliminary education and individual guidance, interim follow-up during practical training period (in case of problems during practical training), report meeting after practical training etc. And you can receive advice.

Collaborating organizations to accept are limited to practice at internship for about 5 days during vacation during the winter session.

【Goal】

1.Cross-cultural values and attitudes and their impact on how we communicate across cultures.

2.An in-depth analysis of key cross-cultural communication styles.

3.An understanding of your own cross-cultural communication style and how you need to adapt it for more effective international working.

4.Cross-cultural working styles and expectations.

5.Using virtual communication in a cross-cultural context.

6.Tips and strategies for a better cross cultural communication

TOKAI UNIVERSITY

2019

Undergraduate School of Humanities and Culture, Department of International Studies

Subjects taught in English

*Class Schedule is Subject to Change

Spring Semester

Department of International Studies Undergraduate School of Humanities and Culture					
Day	**Period**	**Course Title (Japanese)**	**Course Title (English)**	**Professor**	**Credit**
Mon	2	日米関係	Japan-US Relations	Ryuta Wada	2

【Summary】

During the Cold War, Japan-US security alliance was the backbone of Japan's foreign and security policy, and Japan considered the alliance as a safeguard to deal with security threat posed by communist countries such as USSR and China. After the end of the Cold War, Japan continues to recognize the alliance as a cornerstone for peace and stability in the Asia-Pacific region. Why was Japan-US relations considered as a lifeline of Japan during the Cold War? Why Japan-US security alliance was strengthened even after the end of the Cold War? This class will study and understand comprehensively about Japan-US relations focusing upon any aspects, including diplomacy and security but also economy and culture. To do so, this course will make a use of both Japanese materials and English ones.

【Schedule】
1. Introduction: the Origin of Japan-US Relations
2. History of Japan-US Security Alliance: 1950s-1960s
3. Why Does the Japan-US Alliance Matter Now?
4. Contemporary Japan-US Relations over China
5. Contemporary Japan-US Relations over Korean Peninsula
6. Contemporary Japan-US Relations over Southeast Asia
7. Contemporary Japan-US Relations over Russia
8. Contemporary Japan-US Relations: Alliance Theory and Comparative Analyses with NATO and US-UK ‘Special Relationship’
9. Field Research: Visit to Camp Zama or JICA Yokohama
10. Japan-US Security Relations: US Military Bases in Okinawa
11. Japan-US Trade Relations: Trans-Pacific Partnership (TPP) and Beyond
12. ‘Bridging Roles’ In Between: Presence of ‘Japanese Americans’
13. Aftermath of ‘311’ Great Earthquake: Towards Greater Friendship
14. Conclusion and Submission of Final Essay

【Goal】
1. Capable of understanding the basics of international security
2. Capable of discussing issues and topics in English in class
3. Capable of giving a presentation

Department of International Studies Undergraduate School of Humanities and Culture					
Day	**Period**	**Course Title (Japanese)**	**Course Title (English)**	**Professor**	**Credit**
Mon	4	INTERCULTURAL COMMUNICATIONS A	INTERCULTURAL COMMUNICATIONS A	Margalit Faden	2
Thu	4	INTERCULTURAL COMMUNICATIONS B	INTERCULTURAL COMMUNICATIONS B	Margalit Faden	2

【Summary】
This course focuses on the communication challenges faced by people in a globalizing world. During the first half of the course, students will learn about and discuss several theories of intercultural communication as well as evaluate their own intercultural communication styles. During the second half of the course, students will read and discuss Polite Fictions. Throughout the course, students will participate in exercises in which they will discuss and practice overcoming specific challenges in intercultural communication. This course involves significant class participation and is particularly recommended for students who have studied, worked, or interned overseas or plan to study, work, or intern overseas. Students must register for and attend both Intercultural Communications A and Intercultural Communications B.

【Schedule】
Week 1: Course introduction and stumbling blocks in intercultural communication
Week 2: Collectivism, individualism, and high- and low-context communication
Week 3: Richard Lewis's cultural classifications
Week 4: Geert Hofstede's cultural dimensions
Week 5: Erin Meyer's cultural dimensions
Week 6: Intercultural communication self-assessment
Week 7: Mid-term presentations and mid-term report submission
Week 8: Polite Fictions, Chapters 1 and 2
Week 9: Polite Fictions, Chapters 3 and 4
Week 10: Polite Fictions, Chapters 5 and 6
Week 11: Polite Fictions, Chapters 7 and 8
Week 12: Polite Fictions, Chapters 9, 10, and 11
Week 13: Final presentations and final report submission
Week 14: Review and course conclusion

【Learning Objectives】
By the end of the course, students will;
(1) have acquired an understanding of the potential difficulties in intercultural communication;
(2) have become more aware of their own communication styles; and
(3) have gained confidence in speaking in English in difficult intercultural contexts.

Fall Semester

Department of International Studies Undergraduate School of Humanities and Culture					
Day	**Period**	**Course Title (Japanese)**	**Course Title (English)**	**Professor**	**Credit**
Mon	3	INTERNATIONAL DEVELOPMENT A	INTERNATIONAL DEVELOPMENT A	Keiichi Tanabe	2
Mon	4	INTERNATIONAL DEVELOPMENT B	INTERNATIONAL DEVELOPMENT B	Keiichi Tanabe	2

【Summary】
This class aims at learning development theories and practices mainly from economic, political, and social perspectives. It is necessary to learn both evolution of development theories and actual development practices to understand the applicability and challenges of development theories and reality of development situations on the ground. Visual materials will be used occasionally to promote multi-dimensional views on development issues in this class. Classes will be conducted in English. Assigned students will be required to read reading materials and present the summaries in the class. Students are also required to make mid-term group presentations and take final exam both in English. According to the new curriculum, this class consists of A and B, however, students are instructed to take both.

【Schedule】
1. Overview
2. Introduction What is “development”?, Measuring “development”
3. Historical influences and central actors
4. Classical Theories, Keynesianism and Neoliberalism (1)
5. Classical Theories, Keynesianism and Neoliberalism (2)
6. Marxist Theories, Dependency Theories and World Systems Theory
   Relations between Advanced Countries and Developing Countries (1) Film「Darwin’s Nightmare」
   Relations between Advanced Countries and Developing Countries (2) Discussions and In class report writing
7. Gender and Development (1)
8. Gender and Development (2) World Development Report 2012 “Gender Equality and Development”
9. Gender and Development (3) Film「Sonita」
10. Gender and Development (4) Discussions and In class report writing
11. Group presentations
12. Group presentations
13. Environment and Development Theory (1) Film「An Inconvenient Truth」
14. Environment and Development Theory (2) Discussions and In class report writing
15. International Organizations and Official Development Assistance (1) Film「Poverty, Inc」
16. International Organizations and Official Development Assistance (2) Discussions and In class report writing
17. Conflicts and Development (1)
    World Bank Policy Research Report “Breaking the Conflict Trap”
    Civil War and Development Policy
18. Conflicts and Development (2)
19. Conflicts and Development (3), Film「Blood Diamond」
20. Conflicts and Development (4) Discussions and In class report writing
21. UNDP development projects analysis exercise (1)
22. UNDP development projects analysis exercise (2)
23. Review of the class (1)
24. Review of the class (2)
25. Final Exam (1)
26. Final Exam (2)

【Goal】
1. Capable of understanding basic theories of international development
2. Capable of understanding actual practices of international development
3. Capable of organizing own ideas and expressing in English

Department of International Studies Undergraduate School of Humanities and Culture					
Day	**Period**	**Course Title (Japanese)**	**Course Title (English)**	**Professor**	**Credit**
Mon	3	国際安全保障論 A	Issues in International Security A	Ryuta Wada	2
Mon	4	国際安全保障論 B	Issues in International Security B	Ryuta Wada	2

【Summary】
This class aims to understand and discuss issues in international security. Each session will consist of a presentation by a small number of students of a chapter or a section of assigned texts, followed by questions and answers and a discussion session. Please note that all the sessions will be conducted in English.

【Schedule】
1. Introduction
   SECURITY STUDIES
2. Realism and National Security
3. War and World Politics
4. International and Global Security
5. Human Security as a new concept of security
6. Gender and international security
7. The United Nations
8. NGOs in world politics
9. Environmental Issues
10. Terrorism and Globalization
11. Proliferation of weapons of mass destruction
12. Nationalism, national self-determination, and international relations
    THE US FOREIGN AND SECURITY POLICY
13. George W. Bush and the Bush Doctrine
14. Obama's 'Rebalance' to Asia and Trump

【Goal】
1. Capable of understanding the basics of international security
2. Capable of discussing issues and topics in English language
3. Capable of making an effective presentation in English language

Department of International Studies Undergraduate School of Humanities and Culture					
Day	**Period**	**Course Title (Japanese)**	**Course Title (English)**	**Professor**	**Credit**
Tue	4	GLOBAL ISSUES A	GLOBAL ISSUES A	Daisuke Onuki	2
Fri	4	GLOBAL ISSUES B	GLOBAL ISSUES B	Daisuke Onuki	2

【Summary】
In theTuesday sessions (Global Issues A), we will discuss multiculturalism (or the lack of it) in Japan and in other parts of the world, and, on Fridays (Global Issues B), we will deal with the issue of global migration from demographic perspectives -- a more fact-based approach.
In the Tuesday sessions students must:
1. Work together with other students to give a group presentation on the current situations of multiculturalism in the country of origin of the member foreign students. Each group should present the results of their research within 45 minutes with the use of PowerPoint and/or other visual aids,
2. Write, individually, two (2) short reports in the process of preparing for the group presentation, and
3. Submit, at the end of the semester, a final report summarizing the discussion that took place during the presentation of the group.

In the Friday sessions students will listen to lectures, participate in small group discussions and present the results of the discussion to the whole calss. Grades will be given, for the Tuesday sessions, based on the quality of the presentation and the reports, and for the Friday session, on the final exam and the contribution the student makes to small group discussions.
This class is conducted bilingually in English and Japanese. Students are free to give their presentation and write reports in either one of the languages.

【Schedule】
Globa Issues A (Tuesdays)
Week 1 – Course orientation
Week 2 – Introduction: What is multiculturalism?
Week 3 – Workshop: Your experiences with multiculturalism/every-day conviviality
Week 4 – Multiculturalism in Japan
Week 5 – Multiculturalism in Japan
Week 6 – Workshop: What we know about each other’s country
Week 7 – Workshop: What we know about each other’s country (Submit your short report-2)
Week 8 – Presentations (Countries 1 and 2)
Week 9 – Presentations (Countries 3 and 4)
Week 10 – Presentations (Countries 5 and 6)
Week 11 – Multiculturalism in the world
Week 12 – Multiculturalism in the world
Week 13 – Multiculturalism in the world
Week 14 - Reflection (Submit your final report)

Globa Issues B (Fridays)
Week 1 – Introduction: What is demography?
Week 2 – Demography and migration
Week 3 – Demographics of Japan
Week 4 – Demographics of Japan
Week 5 – Prospects of the world population
Week 6 – Prospects of the world population
Week 7 – Demographics of the countries of origin of the participating members of the course
Week 8 – Demographics of the countries of origin of the participating members of the course
Week 9 – Demographics of the countries of origin of the participating members of the course
Week 10 – SDGs and international development explained from demographic perspectives
Week 11 – SDGs and international development explained from demographic perspectives
Week 12 – Review of the facts
Week 13 – Final exam
Week 14 – Final exam returned

【Goals】
1. To develop a critical perspective in understanding:
- current situations of multiculturalism in Japan and in other countries
- relationship between the demography and global migration
- SDGs in the context of demographic transition
2. To develop necessary skills to work with other (Japanese and international) students in classroom discussions and in preparing and giving a country case-study presentation
3. To develop step-by-step skills to organize one's thoughts in writing reports

Department of International Studies Undergraduate School of Humanities and Culture					
Day	**Period**	**Course Title (Japanese)**	**Course Title (English)**	**Professor**	**Credit**
Thu	4	アメリカ研究	American Studies	Margalit Faden	2

【Summary】
What does “Make America Great Again” mean? This course investigates the origins of modern American society. The course will start by focusing on current issues in American society and then progress backward through history to detect the roots of today’s societal debates. Students will be expected to complete three reports and weekly homework. This course requires consistent and active class participation and is particularly recommended for students who have studied/worked/interned in the United States or plan to study/work/intern in the United States.

【Schedule】
Week 1: Introduction
Week 2: Government
Week 3: Expression
Week 4: Guns
Week 5: Justice
Week 6: Economy
Week 7: Healthcare
Week 8: Education
Week 9: Immigration
Week 10: Race
Week 11: Gender
Week 12: People
Week 13: Environment
Week 14: Course review

【Learning Objectives】
By the end of the course, students will
(1) have acquired an understanding of current issues in American society;
(2) have improved English-language research skills; and
(3) have gained confidence in communicating in English about social issues and historical events.

TOKAI UNIVERSITY

2020

Undergraduate School of Engineering

Subjects taught in English

*Class schedule is subject to change

Fall Semester

Undergraduate School of Engineering					
Day	**Period**	**Course Title (Japanese)**	**Course Title (English)**	**Professor**	**Credit**
TBD	**TBD**	**化学基礎**	**Basic Chemistry**	**Sergei Kulinich**	**2**

【Summary】
Chemistry is the study of the composition, properties and behavior of matter, and is often referred to as the central science because it joins together physics, mathematics, biology and medicine, as well as earth and environmental sciences.
Thus, knowledge of the nature of chemical compounds and processes provides valuable insight into a variety of physical, geological, biological and other phenomena. Hence, understanding chemistry provides a very useful basis prior to focusing on more specialised subjects.
This lecture course gives the basic knowledge of chemistry in English. Although it aims mainly at international first-year students, Japanese students are also very welcomed.

【Schedule】
1. What is chemistry? Introduction and main terms.
   Place of chemistry among other sciences. Quiz on chemistry learned before.
2. The atomic theory of matter and the periodic law I:
   Dalton's atomism. Molecules (Avogadro's law). Atomic model. Hydrogen atom.
3. The atomic theory of matter and the periodic law II :
   Concept of quantum number. Electron structure at atoms. Periodic system of atoms.
4. Chemical bond and the structure of matter I:
   Classification of chemical bond sand their properties. Ionization energy.
   Ionic bond. Covalent bond.
5. Chemical bond and the structure of matter II :
   Polarity of molecules. Electronegativity. Metallic bond. Intermolecular forces.
   Shapes of molecules.
6. Three states of matter and equilibrium I :
   Three states of matter. Phase diagrams. Gas law. Molar ratio.
7. Three states of matter and equilibrium II :
   Vapor pressure of liquids. Raoult's law. Boiling-point elevation.
   Freezing-point depression. Types of crystals
8. Midterm examination (W1-W7) .
9. Kinetics and equilibrium I :
   Types of chemical reactions. Thermochemical reactions. Description of kinetics.
10. Kinetics and equilibrium II :
    Chemical equilibrium. Law of mass action.
11. Kinetics and equilibrium III :
    Le Chatelier's principle. Solubility product.
12. Acidsandbases:
    Concept and definition of pH. Acid-base balance. Acid-base titration.
13. Oxidation states of atoms and reduction:
    Redox (short for REDuction-Oxidation) reactions.
    Ionization tendency and battery(electricity).
14. Final examination(W9-W13)

【Grade Weightings】
Two credits will be given based on mid-term exam(40%), final exam(40%) and quizzes(20%) with the score of 90% for "S" grade, 80% for "A grade, 70% for "B" grade and 60% for "C" grade. No credit will be given for scoring less than 60%. Those missing 1/3 of the classes will fail, getting "/".

【Books】
新版 教養の現代化学/ 多賀・片岡・早野/ 三共出版/ 2400円
化学のコンセプト/ 舟橋弥益男他/ 化学同人/ 2400円
化学概論 -物質の誕生から未来まで- / 共立出版

【Goal】

1 Account for the structure of atoms and the theoretical background to the periodic system.
2 Describe various types of chemical bonding and intermolecular forces, in addition to relating them to the physical properties of matter.
3 Account for three states of matter and their properties.
4 Account for the meaning of common properties and concepts within kinetics and chemical equilibrium, apply the new knowledge to perform calculations, and solve problems within these fields.
5 Account for the concept of acids and bases with acid-base equilibrium, and apply the new knowledge to perform calculations and solve relevant problems.
6 Account for the change of oxidation states of atoms and reduction-oxidation reactions, and apply the new knowledge to perform calculations and solve problems within these fields.

Undergraduate School of Engineering					
Day	**Period**	**Course Title (Japanese)**	**Course Title (English)**	**Professor**	**Credit**
TBD	**TBD**	**工科の微積分 1**	**Calculus for Engineers 1**	**Yukari Aoki**	**2**

【Keywords】
Differentiation of variable functions
Integration of variable functions

【Summary】
In this course, students will learn the concept of calculus and the basic calculation method. The goal is to be able to correctly use calculus as a tool in science and engineering specialized subjects.

1) Course summary：
Differentiation and integration, along with linear algebra, are the two pillars of mathematics necessary for science and engineering specialized subjects.
In this course, it is emphasis that understanding formulas and basic theorems. Calculation ability is also important. In addition, students aim to be able to understand calculus intuitively through application examples. To do so, it is indispensable not only to passively listen to classes but also to calculate actively by moving your own hands.
There will be time for exercises during class. Students aim to understand the existing items and master the calculation techniques.

2) Points for taking this course：
In order to truly understand and use calculus, it is indispensable not to passively listen to lectures, but to think and learn actively. According to a recent trend, the less you attend, the less you understand the lecture. So, it is important to attend every lecture. In addition, there are limits to the number of exercises that can be performed during class hours due to time constraints. So please do home study with a focus on review. Home study requires twice as much time as lectures. There are plenty of examples and exercises in the textbooks, please solve them. If you have any questions, you may want to use the ‘office hours’ of the lecturers. The office hours depends on the lecturers, so please ask them.

【Schedule】
Class 1: Function Exponential Logarithmic,
Trigonometric Review and Inverse Trigonometric Function
Class 2: Differentiation Definition and meaning of differentiation, derivative of basic functions,
sum, difference, product, quotient differentiation formula
Class 3: Differentiation Exercise of differentiation of multiplication and division
Class 4: Differentiation Differential formula of composite function
Class 5: Differentiation Differentiation of inverse function
Class 6: Application of differentiation Function increase / decrease table and graph
Class 7: Midterm examination and commentary, summary
Class 8: Integral Primitive functions, indefinite integrals, indefinite integrals of basic functions
Class 9: Integration Partial integration formula
Class 10: Integration Replacement integral formula
Class 11: Integration Exercises of simple partial integration and substitution integration
Class 12: Integration Definition of definite integral and basic theorem of calculus
Class 13: Application of integration Calculation of area and volume of rotating body
Class 14: Final examination and explanation, summary

【Preparation and review】
Please take sufficient time to prepare and review for the locations specified in the above class schedule.
In preparation, please check the next lesson, read the textbook carefully, and try to understand.
As a review, please re-solve the problems you have dealt with during class and take further similar problems.
Assignment feedback will be provided during class.

【Standards and rules for grade evaluation】

The test results are 40% midterm exam and 60% final exam. If your results is higher than 90%, the final mark will be S. Between 80% to 90%, it will be A. Between 70% to 80%, it will be B. If indicates 60% or higher, then C, and E indicates less than 60%. However, if the number of attendances is less than 2/3 of the number of classes, it will be /.

【Notes on taking the course】
It is difficult to fully develop mathematical knowledge through lectures alone. In order to deepen understanding, it is best and indispensable that not only to prepare and review, but also to consider the exercises by yourself.

【Books】
基礎微分積分学 (改訂版) 基礎数学研究会 著 東海大学出版 2592 円

【Goal】
(1) Learn how to calculate basic function derivatives.
(2) Understand the application of differentiation.
(3) Learn basic indefinite integral and definite integral calculation methods.
(4) Understand the application of integration methods.

Undergraduate School of Engineering					
Day	**Period**	**Course Title (Japanese)**	**Course Title (English)**	**Professor**	**Credit**
TBD	**TBD**	**工科の微積分 2**	**Calculus for Engineers 2**	**Yukari Aoki**	**2**

【Keywords】
Taylor deployment, Partial differentiation, Multiple integral

【Summary】
Calculus is an indispensable study for describing the basic and advanced physics. Its application range extends to natural sciences, engineering, etc., differential calculus is a powerful tool for understanding and analyzing phenomena. Especially, in events that deal with space and time, calculus of multivariable functions is indispensable.

In this class, the students will learn basic knowledge and ideas about calculus, following "Calculus 1 for Engineering" or "Calculus. As learning contents, firstly, the students will review and revise the supplement of the differentiation. In particular, the students will learn about Taylor development, which is often used in engineering.

By following that topics, they will learn about the concept of partial differentiation, the calculation method, and then the differential law of the composite function. The calculation exercises will be performed by the students at every classes. In addition, after a brief review of integration, the students will learn about integration applications (parameter display curve length, etc.).

Finally, you will learn the concept of double integration, calculation method by sequential integration, substitution integration formula (especially polar coordinates), etc. Moreover, as an application of double integration, the students will learn the formula for determining the volume of a solid.

【Schedule】
Class 1: Review of basic function differentiation, higher-order derivatives
Class 2: Taylor expansion and examples (sine, cosine, exponential)
Class 3: Partial differentiation, the concept of partial differentiation,
partial derivatives, higher order partial derivatives
Class 4: Partial differentiation, total differentiation, tangent plane formula
Class 5: Partial differentiation, differential formula of composite function
Class 6: Exercise of tangent plane, composition function
Class 7: Midterm examination and commentary, summary
Class 8: Application of integration, parameter display curve and its length
Class 9: Double integration, double integration and sequential integration
Class 10: Double integration, sequential integration exercise and change of integration order
Class 11: Double integration,
Jacobian calculation exercise and simple substitution integration exercise
Class 12: Double integration,
exercise of substitution integration using variable transformation to polar coordinates
Class 13: Application of double integration
Class 14: Final examination and explanation, summary

【Preparation and review】
Please take sufficient time to prepare and review for the locations specified in the above class schedule. In preparation, please check the next lesson, read the textbook carefully, and try to understand.As a review, please re-solve the problems you have dealt with during class and take further similar problems. Assignment feedback will be provided during class.

【Notes on taking the course】
It is difficult to fully develop mathematical knowledge through lectures alone. In order to deepen understanding, it is best and indispensable that not only to prepare and review, but also to consider the exercises by yourself.

【Standards and rules for grade evaluation】
The test results are 40% midterm exam and 60% final exam. If your results is higher than 90%, the final mark

will be S. Between 80% to 90%, it will be A. Between 70% to 80%, it will be B. If indicates 60% or higher, then C , and E indicates less than 60%. However, if the number of attendances is less than 2/3 of the number of classes, it will be /.

【Textbooks and reference books】
基礎微分積分学 (改訂版) 基礎数学研究会 著 東海大学出版 2592 円

【Goal】
(1) Understand Taylor expansion, especially Taylor expansion of exponential functions and basic trigonometric functions.
(2) Understand the concept of partial differentiation.
(3) Understand the tangent plane formula.
(4) Understand the concept of double integral and the calculation method.
(5) Understand the substitution integral formula for double integrals and the application of double integrals.

Undergraduate School of Engineering					
Day	**Period**	**Course Title (Japanese)**	**Course Title (English)**	**Professor**	**Credit**
TBD	**TBD**	**工科の線形代数 1**	**Linear algebra for Engineers 1**	**Dr. Yukari Aoki**	**2**

【Keywords】
Vector, matrix, Simultaneous linear equations

【Summary】
In this class, the students will learn the basic concepts of linear algebra, which are indispensable for studying engineering subjects.

Using the vector which you will learn in the first class, you can express not only points, lines, and planes, but also various physical quantities such as position, velocity, and acceleration. In addition, it can be displayed that linear equations and plane equations in space by vector inner and outer products.

By introducing a matrix and its operation, it is possible to obtain the advantages that spreadsheets can be expressed easily and simultaneous linear equations can be solved mechanically. There are some concepts necessary for understanding the matrix, which are a staircase matrix, basic deformation, and sweeping method. The number of solutions of simultaneous linear equations can be determined by the rank of the matrix. Furthermore, the inverse matrix is the matrix version of the inverse. Multiple simultaneous linear equations that differ only in the value on the right side have the advantage that the solution can be easily obtained by finding the inverse matrix once.

Finally, the students learn about eigenvalues and eigenvectors. Finding eigenvalues and eigenvectors of a matrix is important both theoretically and practically.

In the class, students will focus on the calculation procedures and their meaning, and aim to understand their meaning accurately through examples and problems. As a result, the goal is to acquire basic knowledge and ideas about linear algebra.

Students should deepen your own understanding by solving examples and problems. To achieve the goal, review is indispensable. Please check the text and syllabus before the lecture and understand the points of the class.

【Schedule】
Class 1：vector, inner product
Class 2：Linear equation, plane equation
Class 3：Matrix and matrix operations
Class 4：Staircase matrix and simultaneous linear equations
Class 5：Sweep method and simultaneous linear equations
Class 6：Sweeping calculation technique, matrix rank
Class 7：Calculation of simultaneous linear equations and rank of matrix
Class 8：Mid-term exam and explanation, summary
Class 9：Inverse matrix
Class 10：Inverse matrix computation
Class 11：Solving quadratic determinants and eigen equations of quadratic matrices
Class 12：Eigenvalues and eigenvectors of quadratic matrix and their calculation
Class 13：Inverse matrix, quadratic determinant, eigenvalues,
eigenvectors, matrix diagonalization summary and exercises
Class 14：Final examination, explanation, summary

【Preparation and review】
Please take sufficient time to prepare and review for the locations specified in the above class schedule. In preparation, please check the next lesson, read the textbook carefully, and try to understand. As a review, please re-solve the problems you have dealt with during class and take further similar problems. Assignment feedback will be provided during class.

【Notes on taking the course】
It is difficult to fully develop mathematical knowledge through lectures alone. In order to deepen understanding, it is best and indispensable that not only to prepare and review, but also to consider the

exercises by yourself.

【Standards and rules for grade evaluation】
The test results are 40% midterm exam and 60% final exam. If your results is higher than 90%, the final mark will be S. Between 80% to 90%, it will be A. Between 70% to 80%, it will be B. If indicates 60% or higher, then C , and E indicates less than 60%. However, if the number of attendances is less than 2/3 of the number of classes, it will be /.

【Textbooks and reference books】
Text book　スマート解法 線形代数　志村真帆呂　プレアデス出版　2376円
Reference book　線形代数演習帳 スマート解法　志村真帆呂　プレアデス出版　1836円

【Goal】
(1)　Understand vectors and equations of lines and planes.
(2)　Understand matrix and its operations, especially calculation of matrix product.
(3)　Understand how to solve simultaneous linear equations.
(4)　Understand how to find the inverse matrix.
(5)　Understand eigenvalues, eigenvectors and diagonalization.

Undergraduate School of Engineering					
Day	**Period**	**Course Title (Japanese)**	**Course Title (English)**	**Professor**	**Credit**
TBD	**TBD**	**工科の線形代数 2**	**Linear algebra for Engineers 2**	**Dr. Yukari Aoki**	**2**

【Keywords】
Determinant, eigenvalues and eigenvectors, diagonalization

【Summary】
Following the Linear Algebra for engineers 1, the students will learn about matrices.
First, you will review matrix, matrix operations and how to solve simultaneous linear equations.
Next, a quadratic determinant is defined by the area of the parallelogram when each side is given as a vector, and a cubic determinant is defined by the volume of the parallelepiped. This gives the determinant's properties and the calculation method (by sweeping out) through graphical considerations. Determinants of 4th order and higher are defined using this determinant property.
It also can be seen that 'the relationship between the existence of an inverse matrix', 'whether the determinant is 0', and 'the rank of the matrix'. By understanding general formulas of determinants, it can be obtained which is useful calculation methods such as cofactor expansion. The applications include cofactor matrices that give inverse matrix formulas and Kramer formulas that give solutions to simultaneous linear equations.
Next, a vector space basis is introduced. The base is one of the most important tools of linear algebra. In this class, it appears in the judgment of whether diagonalization is possible.
Finally, the students learn about eigenvalues and eigenvectors of the cubic matrix. Finding eigenvalues and eigenvectors of a matrix is important both theoretically and practically. The eigenvalue problem also appears in linear differential equations and is an important tool in physics and engineering. The students will also learn about matrix diagonalization and the possibility of diagonalization.
In the class, students will focus on the calculation procedures and their meaning, and aim to understand their meaning accurately through examples and problems. As a result, the goal is to acquire basic knowledge and ideas about linear algebra.
Students should deepen your own understanding by solving examples and problems. To achieve the goal, review is indispensable. Please check the text and syllabus before the lecture and understand the points of the class.

【Schedule】
Class 1：Review
Class 2：Quadratic and cubic determinants
Class 3：Basic properties of determinants
Class 4：Determinant general formula
Class 5：Application of determinants
Class 6：Cofactor expansion
Class 7：Cofactor matrix, Kramer formula
Class 8：Interim test and explanation, summary
Class 9：Basis
Class 10：Solving linear equations with parameters in the solution,
Review of determinants with variables
Class 11：Diagonalization of cubic matrix, eigenvalues, eigenvectors
Class 12：Calculation method for diagonalization of cubic matrix
Class 13：Summary and practice of basis, eigenvalues and eigenvectors, matrix diagonalization
Class 14：Final examination, explanation, summary

【Preparation and review】
Please take sufficient time to prepare and review for the locations specified in the above class schedule. In preparation, please check the next lesson, read the textbook carefully, and try to understand.As a review, please re-solve the problems you have dealt with during class and take further similar problems. Assignment feedback will be provided during class.

【Notes on taking the course】
It is difficult to fully develop mathematical knowledge through lectures alone. In order to deepen understanding, it is best and indispensable that not only to prepare and review, but also to consider the exercises by yourself.

【Standards and rules for grade evaluation】
The test results are 40% midterm exam and 60% final exam. If your results is higher than 90%, the final mark will be S. Between 80% to 90%, it will be A. Between 70% to 80%, it will be B. If indicates 60% or higher, then C , and E indicates less than 60%. However, if the number of attendances is less than 2/3 of the number of classes, it will be /.

【Textbooks and reference books】
Text book　スマート解法 線形代数　志村真帆呂　プレアデス出版　2376円
Reference book　線形代数演習帳 スマート解法　志村真帆呂　プレアデス出版　1836円

【Goal】
(1)　Understanding determinants.
(2)　Understanding eigenvalues.
(3)　Understanding eigenvectors.
(4)　Understand diagonalization.

Course of Information and Telecommunication Engineering					
Day	**Period**	**Course Title (Japanese)**	**Course Title (English)**	**Professor**	**Credit**
TBD	**TBD**	**ロボット工学の基礎**	**Foundations of Robotics**	**Yoshio Yamamoto**	**2**

【Course theme】

Obtaining fundamental knowledge of robotics

【Keywords】

Vector, matrix, coordinate transfer, rigid body motion

【Summary】

Recent progress on advanced information society has made old dreams become new realities in which robots expand their field from industry to our everyday life. Also, the rapidly growing aging society is expected to accelerate demands for robot technology in medical care and welfare.
Robotics covers a wide range of disciplines in mechanical, electrical and control engineering. It is mainly comprised of kinematics, mechanism, dynamics, control, sensors and actuators, computer vision, programming language, and artificial intelligence. The two most important subjects among those are kinematics and dynamics. This course mostly deals with the former topic. A robot, in general, consists of multiple joints and links, and the individual joints are attached with corresponding coordinate frames. Precise control the position and orientation of the robot hand necessitates repetitive coordinate transformations which represent kinematic relationships from one coordinate frame to the other.
Through this course students are expected to learn fundamental theories in kinematics which are needed to conduct systematic analyses of robot movement. Prior to learning those theories, fundamental mathematics such as vectors and matrices are covered.

【Attainment target for this course】

(1) Understand the concept of vector, matrix and related mathematical operations.
(2) Understand the basics of robotics such as joint, link, degree of freedom, mechanism, sensors and actuators.
(3) Understand rotational and translational coordinate transformation.
(4) Understand “Denavit-Hartenberg” representation and homogenous coordinate transformation.
(5) Understand velocity kinematics and Jacobian matrix.

【Schedule】

The syllabus details for this course must be printed by each student (or in PDF format).
Class 1: Introduction to robotics (what is a robot?)
Class 2: Fundamental mathematics (vector), homework1
Class 3: Fundamental mathematics (matrix), homework 2
Class 4: Sensors and actuators, homework 3
Class 5: Mechanisms and kinematics 1 (degree of freedom, link coordinates)
Class 6: Mechanisms and kinematics 2 (coordinate transformation), homework 4
Class 7: Mechanisms and kinematics 3 (forward kinematics)
Class 8: Midterm exam, explanation, summary
Class 9: Mechanisms and kinematics 4 (inverse kinematics)
Class 10: Mechanisms and kinematics 5 (velocity kinematics, Jacobian matrix)
Class 11: Mechanisms and kinematics: exercises, homework 5
Class 12: Statics and exercises
Class 13: Reviews for the final exam
Class 14: Final exam, explanation, summary

【Notes on taking the course】

It is highly advised that a student intended to take this course has already completed linear algebra or similar.

【Standards and rules for grade evaluation】

Test results are 45% midterm exam and 45% final exam, with 10% homework. The final grade will be S for the total score of 90 or higher per 100 full mark, A for the score of 80 to 89, B for the score of 70 to 79, and C for the score of 60 to 69.　E indicates the score of 59 or lower, with no credit given.　If the number of attendances is less than two thirds, the grade is /.

【Textbook】

To be announced

Course of Information and Telecommunication Engineering					
Day	**Period**	**Course Title (Japanese)**	**Course Title (English)**	**Professor**	**Credit**
TBD	**TBD**	**基礎設計学1**	**Machine Design 1**	**Yoshio Yamamoto**	**2**

【Course theme】

Obtaining fundamental and practical knowledge of machine design

【Keywords】

Machine elements, strength, stress, strain, elasticity, Hooke's law

【Summary】

Objective of machine design is to develop artifacts which are useful to humans but do not naturally exist. This is a kind of task which requires an engineer to exhibit high level of creativity. A machine in general cannot be built just by assembling different components, and in that way the machine will never produce an expected result. The engineer has to possess a clear vision of what kind of machine needs to be built, and determine basic specifications, necessary mechanisms and structures throughout the design process. This course covers topics and knowledge which are considered fundamental and important from the machine design point of view. More specifically, students are expected to learn a variety of forms, mechanisms, materials, machine tools and machine elements. The most important knowledge which should be fully captured is how to analyze the relationship between stress and strain resulted in concerned parts when external forces and moments are given. Once the knowledge is obtained, students are expected to learn how to apply the knowledge to practical design problems such as screw threads.

【Attainment target for this course】

(1) Understand the essence of machine design and obtain related fundamental knowledge.
(2) Understand the concepts of rigidity and strength of machine as well as the relationship between stress and strain by about 80%.
(3) Understand basic knowledge about machine elements and how to do their design calculations by about 80%

【Schedule】

The syllabus details for this course must be printed by each student (or in PDF format).
Class 1: Introduction to machine design (definition and what to learn)
Class 2: Dimensional tolerance and fit 1
Class 3: Dimensional tolerance and fit 2
Class 4: Force and strength 1
Class 5: Force and strength 2
Class 6: Force and strength 3
Class 7: Exercises 1
Class 8: Midterm exam, explanation, summary
Class 9: Machine material
Class 10: Machine operation 1
Class 11: Machine operation 2
Class 12: Basics of screw thread
Class 13: Exercises 2
Class 14: Final exam, explanation, summary

【Standards and rules for grade evaluation】

Test results are 45% midterm exam and 45% final exam, with 10% homework. The final grade will be S for the total score of 90 or higher per 100 full mark, A for the score of 80 to 89, B for the score of 70 to 79, and C for the score of 60 to 69. E indicates the score of 59 or lower, with no credit given. If the number of attendances is less than two thirds, the grade is /.

【Notes on taking the course】

It is highly advised that a student intended to take this course has already completed linear algebra and calculus.

【Textbook】

To be announced

Undergraduate School of Engineering					
Day	**Period**	**Course Title (Japanese)**	**Course Title (English)**	**Professor**	**Credit**
TBD	**TBD**	**電気自動車工学**	**Electric Vehicle Engineering**	**Toshiyuki Sakamoto**	**2**

【Summary】
Electric vehicles and hybrid electric vehicles have been in practical use as vehicles that are expected to improve energy efficiency in response to environmental and energy problems.
In this lecture, the representative power train system configuration and the elemental technologies used in it are explained in the lecture. The lecture explains the concept of control to use energy more efficiently and the technology used. The lecture also explains control technologies of various motor systems such as power drive circuits of electric vehicles, induction motors constituting power trains, permanent magnet synchronous motors, and switched reluctance motors. The control technology of battery and ultracapacitor with the storage function of electric energy is also mentioned. In this course, the lecture explains the basic theory used in these subjects, of course, students will surely deepen their understanding through basic exercises. Finally, the HEV/EV system is modeled, and the energy utilization efficiency is obtained through simulation to deepen the understanding of the high efficiency energy utilization technology from the micro viewpoint. Electronic devices now account for 70% of automobiles. In the future society, it is essential to have knowledge of electrical technology. Unlike machines, electricity is not real. It is necessary to calculate electricity properly and understand it. For electrical circuit calculation, it is necessary to have knowledge of determinant, analytical geometry to obtain motion of magnetic space, Fourier series to calculate current control waveform and higher harmonic waveform, and calculus, differential equation and Laplace transform for transient phenomena. Lets take advantage of this opportunity to learn basic theories and m ake a big leap forward in society.

【Target of Lesson】
Power skills developed in the lesson
1) Ability to challenge and achieve
2) Expertise to respond to changing times
3) Basic knowledge and understanding of power machines, and applied practical skills for power machines

【Schedule】
Lesson 1: Guidance
Lesson 2: Power Electronics Technology and Power Semiconductors
Lesson 3: Power Electronics Circuit
Lesson 4: Power Electronics Circuit Design
Lesson 5: Power conversion circuit
Lesson 6: Choppers and Inverters for Electric Vehicles
Lesson 7: Electric Vehicle Motor
Lesson 8: Motor Drive System for Motor Vehicles
Lesson 9: Power Conversion System
Lesson 10: Electronic Components and Degraded Failure
Lesson 11: Basic Electric Technology for Electric Motor Vehicles
Lesson 12: Application of Electric Technology to Electric Motor Vehicles
Lesson 13: Application of Electric Technology to Electric Motor Vehicles
Lesson 14: General Exercises

【Preparation and review】
Review: Submit the review task instructed in the class.
Pre-work: Investigate the pre-work instructed in the class.

【Notes】
To understand electric vehicle technology, you need to know electric circuits well. It is not enough simply to attend classes and listen to lectures, or to read books and literature. You need to solve the calculation formula with paper and pencil and understand it step by step. You need to take the time to prepare and review. If you make an effort now, you will have knowledge that you can use for life. It is a time when manufacturing is going

overseas and the future is uncertain, but if you acquire a solid technological backbone in your student days, you will have the basic ability to survive no matter what field you are in and no matter the times change. Lets do our best to survive tomorrow.

【Standards and methods of evaluation】
Standards and methods of evaluation is as follows.
Normal point (Class attitude, etc.): 10%; Small test subject: 20%; Period end test: 70%
For evaluation, S is given for scores of 90 or more, A is given for scores of 80 or more under 90, B is given for scores of 70 or more under 80, and C is given for scores of 70 or more under 90.

【Goal】
(1) Basic knowledge of electric vehicle systems
The system outlines of EV and HEV is known, and the basic technology used there is outlined.

(2) Introduction to Electric Technology for Electric Vehicles
Students shall understand of the electrical mathematical theory that provides an introduction to the electrical technologies used in electric vehicles.

(3) Electric technology foundation for electric vehicles
Electric mathematics, electric theory, alternating current theory, and circuit theory which are the basis of electrical engineering used for electric rolling stock are understood.

(4) Application of electric technology to electric vehicles
Understand AC circuit, AC waveform and strain waveform, transient response, and three-phase AC as applied technology of electrical engineering used for electric rolling stock.

(5) Motor control technology for electric vehicles
Understand the motor system and motor control technology used in electric vehicles.

Undergraduate School of Engineering					
Day	**Period**	**Course Title (Japanese)**	**Course Title (English)**	**Professor**	**Credit**
TBD	**TBD**	**高速空気力学**	**High-Speed Aerodynamics**	**Toshiharu Mizukaki, Daiki Numata, Hideyuki Horisawa**	**2**

【Key Words and Theme】
Keyword: transonic, supersonic, hypersonic, shock waves, supersonic nozzle
Theme: Compressible fluid dynamics and related phenomena

【Skills】
This lecture intends to grow up the skills shown below;
the skill to understand high-speed aerodynamics,
the skill to compute fundamental characteristics of supersonic flow, and
the skill to explain own research theme logically in English

【Summary】
There is no exaggeration to say that the development of aerospace engineering is own to aerodynamics. Due to the nature of compressible fluids, shock waves have been paid a special interest with increasing of the speed of aircraft. Therefore, the research on shock waves has been acting crucial role to make historical events true, such as the manned-supersonic flight and the manned-re-entry from outer space. Generally, shock waves appear around the objects flying at supersonic speeds while an energy release in a minute region generates shock waves too. Then, we do not only need the view of aerodynamics but also that of high-speed dynamics to recognize physics of shock waves. In this course, from the view of high-speed dynamics, we will acquire the characteristics of shock waves, and the involvement with the history of science and technology. Simultaneously, the practical training of technical English will be done.

【Achievements】
Students who are pursuing the class would be expected to achieve the proficiency shown below;
to understand the fundamental theories of high-speed aerodynamics,
to understand the fundamental mechanism of flight, and
to perform presentation on own research topic.

【Schedule】
1st Lect. Orientation
2nd Lect. TRANSONIC and SUPERSONIC FLOWS (1)
3rd Lect. TRANSONIC and SUPERSONIC FLOWS (2)
4th Lect. TRANSONIC and SUPERSONIC FLOWS (3)
5th Lect. TRANSONIC and SUPERSONIC FLOWS (4)
6th Lect. TRANSONIC and SUPERSONIC FLOWS (5)
7th Lect. TRANSONIC AIRCRAFT CONFIGURATION (1)
8th Lect. TRANSONIC AIRCRAFT CONFIGURATION (2)
9th Lect. TRANSONIC AIRCRAFT CONFIGURATION (3)
10th Lect. TRANSONIC AIRCRAFT CONFIGURATION (4)
11th Lect. TRANSONIC AIRCRAFT CONFIGURATION (5)
12th Lect. PRESENTATION on RESEARCH TOPCS by students (1)
13th Lect. PRESENTATION on RESEARCH TOPCS by students (2)
14th Lect. PRESENTATION on RESEARCH TOPCS by students (3)

From 2nd to 11th lecture;

The attendants must need more than 2hrs each for preparing and reviewing this lecture.

From 12th to 14th lecture;

The attendants are requested to present his/her research topic. If the attendants would be a foreign student, the presentation can include introduction of his/her home country. Duration of the presentation need to be 20 min. expect question and comments.

【Evaluation】

Midterm report (30%), Final report (30%), Presentation (20%), and others (20%)

【Textbooks】

J.D. Anderson: Modern Compressible Flow: with Historical Perspective, McGraw-Hill.
H. W. Liepmann and R. Roshko, Elements of Gas Dynamics, Dover Publications

【Other Materials】

References and corresponding literature will be provided as need arises.

【Contact information】

Questions and discussion are welcome at any time. But you would be better to make appointment before your visiting.

Undergraduate School of Engineering					
Day	**Period**	**Course Title (Japanese)**	**Course Title (English)**	**Professor**	**Credit**
TBD	**TBD**	エンジン工学	**Engine Engineering**	**Zhili Chen**	**2**

【Summary】

This course will provide students with gasoline engines and diesel engines and basic theories such as cycle theory, combustion, efficiency, loss, and environmental problems from the viewpoint of thermodynamics. Students will apply engineering fundamentals (primarily thermodynamics, chemistry and information processing) to the analysis and interpretation of cycles of reciprocating internal combustion engines. Also, the factors governing engine emissions will be discussed.

【Schedule】

1. Introduction
2. Work, output, thermal efficiency, mean effective pressure of engines
3. Air cycle and fuel air cycle
4. Thermal efficiency of fuel air cycle
5. Theoretical air amount of fuels, equivalence ratio, excess air ratio
6. Engine fuels and lower heating value
7. Engine combustion calculation # 1: working gas composition
8. Engine combustion calculation # 2: Specific heat of combustion gas
9. Engine combustion calculation # 3: Average temperature of combustion gas
10. NOx production mechanism and concentration estimation of engines
11. Air-fuel mixture formation and combustion of compression ignition (diesel) engines
12. Soot formation and oxidation mechanism of diesel engines
13. Flame propagation speed of spark ignition engines
14. Additional topics (flexible), future of engines

【Main reading】

John B Heywood, Internal Combustion Engine Fundamentals, McGraw-Hill Book Company, 2004.

【Grade Weightings】

Quiz 50% (There will be 12 quizzes during class)

Final exam 50%

【Goal】

Students will be evaluated on their ability to apply engine fundamentals studied in classes to the analysis of internal combustion engines. Assessment will include interpretations of technical terms, calculations such as composition, specific heat and temperature of working gas, and applications of numerical tool(Excel).

Undergraduate School of Engineering					
Day	**Period**	**Course Title (Japanese)**	**Course Title (English)**	**Professor**	**Credit**
TBD	**TBD**	シミュレーション工学	**Numerical Simulation in Engineering**	**Yoko Takakura, Shun Takahashi**	**2**

【Summary】

This course is designed for foreigners learning programing with C language to acquire and develop the knowledge and skills for the basics of the practical engineering numerical simulation.

Recently, numerical simulation has been used as essential tool for engineering field due to the development of the computer performance. The numerical algorithm which is employed as basics of the numerical simulation can be exploited for post processing of experiments and taking analytical solution.

This lecture focuses on the basic algorithms of the numerical simulation with C language for various engineering purposes, such as computational fluid dynamics, structural dynamics and mechanical analysis.

The course aims at developing a wide range of skills:

- Understanding of the basic algorithm, which involves flowchart and structure of program.
- Programming skills, which have a specific focus on variables, functions, and several functions.
- Analytics, which involves understanding of algorithm and solution.
- Exact solution, which includes the error of the numerical solution.

【Methods of assessment】

A measure of classroom participation accounts for 60% of the overall assessment.

Assessment is by coursework (50%), which integrates the following:

- Small questions provided in several weeks
- Several reports provided in lectures

A final exam accounts for 40% of the total credit. A measure of progress and motivation accounts for 10% of the total credit.

【Schedule】

1. Guidance
2. Review of fundamental of programming by C language 1
3. Review of fundamental of programming by C language 2
4. Review of fundamental of programming by C language 3
5. Numerical algorithm for nonlinear equation
6. Numerical algorithm for nonlinear equation
7. Solution for linear equation system
8. Application of lienor equation system
9. Interpolation
10. Numerical integration
11. Initial value problem of ordinal difference equation
12. Introduction of final report
13. Numerical error
14. Final exam

【Main reading】

The supplementary materials are as follows;

Michael T. Heath., Scientific Computing: An Introductory Survey, Revised Second Edition, November 14, 2018.

【Goal】

- Understanding of the basic algorithm, which involves flowchart and structure of program.
- Programming skills, which have a specific focus on variables, functions, and several functions.
- Analytics, which involves understanding of algorithm and solution.
- Exact solution, which includes the error of the numerical solution.