

## Frontier in Civil Engineering (2.0credits) (土木工学のフロンティア)

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Course Type	Basic Courses	
Division at course	Master's Course	
Class Format	Lecture	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Spring Semester	1 Spring Semester
Lecturer	Associated Faculty	

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### Course Purpose

The aim of the lecture is to comprehensively examine the framework of civil engineering through the introductions of various research topics, projects and so on which the staff of civil engineering have investigated in recent years.

### Prerequisite Subjects

None in particular.

### Course Topics

1. Guidance2. Frontier of Structural Engineering3. Frontier of Material Engineering4. Frontier of Coastal Engineering5. Frontier of River Engineering6. Frontier of Geotechnical Engineering7. Frontier of Urban and Transportation Planning

### Textbook

None in particular.

### Additional Reading

None in particular.

### Grade Assessment

ReportCredits will be awarded to those students who score 60 or more.Grades are as follows:S:100-90, A:89-80, B:79-70, C:69-60, F:59-0.

### Notes

### Contacting Faculty

Students are encouraged to ask questions in the class

## Civil Engineering and Policies for Developing Countries (2.0credits) (途上国開発特論 )

Course Type	Basic Courses	
Division at course	Master's Course	
Class Format	Lecture	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	Autumn Semester ,every other year	2 Autumn Semester
Lecturer	Kiichiro HAYASHI Professor	Miho IRYO(ASANO) Associate Professor

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### Course Purpose

The objectives of this course is to study various issues including sustainable development, environmental management, international cooperation for better understanding the fundamental knowledge and applied skills on civil engineering in developing countries. Then comprehensive way of thinkgin will be studied.

### Prerequisite Subjects

### Course Topics

Concept of sustainable development; Environment and resource issues in developing countries; International environmental management I (Multilateral Environmental Agreements); International environmental management II (International organizations); International cooperation

### Textbook

Handout will be distributed in the class.

### Additional Reading

It will be assigned in the class if necessary.

### Grade Assessment

Students will be evaluated on reaction papers and written reports. Higher than 60 points in 100 as full mark is passed.

### Notes

### Contacting Faculty

in the class and/or by e-mail.

Course Type	Basic Courses	
Division at course	Master's Course	
Class Format	Lecture	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	Autumn Semester ,every other year	1 Autumn Semester
Lecturer	Associated Faculty	

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### Course Purpose

The objectives of this course are (1) to study the fundamental knowledge on planning, design, construction and maintenance of infrastructure in Japan, as well as developing countries; (2) to survey various issues in civil engineering, including the environmental problems and recent development of regional disaster mitigation activities.

### Prerequisite Subjects

None in particular

### Course Topics

1. Introduction to disaster risk assessment
2. Water resources and river basin management
3. Coastal zone management
4. Infrastructure development under aid programs
5. Infrastructure projects in developing countries

### Textbook

None in particular

### Additional Reading

None in particular

### Grade Assessment

Report

Credits will be awarded to those students who score 60 or more.

Grades are as follows:

S:100-90, A:89-80, B:79-70, C:69-60, F:59-0.

### Notes

### Contacting Faculty

Students are encouraged to ask questions in the class.

## English Communication in Environmental Issues (2.0credits) (環境コミュニケーション)

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Course Type	Basic Courses	
Division at course	Master's Course	
Class Format	Lecture	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Spring Semester	1 Spring Semester
Lecturer	Miho IRYO(ASANO) Associate Professor	CHUN Sohyun Lecturer

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### Course Purpose

Develop ability to learn and think about environmental problems in English, and apply the ability for presenting and discussing one's ideas in English.

### Prerequisite Subjects

### Course Topics

English communication ability is a fundamental requirement for engineers and scientists working in the field of environmental problems, since environmental problems are not unique to any one country. In this course students will be assigned specific subjects concerning environmental problems and will be required to study the assigned subjects deeply, and then present and discuss the studied subjects in class in English.

### Contents

1. Orientation (Presentation and discussion skills)
2. Group discussion and presentation (about environmental issues in home country)
3. Discussion and role-play (about consensus building for environmental issues)
4. Group debate
5. Group discussion and presentation (about environmental issues which the group members are interested in)

### Textbook

### Additional Reading

### Grade Assessment

Students will be evaluated by the style and contents of their presentations, contribution to discussions in class, and term report. Those with less than 80% attendance in the class will not be evaluated.

### Notes

### Contacting Faculty

Instructor's Contact: Tel Ext. 6044 iryo@nagoya-u.jp

Course Type	Basic Courses		
Division at course	Master's Course		
Class Format	Lecture		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	1 Autumn Semester	1 Autumn Semester	
Lecturer	Hiroki tanikawa Professor	Takayuki MORIKAWA Professor	Keijiro Okuoka Assistant Professor

### Course Purpose

The objective of the course is to provide students with several definitions, views, interpretations, and analyses on the notion of sustainability.

### Prerequisite Subjects

Low Carbon Society, Water and Waste Management Policies, etc.

### Course Topics

The lectures are to be given by several lecturers that may include external guest speakers. Sustainability covers broad areas. It is therefore inevitable that the course consists of various topics. The course tries to clarify the topics from three viewpoints, namely: 1) Society and/or social sciences, 2) Observation and data by natural sciences, and 3) Urban and spatial perspective. One common element that should be noted here is "safety".

### Contents

1. Orientation
2. What is "Sustainability" and "Sustainable Development"?
3. Sustainable Transport Systems
4. Global Change Monitoring by Remote Sensing
5. Safe Production and Consumption of Chemical Products
6. Creating Urban Green Infrastructure
7. Present Status of Scientific Understanding of Global Warming
8. Natural Disasters and the Society: A Case of the 2004 Tsunami and its Effects to Aceh, Indonesia
9. Kosa and Desertification
10. Sustainable Material Use and Low-carbonization Society
11. Open Discussion
12. Open Discussion
13. Open Discussion
14. Report Submission and Wrap-Up Discussion

### Textbook

To be announced in class

### Additional Reading

To be introduced in each lecture

### Grade Assessment

Evaluation is carried out by reports (100%). Students have to attend all lectures as the schedule for the next class will be announced in the previous class. Those with less than 80% attendance in the class will not be evaluated.

### Notes

### Contacting Faculty

Tel No and E-mail address of instructor  
Ext. 3223; tanikawa@nagoya-u.jp

## Seminar on Structural Engineering 1A (2.0credits) (構造工学セミナー1A)

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Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Spring Semester	1 Autumn Semester
Lecturer	Junji KATO Professor	

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### Course Purpose

To understand basic theory of finite element method and continuum mechanics.

### Prerequisite Subjects

Computational Mechanics, Structural Mechanics, Applied Structural Mechanics, Strengths of Structures in Ultimate States, etc.

### Course Topics

1. Finite Element Method:2. Continuum Mechanics:3. Structural Optimization

### Textbook

### Additional Reading

### Grade Assessment

Reports

### Notes

### Contacting Faculty

Questions are welcome during the seminar.

## Seminar on Structural Engineering 1B (2.0credits) (構造工学セミナー1B)

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Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Autumn Semester	1 Spring Semester
Lecturer	Junji KATO Professor	

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### Course Purpose

To understand basic theory of finite element method and continuum mechanics.

### Prerequisite Subjects

Computational Mechanics, Structural Mechanics, Applied Structural Mechanics, Strengths of Structures in Ultimate States, etc.

### Course Topics

1. Finite Element Method:2. Continuum Mechanics:3. Structural Optimization

### Textbook

### Additional Reading

### Grade Assessment

Reports

### Notes

### Contacting Faculty

Questions are welcome during the the seminar.

## Seminar on Structural Engineering 1C (2.0credits) (構造工学セミナー1C)

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Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	2 Spring Semester	2 Autumn Semester
Lecturer	Junji KATO Professor	

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### Course Purpose

To understand basic theory of finite element method and continuum mechanics.

### Prerequisite Subjects

Computational Mechanics, Structural Mechanics, Applied Structural Mechanics, Strengths of Structures in Ultimate States, etc.

### Course Topics

1. Finite Element Method:2. Continuum Mechanics:3. Structural Optimization

### Textbook

### Additional Reading

### Grade Assessment

Reports

### Notes

### Contacting Faculty

Questions are welcome during the seminar.



## Seminar on Structural Engineering 1D (2.0credits) (構造工学セミナー1D)

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Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	2 Autumn Semester	2 Spring Semester
Lecturer	Junji KATO Professor	

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### Course Purpose

To understand basic theory of finite element method and continuum mechanics.

### Prerequisite Subjects

Computational Mechanics, Structural Mechanics, Applied Structural Mechanics, Strengths of Structures in Ultimate States, etc.

### Course Topics

1. Finite Element Method:2. Continuum Mechanics:3. Structural Optimization

### Textbook

### Additional Reading

### Grade Assessment

Reports

### Notes

### Contacting Faculty

Questions are welcome during the seminar.

Course Type	Specialized Courses		
Division at course	Master's Course		
Class Format	Seminar		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	1 Spring Semester	1 Autumn Semester	
Lecturer	Hikaru NAKAMURA Professor	Yoshihito Yamamoto Associate Professor	Taito Miura Assistant Professor

### Course Purpose

The purpose of these practices is to acquire basic and applied knowledge for understanding the properties of cement, cement paste and concrete and the mechanisms of cement hydration using text book written in English. Furthermore, the participants would be able to get into the total power such as gathering information, relevant technique investigation and presentation skills as going through the presentation.

### Prerequisite Subjects

Material engineering, concrete structure No.1,2

### Course Topics

#### 1. Property of Cement

Type of cement

Crystal structure of cement

#### 2. Property of Cement paste

Hydration process of each cement type

Micro-structure of cement hydrates

### Textbook

Cement Chemistry 2nd edition H.F.W. Taylor, Thomas Telford

### Additional Reading

No notification

### Grade Assessment

Considering result of Presentation and Oral examination, the acceptance score must be more than 60 points. In this regards, the participant who is absent without notification is more than a half of class he/she isn't evaluation objective.

<graduate school: enrolled student since H23>

10090pts: S, 8980 pts: A, 7970 pts: B, 6960 pts: C, less than 59 pts: F

### Notes

### Contacting Faculty

## Seminar on Materials and Structural Design 1B (2.0credits) (材料・形態学セミナー1B)

Course Type	Specialized Courses		
Division at course	Master's Course		
Class Format	Seminar		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	1 Autumn Semester	1 Spring Semester	
Lecturer	Hikaru NAKAMURA Professor	Yoshihito Yamamoto Associate Professor	Taito Miura Assistant Professor

### Course Purpose

The purpose of these practices is to acquire basic and applied knowledge for understanding the properties of cement, cement paste and concrete and the mechanisms of cement hydration using text book written in English. Furthermore, the participants would be able to get into the total power such as gathering information, relevant technique investigation and presentation skills as going through the presentation.

### Prerequisite Subjects

Material engineering, concrete structure No.1,2

### Course Topics

#### 1. Property of Cement

Type of cement

Crystal structure of cement

#### 2. Property of Cement paste

Hydration process of each cement type

Micro-structure of cement hydrates

### Textbook

Cement Chemistry 2nd edition H.F.W. Taylor, Thomas Telford

### Additional Reading

No notification

### Grade Assessment

Considering result of Presentation and Oral examination, the acceptance score must be more than 60 points. In this regards, the participant who is absent without notification is more than a half of class he/she isn't evaluation objective.

<graduate school: enrolled student since H23>

10090pts: S, 8980 pts: A, 7970 pts: B, 6960 pts: C, less than 59 pts: F

### Notes

### Contacting Faculty

Course Type	Specialized Courses		
Division at course	Master's Course		
Class Format	Seminar		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	2 Spring Semester	2 Autumn Semester	
Lecturer	Hikaru NAKAMURA Professor	Yoshihito Yamamoto Associate Professor	Taito Miura Assistant Professor

### Course Purpose

The purpose of these practices is to acquire basic and applied knowledge for understanding the properties of cement, cement paste and concrete and the mechanisms of cement hydration using text book written in English. Furthermore, the participants would be able to get into the total power such as gathering information, relevant technique investigation and presentation skills as going through the presentation.

### Prerequisite Subjects

Material engineering, concrete structure No.1,2

### Course Topics

#### 1. Property of Cement

Type of cement

Crystal structure of cement

#### 2. Property of Cement paste

Hydration process of each cement type

Micro-structure of cement hydrates

### Textbook

Cement Chemistry 2nd edition H.F.W. Taylor, Thomas Telford

### Additional Reading

No notification

### Grade Assessment

Considering result of Presentation and Oral examination, the acceptance score must be more than 60 points. In this regards, the participant who is absent without notification is more than a half of class he/she isn't evaluation objective.

<graduate school: enrolled student since H23>

10090pts: S, 8980 pts: A, 7970 pts: B, 6960 pts: C, less than 59 pts: F

### Notes

### Contacting Faculty

## Seminar on Materials and Structural Design 1D (2.0credits) (材料・形態学セミナー1D)

Course Type	Specialized Courses		
Division at course	Master's Course		
Class Format	Seminar		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	2 Autumn Semester	2 Spring Semester	
Lecturer	Hikaru NAKAMURA Professor	Yoshihito Yamamoto Associate Professor	Taito Miura Assistant Professor

### Course Purpose

The purpose of these practices is to acquire basic and applied knowledge for understanding the properties of cement, cement paste and concrete and the mechanisms of cement hydration using text book written in English. Furthermore, the participants would be able to get into the total power such as gathering information, relevant technique investigation and presentation skills as going through the presentation.

### Prerequisite Subjects

Material engineering, concrete structure No.1,2

### Course Topics

#### 1. Property of Cement

Type of cement

Crystal structure of cement

#### 2. Property of Cement paste

Hydration process of each cement type

Micro-structure of cement hydrates

### Textbook

Cement Chemistry 2nd edition H.F.W. Taylor, Thomas Telford

### Additional Reading

No notification

### Grade Assessment

Considering result of Presentation and Oral examination, the acceptance score must be more than 60 points. In this regards, the participant who is absent without notification is more than a half of class he/she isn't evaluation objective.

<graduate school: enrolled student since H23>

10090pts: S, 8980 pts: A, 7970 pts: B, 6960 pts: C, less than 59 pts: F

### Notes

### Contacting Faculty

## Seminar on Conservation Engineering of River Basins 1A (2.0credits) (流域保全学セミナー1A)

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Course Type	Specialized Courses		
Division at course	Master's Course		
Class Format	Seminar		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	1 Spring Semester	1 Autumn Semester	
Lecturer	Yuji Toda Professor	Ryota TSUBAKI Associate Professor	OBANAMakiko Assistant Professor

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### Course Purpose

Basic and advanced research on fluvial hydraulics and hydrology and its relation to the ecosystem will be reviewed and discussed. Research methods will also be reviewed and discussed.

### Prerequisite Subjects

Hydrology and River Engineering, Open-channel hydraulics, Fundamental of Hydrodynamics with Exercises, Human activities and environment

### Course Topics

1. Concept of improvement/management of river and basin
2. Structure of river/basin landscape
3. Runoff and sediment yield
4. Fluvial process
5. Habitat evaluation method

### Textbook

Directed as needed

### Additional Reading

Directed as needed

### Grade Assessment

Presentation and report

### Notes

Contacting Faculty

## Seminar on Conservation Engineering of River Basins 1B (2.0credits) (流域保全学セミナー1B)

Course Type	Specialized Courses		
Division at course	Master's Course		
Class Format	Seminar		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	1 Autumn Semester	1 Spring Semester	
Lecturer	Yuji Toda Professor	Ryota TSUBAKI Associate Professor	OBANAMakiko Assistant Professor

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### Course Purpose

Basic and advanced research on fluvial hydraulics and hydrology and its relation to the ecosystem will be reviewed and discussed. Research methods will also be reviewed and discussed.

### Prerequisite Subjects

Hydrology and River Engineering, Open-channel hydraulics, Fundamental of Hydrodynamics with Exercises, Human activities and environment

### Course Topics

1. Concept of improvement/management of river and basin
2. Structure of river/basin landscape
3. Runoff and sediment yield
4. Fluvial process
5. Habitat evaluation method

### Textbook

Directed as needed

### Additional Reading

Directed as needed

### Grade Assessment

Presentation and report

### Notes

### Contacting Faculty

## Seminar on Conservation Engineering of River Basins 1C (2.0credits) (流域保全学セミナー1C)

Course Type	Specialized Courses		
Division at course	Master's Course		
Class Format	Seminar		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	2 Spring Semester	2 Autumn Semester	
Lecturer	Yuji Toda Professor	Ryota TSUBAKI Associate Professor	OBANAMakiko Assistant Professor

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### Course Purpose

Basic and advanced research on fluvial hydraulics and hydrology and its relation to the ecosystem will be reviewed and discussed. Research methods will also be reviewed and discussed.

### Prerequisite Subjects

Hydrology and River Engineering, Open-channel hydraulics, Fundamental of Hydrodynamics with Exercises, Human activities and environment

### Course Topics

1. Concept of improvement/management of river and basin
2. Structure of river/basin landscape
3. Runoff and sediment yield
4. Fluvial process
5. Habitat evaluation method

### Textbook

Directed as needed

### Additional Reading

Directed as needed

### Grade Assessment

Presentation and report

### Notes

Contacting Faculty



## Seminar on Conservation Engineering of River Basins 1D (2.0credits) (流域保全学セミナー1D)

Course Type	Specialized Courses		
Division at course	Master's Course		
Class Format	Seminar		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	2 Autumn Semester	2 Spring Semester	
Lecturer	Yuji Toda Professor	Ryota TSUBAKI Associate Professor	OBANAMakiko Assistant Professor

### Course Purpose

Basic and advanced research on fluvial hydraulics and hydrology and its relation to the ecosystem will be reviewed and discussed. Research methods will also be reviewed and discussed.

### Prerequisite Subjects

Hydrology and River Engineering, Open-channel hydraulics, Fundamental of Hydrodynamics with Exercises, Human activities and environment

### Course Topics

1. Concept of improvement/management of river and basin
2. Structure of river/basin landscape
3. Runoff and sediment yield
4. Fluvial process
5. Habitat evaluation method

### Textbook

Directed as needed

### Additional Reading

Directed as needed

### Grade Assessment

Presentation and report

### Notes

Contacting Faculty

## Seminar on Coastal and Maritime Engineering 1A (2.0credits) (海岸・海洋工学セミナー1A)

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Course Type	Specialized Courses		
Division at course	Master's Course		
Class Format	Seminar		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	1 Spring Semester	1 Autumn Semester	
Lecturer	norimi mizutani Professor	Tomoaki NAKAMURA Associate Professor	YonghwanCHO Assistant Professor

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### Course Purpose

The aim of this course is to review and discuss refereed journal papers in order to understand physical processes on coastal and ocean engineering.

### Course objectives:

Students will be able to

1. explain what theoretical, experimental, and numerical methods used in coastal and ocean engineering are
2. understand state-of-the-art research in coastal and ocean engineering

### Prerequisite Subjects

### Course Topics

Presentation and discussion on a refereed journal paper on coastal and ocean engineering

### Textbook

Students will select refereed journal papers closely related to their research topic

### Additional Reading

Not directed

### Grade Assessment

Presentation and discussion

### Notes

### Contacting Faculty

Prof. Mizutani (ext. 4630, [mizutani@civil.nagoya-u.ac.jp](mailto:mizutani@civil.nagoya-u.ac.jp)), Assoc. Prof. Nakamura (ext. 4632, [tnakamura@nagoya-u.jp](mailto:tnakamura@nagoya-u.jp)), Assist. Prof. Cho (ext. 4634, [yhcho@civil.nagoya-u.ac.jp](mailto:yhcho@civil.nagoya-u.ac.jp))

## Seminar on Coastal and Maritime Engineering 1B (2.0credits) (海岸・海洋工学セミナー1B)

Course Type	Specialized Courses		
Division at course	Master's Course		
Class Format	Seminar		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	1 Autumn Semester	1 Spring Semester	
Lecturer	norimi mizutani Professor	Tomoaki NAKAMURA Associate Professor	YonghwanCHO Assistant Professor

### Course Purpose

The aim of this course is to review and discuss refereed journal papers in order to understand physical processes on coastal and ocean engineering.

### Course objectives:

Students will be able to

1. explain what theoretical, experimental, and numerical methods used in coastal and ocean engineering are
2. understand state-of-the-art research in coastal and ocean engineering

### Prerequisite Subjects

Advanced Fluvial and Coastal Hydrodynamics, Advanced Coastal and Offshore Engineering, Advanced Work in Coastal and Offshore Engineering

### Course Topics

Presentation and discussion on a refereed journal paper on coastal and ocean engineering

### Textbook

Students will select refereed journal papers closely related to their research topic

### Additional Reading

Not directed

### Grade Assessment

Presentation and discussion

### Notes

### Contacting Faculty

Prof. Mizutani (ext. 4630, [mizutani@civil.nagoya-u.ac.jp](mailto:mizutani@civil.nagoya-u.ac.jp)), Assoc. Prof. Nakamura (ext. 4632, [tnakamura@nagoya-u.jp](mailto:tnakamura@nagoya-u.jp)), Assist. Prof. Cho (ext. 4634, [yhcho@civil.nagoya-u.ac.jp](mailto:yhcho@civil.nagoya-u.ac.jp))

## Seminar on Coastal and Maritime Engineering 1C (2.0credits) (海岸・海洋工学セミナー1C)

Course Type	Specialized Courses		
Division at course	Master's Course		
Class Format	Seminar		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	2 Spring Semester	2 Autumn Semester	
Lecturer	norimi mizutani Professor	Tomoaki NAKAMURA Associate Professor	YonghwanCHO Assistant Professor

### Course Purpose

The aim of this course is to review and discuss refereed journal papers in order to understand physical processes on coastal and ocean engineering.

### Course objectives:

Students will be able to

1. explain what theoretical, experimental, and numerical methods used in coastal and ocean engineering are
2. understand state-of-the-art research in coastal and ocean engineering

### Prerequisite Subjects

Advanced Fluvial and Coastal Hydrodynamics, Advanced Coastal and Offshore Engineering, Advanced Work in Coastal and Offshore Engineering

### Course Topics

Presentation and discussion on a refereed journal paper on coastal and ocean engineering

### Textbook

Students will select refereed journal papers closely related to their research topic

### Additional Reading

Not directed

### Grade Assessment

Presentation and discussion

### Notes

### Contacting Faculty

Prof. Mizutani (ext. 4630, [mizutani@civil.nagoya-u.ac.jp](mailto:mizutani@civil.nagoya-u.ac.jp)), Assoc. Prof. Nakamura (ext. 4632, [tnakamura@nagoya-u.jp](mailto:tnakamura@nagoya-u.jp)), Assist. Prof. Cho (ext. 4634, [yhcho@civil.nagoya-u.ac.jp](mailto:yhcho@civil.nagoya-u.ac.jp))

## Seminar on Coastal and Maritime Engineering 1D (2.0credits) (海岸・海洋工学セミナー1D)

Course Type	Specialized Courses		
Division at course	Master's Course		
Class Format	Seminar		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	2 Autumn Semester	2 Spring Semester	
Lecturer	norimi mizutani Professor	Tomoaki NAKAMURA Associate Professor	YonghwanCHO Assistant Professor

### Course Purpose

The aim of this course is to review and discuss refereed journal papers in order to understand physical processes on coastal and ocean engineering.

### Course objectives:

Students will be able to

1. explain what theoretical, experimental, and numerical methods used in coastal and ocean engineering are
2. understand state-of-the-art research in coastal and ocean engineering

### Prerequisite Subjects

Advanced Fluvial and Coastal Hydrodynamics, Advanced Coastal and Offshore Engineering, Advanced Work in Coastal and Offshore Engineering

### Course Topics

Presentation and discussion on a refereed journal paper on coastal and ocean engineering

### Textbook

Students will select refereed journal papers closely related to their research topic

### Additional Reading

Not directed

### Grade Assessment

Presentation and discussion

### Notes

### Contacting Faculty

Prof. Mizutani (ext. 4630, mizutani@civil.nagoya-u.ac.jp), Assoc. Prof. Nakamura (ext. 4632, tnakamura@nagoya-u.jp), Assist. Prof. Cho (ext. 4634, yhcho@civil.nagoya-u.ac.jp)

## Seminar on Geomaterial Engineering1A (2.0credits) (地盤材料工学セミナー1A)

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Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Spring Semester	1 Autumn Semester
Lecturer	Masaki NAKANO Professor	SAKAI Takayuki Assistant Professor

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### Course Purpose

Understanding of latest knowledge and research tendency on geotechnical engineering and mechanics of geomaterials, students will be able to draw related issue and discuss the solution under related theory as well as to learn reading skill of paper and presentation skill, etc.

### Prerequisite Subjects

Advanced Mechanics of Geomaterials, Advanced Soil Dynamics, Advanced Continuum Mechanics, Advanced Numerical Analysis

### Course Topics

Reading the latest paper on geotechnical engineering and mechanics of geomaterials in turn.

### Textbook

Paper

### Additional Reading

none

### Grade Assessment

Evaluation of presentation, Q&A and discussion in seminar, and 60% or more are accepted.

### Notes

### Contacting Faculty

Send E-mail. Masaki NAKANO: Ex.4622, nakano@civil.nagoya-u.ac.jp Shotaro YAMADA: Ex.4621, s-yamada@civil.nagoya-u.ac.jp Takayuki Sakai: Ex.2734t-sakai@civil.nagoya-u.ac.jp

## Seminar on Geomaterial Engineering1B (2.0credits) (地盤材料工学セミナー1B)

Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Autumn Semester	1 Spring Semester
Lecturer	Masaki NAKANO Professor	SAKAITakayuki Assistant Professor

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### Course Purpose

Understanding of latest knowledge and research tendency on geotechnical engineering and mechanics of geomaterials, students will be able to draw related issue and discuss the solution under related theory as well as to learn reading skill of paper and presentation skill, etc.

### Prerequisite Subjects

Advanced Mechanics of Geomaterials, Advanced Soil Dynamics, Advanced Continuum Mechanics, Advanced Numerical Analysis

### Course Topics

Reading the latest paper on geotechnical engineering and mechanics of geomaterials in turn.

### Textbook

Paper

### Additional Reading

none

### Grade Assessment

Evaluation of presentation, Q&A and discussion in seminar, and 60% or more are accepted.

### Notes

### Contacting Faculty

Send E-mail.Masaki NAKANO: Ex.4622, nakano@civil.nagoya-u.ac.jpShotaro YAMADA: Ex.4621, s-yamada@civil.nagoya-u.ac.jpTakayuki Sakai: Ex.2734t-sakai@civil.nagoya-u.ac.jp

## Seminar on Geomaterial Engineering1C (2.0credits) (地盤材料工学セミナー1C)

Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	2 Spring Semester	2 Autumn Semester
Lecturer	Masaki NAKANO Professor	SAKAITakayuki Assistant Professor

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### Course Purpose

Understanding of latest knowledge and research tendency on geotechnical engineering and mechanics of geomaterials, students will be able to draw related issue and discuss the solution under related theory as well as to learn reading skill of paper and presentation skill, etc.

### Prerequisite Subjects

Advanced Mechanics of Geomaterials, Advanced Soil Dynamics, Advanced Continuum Mechanics, Advanced Numerical Analysis

### Course Topics

Reading the latest paper on geotechnical engineering and mechanics of geomaterials in turn.

### Textbook

Paper

### Additional Reading

none

### Grade Assessment

Evaluation of presentation, Q&A and discussion in seminar, and 60% or more are accepted.

### Notes

### Contacting Faculty

Send E-mail.Masaki NAKANO: Ex.4622, nakano@civil.nagoya-u.ac.jpShotaro YAMADA: Ex.4621, s-yamada@civil.nagoya-u.ac.jpTakayuki Sakai: Ex.2734t-sakai@civil.nagoya-u.ac.jp



## Seminar on Geomaterial Engineering1D (2.0credits) (地盤材料工学セミナー1D)

Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	2 Autumn Semester	2 Spring Semester
Lecturer	Masaki NAKANO Professor	SAKAITakayuki Assistant Professor

### Course Purpose

Understanding of latest knowledge and research tendency on geotechnical engineering and mechanics of geomaterials, students will be able to draw related issue and discuss the solution under related theory as well as to learn reading skill of paper and presentation skill, etc.

### Prerequisite Subjects

Advanced Mechanics of Geomaterials, Advanced Soil Dynamics, Advanced Continuum Mechanics, Advanced Numerical Analysis

### Course Topics

Reading the latest paper on geotechnical engineering and mechanics of geomaterials in turn.

### Textbook

Paper

### Additional Reading

none

### Grade Assessment

Evaluation of presentation, Q&A and discussion in seminar, and 60% or more are accepted.

### Notes

### Contacting Faculty

Send E-mail.Masaki NAKANO: Ex.4622, nakano@civil.nagoya-u.ac.jpShotaro YAMADA: Ex.4621, s-yamada@civil.nagoya-u.ac.jpTakayuki Sakai: Ex.2734t-sakai@civil.nagoya-u.ac.jp

## Seminar on Disaster Prevention and Safety Engineering 1A (2.0credits) (国土防災安全工学セミナー1A)

Course Type	Specialized Courses		
Division at course	Master's Course		
Class Format	Seminar		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	1 Spring Semester	1 Autumn Semester	
Lecturer	Toshihiro NODA Professor	Kentaro NAKAI Associate Professor	YOSHIKAWA Takahiro Assistant Professor

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Course Purpose

Prerequisite Subjects

Course Topics

Textbook

Additional Reading

Grade Assessment

Notes

Contacting Faculty

## Seminar on Disaster Prevention and Safety Engineering 1B (2.0credits) (国土防災安全工学セミナー1B)

Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Autumn Semester	1 Spring Semester
Lecturer	Toshihiro NODA Professor	Kentaro NAKAI Associate Professor YOSHIKAWA Takahiro Assistant Professor

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Course Purpose

Prerequisite Subjects

Course Topics

Textbook

Additional Reading

Grade Assessment

Notes

Contacting Faculty

## Seminar on Disaster Prevention and Safety Engineering 1C (2.0credits) (国土防災安全工学セミナー1C)

Course Type	Specialized Courses		
Division at course	Master's Course		
Class Format	Seminar		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	2 Spring Semester	2 Autumn Semester	
Lecturer	Toshihiro NODA Professor	Kentaro NAKAI Associate Professor	YOSHIKAWA Takahiro Assistant Professor

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Course Purpose

Prerequisite Subjects

Course Topics

Textbook

Additional Reading

Grade Assessment

Notes

Contacting Faculty

## Seminar on Disaster Prevention and Safety Engineering 1D (2.0credits) (国土防災安全工学セミナー1D)

Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	2 Autumn Semester	2 Spring Semester
Lecturer	Toshihiro NODA Professor	Kentaro NAKAI Associate Professor YOSHIKAWA Takahiro Assistant Professor

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Course Purpose

Prerequisite Subjects

Course Topics

Textbook

Additional Reading

Grade Assessment

Notes

Contacting Faculty

## Seminar on Maintenance of Civil Structures 1A (2.0credits) (社会基盤維持管理学セミナー1A)

Course Type	Specialized Courses		
Division at course	Master's Course		
Class Format	Seminar		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	1 Spring Semester	1 Autumn Semester	
Lecturer	KazuoTATEISHI Professor	Takeshi HANJI Associate Professor	Masaru Shimizu Assistant Professor

### Course Purpose

Seminar on design concept, maintenance and long-term management method for infrastructures.

### Prerequisite Subjects

bridge engineering, structural engineering, steel structures, structural design

### Course Topics

Reading and discussing some literatures on history, design and maintenance of infrastructures.

### Textbook

Textbooks will be determined by the supervisors.

### Additional Reading

Reference books will be determined by the supervisors.

### Grade Assessment

Evaluation will be comprehensively based on attendance, presentation and discussion among students, etc.

S:100~90, A:89~80, B:79~70, C:69~60, F:59~

### Notes

### Contacting Faculty

## Seminar on Maintenance of Civil Structures 1B (2.0credits) (社会基盤維持管理学セミナー1B)

Course Type	Specialized Courses		
Division at course	Master's Course		
Class Format	Seminar		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	1 Autumn Semester	1 Spring Semester	
Lecturer	KazuoTATEISHI Professor	Takeshi HANJI Associate Professor	Masaru Shimizu Assistant Professor

### Course Purpose

Seminar on design concept, maintenance and long-term management method for infrastructures.

### Prerequisite Subjects

bridge engineering, structural engineering, steel structures, structural design

### Course Topics

Reading and discussing some literatures on history, design and maintenance of infrastructures.

### Textbook

Textbooks will be determined by the supervisors.

### Additional Reading

Reference books will be determined by the supervisors.

### Grade Assessment

Evaluation will be comprehensively based on attendance, presentation and discussion among students, etc.

S:100~90, A:89~80, B:79~70, C:69~60, F:59~

### Notes

### Contacting Faculty

## Seminar on Maintenance of Civil Structures 1C (2.0credits) (社会基盤維持管理学セミナー1C)

Course Type	Specialized Courses		
Division at course	Master's Course		
Class Format	Seminar		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	2 Spring Semester	2 Autumn Semester	
Lecturer	KazuoTATEISHI Professor	Takeshi HANJI Associate Professor	Masaru Shimizu Assistant Professor

### Course Purpose

Seminar on design concept, maintenance and long-term management method for infrastructures.

### Prerequisite Subjects

bridge engineering, structural engineering, steel structures, structural design

### Course Topics

Reading and discussing some literatures on history, design and maintenance of infrastructures.

### Textbook

Textbooks will be determined by the supervisors.

### Additional Reading

Reference books will be determined by the supervisors.

### Grade Assessment

Evaluation will be comprehensively based on attendance, presentation and discussion among students, etc.

S:100~90, A:89~80, B:79~70, C:69~60, F:59~

### Notes

### Contacting Faculty



## Seminar on Maintenance of Civil Structures 1D (2.0credits) (社会基盤維持管理学セミナー1D)

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Course Type	Specialized Courses		
Division at course	Master's Course		
Class Format	Seminar		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	2 Autumn Semester	2 Spring Semester	
Lecturer	KazuoTATEISHI Professor	Takeshi HANJI Associate Professor	Masaru Shimizu Assistant Professor

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### Course Purpose

Seminar on design concept, maintenance and long-term management method for infrastructures.

### Prerequisite Subjects

bridge engineering, structural engineering, steel structures, structural design

### Course Topics

Reading and discussing some literatures on history, design and maintenance of infrastructures.

### Textbook

Textbooks will be determined by the supervisors.

### Additional Reading

Reference books will be determined by the supervisors.

### Grade Assessment

Evaluation will be comprehensively based on attendance, presentation and discussion among students, etc.

S:100~90, A:89~80, B:79~70, C:69~60, F:59~

### Notes

### Contacting Faculty

## Land Design Seminar 1A (2.0credits) (国土デザイン学セミナー 1 A)

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Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Spring Semester	1 Autumn Semester
Lecturer	NAKAMURASHinichiro Associate Professor	

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### Course Purpose

This seminar aim to cultivate a capacity for understanding and expressiveness related to methodologies to create cultural, safe and secure regional and infrastructure design under the climate change and the aging society, in which technologies, institutions and policy measures are discussed within the scope of regional design, economy and public policy analysis.

### Prerequisite Subjects

Urban and Regional Planning

### Course Topics

Students review and collect the relevant advanced and recent literatures related to methodologies to create cultural, safe and secure region and infrastructure. The results are presented and discussed together with students and the supervisor.

### Textbook

#### Additional Reading

Intergovernmental Panel on Climate Change(IPCC): Fifth Assessment Report (AR5), 2014,  
<http://www.ipcc.ch/index.html>.Maggie Black, Jannet KingThe: Atlas of Water: Mapping the World's Most Critical Resource, University of California Press(2009)

### Grade Assessment

The capacity and positive attitude for discussions and presentations are evaluated.Attendance for all seminars is required.

### Notes

#### Contacting Faculty

Sending e-mail or visiting the supervisor's office.E-mail: [shinichiro@civil.nagoya-u.ac.jp](mailto:shinichiro@civil.nagoya-u.ac.jp)Office: Room 305, Engineering Building No.9

## Land Design Seminar 1B (2.0credits) (国土デザイン学セミナー 1 B)

Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Autumn Semester	1 Spring Semester
Lecturer	NAKAMURASHinichiro Associate Professor	

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### Course Purpose

This seminar aim to cultivate a capacity for understanding and expressiveness related to methodologies to create cultural, safe and secure regional and infrastructure design under the climate change and the aging society, in which technologies, institutions and policy measures are discussed within the scope of regional design, economy and public policy analysis.

### Prerequisite Subjects

Urban and Regional Planning

### Course Topics

Students review and collect the relevant advanced and recent literatures related to methodologies to create cultural, safe and secure region and infrastructure. The results are presented and discussed together with students and the supervisor.

### Textbook

#### Additional Reading

Intergovernmental Panel on Climate Change(IPCC): Fifth Assessment Report (AR5), 2014,  
<http://www.ipcc.ch/index.html>.Maggie Black, Jannet KingThe: Atlas of Water: Mapping the World's Most Critical Resource, University of California Press(2009)

### Grade Assessment

The capacity and positive attitude for discussions and presentations are evaluated.Attendance for all seminars is required.

### Notes

#### Contacting Faculty

Sending e-mail or visiting the supervisor's office.E-mail: [shinichiro@civil.nagoya-u.ac.jp](mailto:shinichiro@civil.nagoya-u.ac.jp)Office: Room 305, Engineering Building No.9

## Land Design Seminar 1C (2.0credits) (国土デザイン学セミナー 1C)

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Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	2 Spring Semester	2 Autumn Semester
Lecturer	NAKAMURASHinichiro Associate Professor	

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### Course Purpose

This seminar aim to cultivate a capacity for understanding and expressiveness related to methodologies to create cultural, safe and secure regional and infrastructure design under the climate change and the aging society, in which technologies, institutions and policy measures are discussed within the scope of regional design, economy and public policy analysis.

### Prerequisite Subjects

Urban and Regional Planning

### Course Topics

Students review and collect the relevant advanced and recent literatures related to methodologies to create cultural, safe and secure region and infrastructure. The results are presented and discussed together with students and the supervisor.

### Textbook

#### Additional Reading

Intergovernmental Panel on Climate Change(IPCC): Fifth Assessment Report (AR5), 2014,  
<http://www.ipcc.ch/index.html>.Maggie Black, Jannet King: The Atlas of Water: Mapping the World's Most Critical Resource, University of California Press(2009)

### Grade Assessment

The capacity and positive attitude for discussions and presentations are evaluated.Attendance for all seminars is required.

### Notes

#### Contacting Faculty

Sending e-mail or visiting the supervisor's office.E-mail: [shinichiro@civil.nagoya-u.ac.jp](mailto:shinichiro@civil.nagoya-u.ac.jp)Office: Room 305, Engineering Building No.9

## Land Design Seminar 1D (2.0credits) (国土デザイン学セミナー 1D)

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Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	2 Autumn Semester	2 Spring Semester
Lecturer	NAKAMURASHinichiro Associate Professor	

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### Course Purpose

This seminar aim to cultivate a capacity for understanding and expressiveness related to methodologies to create cultural, safe and secure regional and infrastructure design under the climate change and the aging society, in which technologies, institutions and policy measures are discussed within the scope of regional design, economy and public policy analysis.

### Prerequisite Subjects

Urban and Regional Planning

### Course Topics

Students review and collect the relevant advanced and recent literatures related to methodologies to create cultural, safe and secure region and infrastructure. The results are presented and discussed together with students and the supervisor.

### Textbook

#### Additional Reading

Intergovernmental Panel on Climate Change(IPCC): Fifth Assessment Report (AR5), 2014,  
<http://www.ipcc.ch/index.html>.Maggie Black, Jannet King: The Atlas of Water: Mapping the World's Most Critical Resource, University of California Press(2009)

### Grade Assessment

The capacity and positive attitude for discussions and presentations are evaluated.Attendance for all seminars is required.

### Notes

#### Contacting Faculty

Sending e-mail or visiting the supervisor's office.E-mail: [shinichiro@civil.nagoya-u.ac.jp](mailto:shinichiro@civil.nagoya-u.ac.jp)Office: Room 305, Engineering Building No.9

## Seminar on Conservation of Geoenvironment 1A (2.0credits) (地圏環境保全学セミナー1A)

Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Spring Semester	1 Autumn Semester
Lecturer	ArataKATAYAMA Professor	

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### Course Purpose

In this class, the students learn how the soil and groundwater pollution occurs and how the pollutants migrate in soil and groundwater, the modelling, the bioremediation technologies and microbial behavior, external electron transfer of microorganisms, waste treatment and management.

Students should be able to explain at least one of the following issues with comprehensive understanding:1.Mechanism of soil and groundwater pollution:2.Fate of pollutants in soil and groundwater:3.Bioremediation technologies and microorganisms:4.External electron transfer and its microbial system:5.Other physical and chemical remediation/recycle technologies and their assessment.

### Prerequisite Subjects

Human activities and the environment, Environmental geotechnology, Sanitary engineering, Social environmental conservation, Soil Science, Hydrology, Microbiology, Chemistry, Mathematics and etc.

### Course Topics

Seminar on the fundamental phenomena in relation to the pollution of soil and ground water: mechanism and modelling of pollutant behavior, bioremediation technologies and microbial behavior, external electron transfer and its microbial system, waste management and environmental risk assessment and etc.

### Textbook

One of the following issues is presented by students with comprehensive understanding by reading more than five papers:1. Mechanism of soil and groundwater pollution:2. Fate of pollutants in soil and groundwater:3. Bioremediation technologies and microorganisms, External electron transfer and its microbial system, 4. hazardous waste treatment, 5. others.

### Additional Reading

n/a

### Grade Assessment

Understanding level, presentation ability, participation to the discussion:Higher than 55 points in 100 as full mark is passed.

### Notes

### Contacting Faculty

## Seminar on Conservation of Geoenvironment 1B (2.0credits) (地圏環境保全学セミナー1B)

Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Autumn Semester	1 Spring Semester
Lecturer	ArataKATAYAMA Professor	

### Course Purpose

In this class, the students learn how the soil and groundwater pollution occurs and how the pollutants migrate in soil and groundwater, the modelling, the bioremediation technologies and microbial behavior, external electron transfer of microorganisms, waste treatment and management.

Students should be able to explain at least one of the following issues with comprehensive understanding:1.Mechanism of soil and groundwater pollution:2.Fate of pollutants in soil and groundwater:3.Bioremediation technologies and microorganisms:4.External electron transfer and its microbial system:5.Other physical and chemical remediation/recycle technologies and their assessment.

### Prerequisite Subjects

Human activities and the environment, Environmental geotechnology, sanitary engineering, Social environmental conservation, microbiology, chemistry, mathematics, Hydrology, Seminar on Conservation of Geoenvironment 1A and etc.

### Course Topics

Seminar on the fundamental phenomena in relation to the pollution of soil and ground water: mechanism and modelling of pollutant behavior, bioremediation technologies and microbial behavior, external electron transfer and its microbial system, waste management and environmental risk assessment and etc.

### Textbook

One of the following issues is presented by students with comprehensive understanding by reading more than five papers:1. Mechanism of soil and groundwater pollution:2. Fate of pollutants in soil and groundwater:3. Bioremediation technologies and microorganisms, 4. hazardous waste treatment, 5. others.

### Additional Reading

### Grade Assessment

Understanding level, presentation ability, participation to the discussion:Higher than 55 points in 100 as full mark is passed

### Notes

### Contacting Faculty

Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	2 Spring Semester	2 Autumn Semester
Lecturer	ArataKATAYAMA Professor	

### Course Purpose

In this class, the students learn how the soil and groundwater pollution occurs and how the pollutants migrate in soil and groundwater, the modelling, the bioremediation technologies and microbial behavior, external electron transfer of microorganisms, waste treatment and management.

Students should be able to explain at least one of the following issues with comprehensive understanding:1.Mechanism of soil and groundwater pollution:2.Fate of pollutants in soil and groundwater:3.Bioremediation technologies and microorganisms:4.External electron transfer and its microbial system:5.Other physical and chemical remediation/recycle technologies and their assessment.

### Prerequisite Subjects

Human activities and the environment, Environmental geotechnology, sanitary engineering, Social environmental conservation, microbiology, chemistry, mathematics, Hydrology, Seminar on Conservation of Geoenvironment 1A, 1B and etc.

### Course Topics

Seminar on the fundamental phenomena in relation to the pollution of soil and ground water: mechanism and modelling of pollutant behavior, bioremediation technologies and microbial behavior, external electron transfer and its microbial system, waste management and environmental risk assessment and etc.

### Textbook

One of the following issues is presented by students with comprehensive understanding by reading more than five papers:1. Mechanism of soil and groundwater pollution:2. Fate of pollutants in soil and groundwater:3. Bioremediation technologies and microorganisms, 4. hazardous waste treatment, 5. others.

### Additional Reading

### Grade Assessment

### Notes

### Contacting Faculty



## Seminar on Conservation of Geoenvironment 1D (2.0credits) (地圏環境保全学セミナー1D)

Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	2 Autumn Semester	2 Spring Semester
Lecturer	ArataKATAYAMA Professor	

### Course Purpose

In this class, the students learn how the soil and groundwater pollution occurs and how the pollutants migrate in soil and groundwater, the modelling, the bioremediation technologies and microbial behavior, external electron transfer of microorganisms, waste treatment and management.

Students should be able to explain at least one of the following issues with comprehensive understanding:1.Mechanism of soil and groundwater pollution:2.Fate of pollutants in soil and groundwater:3.Bioremediation technologies and microorganisms:4.External electron transfer and its microbial system:5.Other physical and chemical remediation/recycle technologies and their assessment.

### Prerequisite Subjects

Human activities and the environment, Environmental geotechnology, sanitary engineering, Social environmental conservation, microbiology, chemistry, mathematics, Hydrology, Seminar on Conservation of Geoenvironment 1A, 1B, 1C and etc.

### Course Topics

Seminar on the fundamental phenomena in relation to the pollution of soil and ground water: mechanism and modelling of pollutant behavior, bioremediation technologies and microbial behavior, external electron transfer and its microbial system, waste management and environmental risk assessment and etc.

### Textbook

One of the following issues is presented by students with comprehensive understanding by reading more than five papers:1. Mechanism of soil and groundwater pollution:2. Fate of pollutants in soil and groundwater:3. Bioremediation technologies and microorganisms, 4. hazardous waste treatment, 5. others.

### Additional Reading

### Grade Assessment

### Notes

### Contacting Faculty

## Global Environmental Cooperation Seminar1A (2.0credits) (国際環境協力セミナー 1 A)

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Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Spring Semester	1 Autumn Semester
Lecturer	Kiichiro HAYASHI Professor	

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### Course Purpose

The objective of the seminar is to study institutions, policies and assessment methods on sustainable development issues in global and local scales. The seminar will develop the basic and applied skills of students to collect and review relevant literatures and to present the results and findings from their own perspectives, in a comprehensive manner.

### Prerequisite Subjects

Civil Engineering and Policies for Developing Countries I,II, Human activities and the environment, Urban Environmental Systems Engineering

### Course Topics

Students are required to study institutions and policies and assessment methods on sustainable development issues from the perspective of environmental system engineering, environmental policy study and environmental economics. Students are required to collect articles and do study by themselves and present and discuss the results of findings with teachers. Also if there is a student who needs English communication, the seminar will be conducted in English.

### Textbook

### Additional Reading

### Grade Assessment

Grading will be made taking into consideration understanding level, presentation ability, participation to the discussion, etc. Students are required to attend all classes. Higher than 60 points in 100 as full mark is passed.

### Notes

### Contacting Faculty

in the class and/or by e-mail.

## Global Environmental Cooperation Seminar1B (2.0credits) (国際環境協力セミナー 1 B)

Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Autumn Semester	1 Spring Semester
Lecturer	Kiichiro HAYASHI Professor	

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### Course Purpose

The objective of the seminar is to study institutions, policies and assessment methods on sustainable development issues in global and local scales. The seminar will develop the basic and applied skills of students to collect and review relevant literatures and to present the results and findings from their own perspectives, in a comprehensive manner.

### Prerequisite Subjects

Civil Engineering and Policies for Developing Countries I, II, Human activities and the environment, Urban Environmental Systems Engineering, Global Environmental Cooperation Seminar1A

### Course Topics

Students are required to study institutions and policies and assessment methods on sustainable development issues from the perspective of environmental system engineering, environmental policy study and environmental economics. Students are required to collect articles and do study by themselves and present and discuss the results of findings with teachers. Also if there is a student who needs English communication, the seminar will be conducted in English.

### Textbook

### Additional Reading

### Grade Assessment

Grading will be made taking into consideration understanding level, presentation ability, participation to the discussion, etc. Students are required to attend all classes. Higher than 60 points in 100 as full mark is passed.

### Notes

### Contacting Faculty

in the class and/or by e-mail.

## Global Environmental Cooperation Seminar1C (2.0credits) (国際環境協力セミナー 1 C)

Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	2 Spring Semester	2 Autumn Semester
Lecturer	Kiichiro HAYASHI Professor	

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### Course Purpose

The objective of the seminar is to study institutions, policies and assessment methods on sustainable development issues in global and local scales. The seminar will develop the basic and applied skills of students to collect and review relevant literatures and to present the results and findings from their own perspectives, in a comprehensive manner.

### Prerequisite Subjects

Civil Engineering and Policies for Developing Countries I, II, Human activities and the environment, Urban Environmental Systems Engineering, Global Environmental Cooperation Seminar1A,1B

### Course Topics

Students are required to study institutions and policies and assessment methods on sustainable development issues from the perspective of environmental system engineering, environmental policy study and environmental economics. Students are required to collect articles and do study by themselves and present and discuss the results of findings with teachers. Also if there is a student who needs English communication, the seminar will be conducted in English.

### Textbook

### Additional Reading

### Grade Assessment

Grading will be made taking into consideration understanding level, presentation ability, participation to the discussion, etc. Students are required to attend all classes. Higher than 60 points in 100 as full mark is passed.

### Notes

### Contacting Faculty

in the class and/or by e-mail.

## Global Environmental Cooperation Seminar1D (2.0credits) (国際環境協力セミナー 1 D)

Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	2 Autumn Semester	2 Spring Semester
Lecturer	Kiichiro HAYASHI Professor	

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### Course Purpose

The objective of the seminar is to study institutions, policies and assessment methods on sustainable development issues in global and local scales. The seminar will develop the basic and applied skills of students to collect and review relevant literatures and to present the results and findings from their own perspectives, in a comprehensive manner.

### Prerequisite Subjects

Civil Engineering and Policies for Developing Countries I, II, Human activities and the environment, Urban Environmental Systems Engineering, Global Environmental Cooperation Seminar1A,1B,1C

### Course Topics

Students are required to study institutions and policies and assessment methods on sustainable development issues from the perspective of environmental system engineering, environmental policy study and environmental economics. Students are required to collect articles and do study by themselves and present and discuss the results of findings with teachers. Also if there is a student who needs English communication, the seminar will be conducted in English.

### Textbook

### Additional Reading

### Grade Assessment

Grading will be made taking into consideration understanding level, presentation ability, participation to the discussion, etc. Students are required to attend all classes. Higher than 60 points in 100 as full mark is passed.

### Notes

### Contacting Faculty

in the class and/or by e-mail.

## Seminar on Environmental Ecology System1A (2.0credits) (環境エコロジーシステムセミナー1A)

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Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Spring Semester	1 Autumn Semester
Lecturer	Toshiyuki YAMAMOTO Professor	Tomio MIWA Associate Professor

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### Course Purpose

Learn travel behavior analysis, transportation planning, transport and environment dynamics, etc. in order to understand policies for environmental sustainability and related issues.

### Prerequisite Subjects

History of City and Civilization, Probability and Statistics, Spatial Planning, Transportation Planning, Infrastructure Planning, Urban and National Land Planning

### Course Topics

Discuss on methodological issues concerned with environmentally sustainable transport such as travel behavior analysis, transportation planning, transport environment dynamics, etc. with the aid of reading advanced English literature

### Textbook

To be announced

### Additional Reading

### Grade Assessment

Presentation and active participation to the class (including questions and comments to presentations of other groups)

### Notes

### Contacting Faculty

## Seminar on Environmental Ecology System1B (2.0credits) (環境エコロジーシステムセミナー1B)

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Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Autumn Semester	1 Spring Semester
Lecturer	Toshiyuki YAMAMOTO Professor	Tomio MIWA Associate Professor

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### Course Purpose

Learn travel behavior analysis, transportation planning, transport and environment dynamics, etc. in order to understand policies for environmental sustainability and related issues.

### Prerequisite Subjects

History of City and Civilization, Probability and Statistics, Spatial Planning, Transportation Planning, Infrastructure Planning, Urban and National Land Planning

### Course Topics

Discuss on methodological issues concerned with environmentally sustainable transport such as travel behavior analysis, transportation planning, transport environment dynamics, etc. with the aid of reading advanced English literature

### Textbook

To be announced

### Additional Reading

### Grade Assessment

Presentation and active participation to the class (including questions and comments to presentations of other groups)

### Notes

### Contacting Faculty

## Seminar on Environmental Ecology System1C (2.0credits) (環境エコロジーシステムセミナー1C)

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Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	2 Spring Semester	2 Autumn Semester
Lecturer	Toshiyuki YAMAMOTO Professor	Tomio MIWA Associate Professor

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### Course Purpose

Learn travel behavior analysis, transportation planning, transport and environment dynamics, etc. in order to understand policies for environmental sustainability and related issues.

### Prerequisite Subjects

History of City and Civilization, Probability and Statistics, Spatial Planning, Transportation Planning, Infrastructure Planning, Urban and National Land Planning

### Course Topics

Discuss on methodological issues concerned with environmentally sustainable transport such as travel behavior analysis, transportation planning, transport environment dynamics, etc. with the aid of reading advanced English literature

### Textbook

To be announced

### Additional Reading

### Grade Assessment

Presentation and active participation to the class (including questions and comments to presentations of other groups)

### Notes

### Contacting Faculty



## Seminar on Environmental Ecology System1D (2.0credits) (環境エコロジーシステムセミナー1D)

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Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	2 Autumn Semester	2 Spring Semester
Lecturer	Toshiyuki YAMAMOTO Professor	Tomio MIWA Associate Professor

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### Course Purpose

Learn travel behavior analysis, transportation planning, transport and environment dynamics, etc. in order to understand policies for environmental sustainability and related issues.

### Prerequisite Subjects

History of City and Civilization, Probability and Statistics, Spatial Planning, Transportation Planning, Infrastructure Planning, Urban and National Land Planning

### Course Topics

Discuss on methodological issues concerned with environmentally sustainable transport such as travel behavior analysis, transportation planning, transport environment dynamics, etc. with the aid of reading advanced English literature

### Textbook

To be announced

### Additional Reading

### Grade Assessment

Presentation and active participation to the class (including questions and comments to presentations of other groups)

### Notes

### Contacting Faculty

## Advanced Course in Lifecycle Design of Civil Structures (2.0credits) (社会基盤施設のライフサイクル設計特論)

Course Type	Specialized Courses		
Division at course	Master's Course		
Class Format	Lecture		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	1 Autumn Semester	1 Autumn Semester	
Lecturer	Hikaru NAKAMURA Professor	Junji KATO Professor	Takeshi HANJI Associate Professor

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### Course Purpose

It is the objective of this course to study design method and maintenance of bridge structures in the context of lifecycle management of civil structures. After completing this course, students will be able to:

List different types of structural design methods and explain their differences,

Explain typical design flow of bridge structures, and

Understand current conditions of existing bridges and describe maintenance systems of bridges in Japan.

### Prerequisite Subjects

### Course Topics

(1) To study fundamental theory of reliability-based structural design and to understand structural reliability and different design methods such as the allowable stress method and the limit state design method.

(2) To understand a typical flow of structural design which includes structural planning, selection of structural systems, verification of required performances, lifecycle cost analysis, and maintenance plan, by studying design examples of steel and concrete structures.

(3) To understand current conditions of existing bridges in Japan and to study efficient maintenance systems of bridge structures.

### Textbook

None

### Additional Reading

None

### Grade Assessment

Passing score is 60% or more based on homework assignments and final exam.

### Notes

### Contacting Faculty

Students are encouraged to ask questions in the class.

## Advanced Fluvial and Coastal Hydrodynamics (2.0credits) (水圏力学特論)

Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Lecture	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Spring Semester	1 Spring Semester
Lecturer	Tomoaki NAKAMURA Associate Professor	Ryota TSUBAKI Associate Professor

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### Course Purpose

The aim of this course is to understand physical processes in rivers and oceans. This class will provide advanced theories and technologies applied in the management of rivers and coasts.

### Prerequisite Subjects

Fundamentals of Hydrodynamics, Open Channel Hydraulics, Coastal and Maritime Hydrodynamics, Hydrology and River Engineering, Coastal and Ocean Engineering, River and Coastal Environmental Engineering

### Course Topics

1. Outline of the course
2. Governing equations for incompressible viscous fluid flow
3. Shallow water equations
4. Flow resistances in open-channel flow
5. Long wave theory
6. Shallow water wave theory
7. Wave-averaged conservation equations

### Textbook

Printed documents as needed

### Additional Reading

Directed as needed

### Grade Assessment

Your final grade will be calculated according to reports (first part) and exam (latter part). To pass, students must earn at least 60 points out of 100.

### Notes

### Contacting Faculty

Visiting faculty's lab. or asking by e-mail.

Contact:

Ryota Tsubaki (Extension 4625, [rsubaki@civil.nagoya-u.ac.jp](mailto:rsubaki@civil.nagoya-u.ac.jp))

Tomoaki Nakamura (Extension 4632, [tnakamura@nagoya-u.jp](mailto:tnakamura@nagoya-u.jp))

## Advanced Geotechnical Engineering (2.0credits) (地盤工学特論)

Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Lecture	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Autumn Semester	1 Autumn Semester
Lecturer	Toshihiro NODA Professor	Kentaro NAKAI Associate Professor

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### Course Purpose

Firstly, overview and theoretical background of geotechnical engineering is reviewed.

Then, actual adopted examples to settlement (consolidation) and failure (bearing capacity) problems of the soft grounds are explained.

Moreover, dealing method to various uncertainty of the ground is provided such as safety factor method and reliability design method.

### Prerequisite Subjects

Soil Mechanics, Soil and Foundation Engineering, Geotechnical Engineering, Continuum Mechanics, Advanced Work in Soil Mechanics and Geotechnical Engineering

### Course Topics

- 1 Introduction to geotechnical engineering
- 2 Multi-dimensional consolidation analysis
- 3 Observational method for predicting consolidation settlement (Asaoka method)
- 4 Mean effective stress and bearing capacity
- 5 Undrained bearing capacity ( $u=0$  circular slip surface analysis)

### Textbook

Handout

### Additional Reading

### Grade Assessment

Report

### Notes

### Contacting Faculty

Send E-mail.

Toshihiro NODA: Ex.3833, noda@civil.nagoya-u.ac.jp

Kentaro NAKAI: Ex.5203, nakai@civil.nagoya-u.ac.jp

Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Lecture	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Autumn Semester	1 Autumn Semester
Lecturer	Takayuki MORIKAWA Professor	Toshiyuki YAMAMOTO Professor

### Course Purpose

Understand the roles of infrastructure by learning its economic characteristics, planning procedure, financing and evaluation methods.

### Prerequisite Subjects

Infrastructure Planning

### Course Topics

1. Public economics 1 (social welfare and Pareto optimum)
2. Public economics 2 (consumer's behavior and demand curve)
3. Public economics 3 (producer's behavior and market equilibrium)
4. Public economics 4 (market failure)
5. Public economics 5 (externality)
6. Public economics 6 (public goods 1)
7. Public economics 7 (public goods 2)
8. Introduction to decision making in infrastructure planning
9. Evaluation and decision making 1 (cost-benefit analysis and value of non-market goods)
10. Evaluation and decision making 2 (evaluation methods of non-market goods and utility function)
11. Evaluation and decision making 3 (value of travel time saving and project evaluation)
12. Evaluation and decision making 4 (social welfare function and analytic hierarchy process)
13. Decision making under uncertainty 1 (expected utility theory)
14. Decision making under uncertainty 2 (Bayesian decision making and value of information)
15. Decision making under uncertainty 3 (game theory and dilemma problem)

### Textbook

No textbooks are required. Materials are provided at classes.

### Additional Reading

### Grade Assessment

Examination and report

### Notes

### Contacting Faculty

Ask questions in the class. There are no fixed schedules for office hour. Make an appointment by e-mail or tel.

Morikawa: tel 3564, email morikawa@nagoya-u.jp

Yamamoto: tel 4636, email yamamoto@civil.nagoya-u.ac.jp

## Low Carbon Cities Studies (2.0credits) (低炭素都市学)

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Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Lecture	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Spring Semester	1 Spring Semester
Lecturer	Hiroki tanikawa Professor	Shandl Heinz Visiting Professor

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### Course Purpose

To learn policies and plans and technological and institutional measures to realize low carbon cities with a view to integrating climatic change mitigation in urban development.

### Prerequisite Subjects

Environmental Systems Analysis and Planning

### Course Topics

1. Global Climatic System:2. Mechanisms of Global Warming:3. Climatic Change and Human History:4. Economy, Energy and Environment and IPCC AR: 5. Urban Environmental Management and Planning:6. Human Activities and Energy in Cities:7. Urban Forms, Land Use and Energy:8

### Textbook

### Additional Reading

### Grade Assessment

Examination in class (50%) and submission of reports (50%):

### Notes

### Contacting Faculty

Contact to Prof.Tanikawa

Email [tanikawa@nagoya-u.jp](mailto:tanikawa@nagoya-u.jp)

Ex 3840

## Advanced Numerical Analysis (2.0credits) (数值解析特論)

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Course Type	Specialized Courses		
Division at course	Master's Course		
Class Format	Lecture		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	1 Spring Semester	1 Spring Semester	
Lecturer	Tomio MIWA Associate Professor Tomoaki NAKAMURA Associate Professor	Kentaro NAKAI Associate Professor	Yoshihito Yamamoto Associate Professor

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### Course Purpose

Lecture on basics of numerical analyzing technique

### Prerequisite Subjects

### Course Topics

1. Finite element method
2. Optimization problem
3. Finite difference method
4. Approximate analysis of ordinary differential equation

### Textbook

None. Printed documents as needed.

### Additional Reading

Directed as needed.

### Grade Assessment

Your final grade will be calculated according to reports. To pass, students must earn at least 60 points out of 100.

### Notes

### Contacting Faculty

Visiting faculty's lab. or asking by e-mail.

Contact:

Tomio Miwa (ext. 5018, [miwa@nagoya-u.jp](mailto:miwa@nagoya-u.jp)),

Kentaro Nakai (ext. 5203, [nakai@civil.nagoya-u.ac.jp](mailto:nakai@civil.nagoya-u.ac.jp)),

Yoshihito Yamamoto (ext. 4633, [y.yamamoto@civil.nagoya-u.ac.jp](mailto:y.yamamoto@civil.nagoya-u.ac.jp)),

Tomoaki Nakamura (ext. 4632, [tnakamura@nagoya-u.jp](mailto:tnakamura@nagoya-u.jp))

## Advanced Steel Structures (2.0credits) (鋼構造工学特論)

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Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Lecture	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Spring Semester	1 Spring Semester
Lecturer	KazuoTATEISHI Professor	

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### Course Purpose

Deterioration and its prediction method for steel structures are lectured. It is required to understand the following topics, Importance of maintenance of infrastructures, deterioration in steel structures, calculation method for remaining life of steel members based on fracture mechanics, fatigue and corrosion in steel members, inspection method for steel structures

### Prerequisite Subjects

### Course Topics

Importance of maintenance and difficulties, Experiences of damage in steel structures and repair/retrofitting methods, fatigue and preventing method, fracture mechanics and its application, corrosion and preventing method, inspection method for steel structures

### Textbook

none.

### Additional Reading

### Grade Assessment

Passing score is 60% or more based on reports.

### Notes

### Contacting Faculty



Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Lecture	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Spring Semester	1 Spring Semester
Lecturer	Hikaru NAKAMURA Professor	Yoshihito Yamamoto Associate Professor

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### Course Purpose

Confirm basic knowledge of RC structures  
Understand nonlinear analysis of concrete  
Understand time dependent behavior of concrete  
Understand construction for quality control

### Prerequisite Subjects

### Course Topics

- 1: Life of concrete structures
- 2: Utilization of nonlinear analysis in design
- 3: Outline of nonlinear structural analysis for concrete structures
- 4: Constitutive models(1)
- 5: Constitutive models(2)
- 6: Constitutive models(3)
- 7: Outline of diffusion analysis for concrete structures
- 8: Thermal stress(1)
- 9: Thermal stress(2)
- 10: Creep and shrinkage(1)
- 11: Creep and shrinkage(2)
- 12: Quality control of concrete
- 13: Proposal of construction methods for Quality control
- 14: Presentation of proposal
- 15: Presentation of proposal

### Textbook

Prints are distributed

### Additional Reading

### Grade Assessment

Presentation Term (30%)

Report (70%)

1009089807970696059

### Notes

Contacting Faculty

Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Lecture	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Spring Semester	1 Spring Semester
Lecturer	Yuji Toda Professor	

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#### Course Purpose

To understand the theoretical background and the recent technologies for river and river basin management.

#### Prerequisite Subjects

Hydrology and river engineering, open channel hydraulics

#### Course Topics

1. Hydrological cycle2. Run-off process (Water, sediment, material (bio-elements))3. Fluvial Hydraulics4. River Morphology5. Flood risk management6. Water resources7. Ecosystem and landscape8. Ecological functions9. Ecosystem service and Bio-diversity10. Eco-compatible river basin management

#### Textbook

None.

#### Additional Reading

None.

#### Grade Assessment

Report: 100%

#### Notes

Contacting Faculty

## Advanced Mechanics of Geomaterials (2.0credits) (地盤材料力学特論)

Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Lecture	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Spring Semester	1 Spring Semester
Lecturer	Masaki NAKANO Professor	

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### Course Purpose

Fundamental and advanced knowledge on Mechanics of Geomaterials is learned for construction and maintenance of many kinds of geotechnical structure under consideration of safety, environment and economy.

### Prerequisite Subjects

Advanced Continuum Mechanics, Advanced Numerical Analysis

### Course Topics

1. Consolidation/compression and shearing properties of remold clay  
2. Consolidation/compression and shearing properties of natural deposited clay  
3. Basic plasticity  
4. Characteristics of conventional elasto-plastic constitutive model  
5. Characteristics of unconventional/modern elasto-plastic constitutive model and description of mechanical behavior on natural deposited clay through this model  
6. Characteristics of mechanical behavior on many kinds of geomaterial and description of the behavior through the new model  
7. Design of geotechnical structure : two approaches by conventional design and by numerical analysis

### Textbook

Handout

### Additional Reading

Atkinson, J. H. and Bransby, P.L. : The mechanics of soils- An Introduction to Critical State Soil Mechanics-, McGRAW-HILL Book, (1978)  
NAKANO, M.: Geotechnical mechanics, CORONA PUBLISHING CO., LTD.

### Grade Assessment

Regular assignments (30%), final exam (70%) and 60% or more are accepted.

### Notes

### Contacting Faculty

Send E-mail. Masaki NAKANO: Ex.4622, nakano@civil.nagoya-u.ac.jp  
Shotaro YAMADA: Ex.4621, s-yamada@civil.nagoya-u.ac.jp

## Advanced Traffic Engineering and Management (2.0credits) (交通工学特論)

Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Lecture	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Spring Semester	1 Spring Semester
Lecturer	Hideki NAKAMURA Professor	

### Course Purpose

There is no doubt that a considerable portion of pollution emissions is resulted from transportation related activities and vehicular movements in particular. Managing traffic safely and efficiently is one of the most effective solutions to relieve environmental issues worldwide. Training specialists who have the knowledge and skills of traffic engineering is highly demanded especially in developing countries where travel demand is rapidly increasing despite insufficient transportation infrastructure. In this course, fundamentals and internationally forefront issues in traffic engineering are to be covered in theory and practice, so that students can effectively master the most important issues for practicing in highway planning and traffic operations.

### Prerequisite Subjects

#### Course Topics

1.INTRODUCTION TO TRAFFIC ENGINEERING AND ITS SCOPE 2.TRAFFIC SURVEYS  
3.MACROSCOPIC TRAFFIC CHARACTERISTICS 4.MICROSCOPIC TRAFFIC CHARACTERISTICS  
5.CAPACITY ANALYSIS AND BREAKDOWN PHENOMENA 6.HIGHWAY PLANNING AND  
LEVEL OF SERVICE 7.INTERSECTIO

#### Textbook

N.A.

#### Additional Reading

- Elefteriadou, L.: "An Introduction to Traffic Flow Theory", Springer, 2014.
- Transportation Research Board, Special Report 209, "Highway Capacity Manual", National Research Council, Washington, D.C., 2010.

#### Grade Assessment

Exam or reports

#### Notes

#### Contacting Faculty

## Advanced Urban Planning (2.0credits) (都市計画特論)

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Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Lecture	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Spring Semester	1 Spring Semester
Lecturer	Hirokazu KATO Professor	

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### Course Purpose

Understand the procedure of urban planning and obtain knowledge of practical techniques of planning

### Prerequisite Subjects

Infrastructure Planing, Transportation Planning, Urban and National Land Planning

### Course Topics

Procedure of urban planning, Land use planning, Landscape planning, Public transportation planning, Road network planning, Urban development

### Textbook

### Additional Reading

### Grade Assessment

Reports and Final Presentation

### Notes

### Contacting Faculty

## Conservation and Ecotoxicology of Soil and Water (2.0credits) (土水環境保全学特論)

Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Lecture	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Spring Semester	1 Spring Semester
Lecturer	ArataKATAYAMA Professor	

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### Course Purpose

The class aims to understand the basics on the remediation of contaminated soil and water through the lecture on the outbreak of pollution, environmental standards, exposure to the organisms, toxicity and environmental fates of pollutants, effect on the ecosystem, remediation technologies of soil and water, and waste treatment technologies. A lecture-style class.

### Prerequisite Subjects

Environmental geotechnology, microbiology, chemistry, sanitary engineering, toxicology, mathematics, soil science, hydrology

### Course Topics

The lecture is carried out on the basics on the remediation of contaminated soil and water: pollutants and their properties, toxicity and the environmental standards, interaction (exposure and metabolism/degradation) of pollutants with organisms (mammals, plants, and microorganisms), environmental fate of pollutants, remediation technologies.

### Textbook

Handouts in relation to the topics will be distributed.

### Additional Reading

Vaccari DA, Strom PF, Alleman JE, "Environmental Biology for Engineers and Scientists" John Wiley & Sons, Inc. Hoboken, New Jersey, USA (2006)

Moriarty F, "Ecotoxicology (2nd ed.)" Academic Press, London (1988)

Connell DW, Miller GJ "Chemistry and ecotoxicology of pollution" John Wiley & Sons, Inc. New York, USA (1984)

Alvarez PJJ, Illman WA "Bioremediation and Natural Attenuation" John Wiley & Sons, Inc. Hoboken, New Jersey, USA (2006)

### Grade Assessment

Ability of presentation and discussion:

### Notes

### Contacting Faculty

After the class

or

individual appointment (appointed time/date by phone/email)

## Environmental System Analysis and Planning (2.0credits) (環境社会システム工学)

Course Type	Specialized Courses		
Division at course	Master's Course		
Class Format	Lecture		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	1 Spring Semester	1 Spring Semester	
Lecturer	Hiroki tanikawa Professor	Tsuyoshi FUJITA Visiting Professor	Norisuke Visiting Professor

### Course Purpose

To understand “environmental systems”, i.e., the interaction of human activities and nature.

To learn the scientific mechanisms of global environmental problems, such as climatic change.

To learn the basic principles and methods of analysing environmental systems, e.g., environmental economics, mathematical models, life-cycle assessment, etc.

To learn the principles and methods of environmental management at local, national and global scales.

### Prerequisite Subjects

Low Carbon City Studies

### Course Topics

1. About Environmental System Analysis
- 2-3. Carrying Capacity, Water, Energy, Material Flow and Stock
- 4-6. Simple Global Warming modeling
- 7-9. Industrial Symbiosis modeling
- 10-12. Basis on Input and Output Analysis
- 13-14. Urban Climate Modeling

### Textbook

to be distributed in class

### Additional Reading

to be distributed in class

### Grade Assessment

Attendance to each class is a prerequisite for evaluation.

### Notes

### Contacting Faculty

tanikawa@nagoya-u.jp

Ex.3840

## Advanced Continuum Mechanics (2.0credits) (連続体力学特論)

Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Lecture	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Spring Semester	1 Spring Semester
Lecturer	Masaki NAKANO Professor	Toshihiro NODA Professor

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### Course Purpose

Introduction to continuum mechanics

Through the course, students will be able to:

1. understand and explain the basis of Vector and Tensor Analysis.
2. explain material and spatial descriptions of the physical value of body, material/spatial time derivatives and expression of deformation of body using tensor.
3. understand and explain properties of Cauchy's stress tensor.
4. understand and explain basic law of mechanics and Cauchy's first/second law of motion

### Prerequisite Subjects

Calculus, Linear algebra and Vector analysis

### Course Topics

1. Definition of continuum mechanics
2. Basis of Vector and Tensor Analysis
3. Law of motion
4. Description of motion and deformation
5. Law of motion and stress tensor
6. basic equations of continuum mechanics
7. Compatibility condition of displacement rate and strain rate
8. Constitutive equation and Objectivity
9. Description of deformation of continuum at finite deformation theory

### Textbook

Handout

### Additional Reading

T. Tamura (2000) Introduction to continuum mechanics, Asakura press

### Grade Assessment

Regular assignments (30%), final exam (70%) and 60% or more are accepted.

### Notes

### Contacting Faculty

Masaki NAKANO, Ex:4622, E-mail:nakano@civil.nagoya-u.ac.jp

Toshihiro NODA, Ex:3833, E-mail:noda@nagoya-u.jp



Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Lecture	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Spring and Autumn Semester	1 Spring and Autumn Semester
Lecturer	Muhandiki Victor Designated Professor	

### Course Purpose

Water pollution and solid waste are some of the major environmental problems facing our society today. For effective management of water and waste, it is essential to have relevant rules, laws and policies, and the institutions to administer them. This course will introduce legal, policy and institutional frameworks for managing water and waste.

### Prerequisite Subjects

Water and Waste Engineering

### Course Topics

1. The global water problem
2. Global initiatives to address the water problem
3. Point and non-point sources of water pollution
4. Water quality standards
5. Point and non-point source pollution control measures
6. Allocation of water and water rights
7. Dams and other flow regulation structures
8. Lakes: A typification of water resources management issues
9. Principles of lake management
10. Integrated lake basin management (ILBM)
11. Solid waste generation, collection and disposal
12. Solid waste minimization, recycling and resource recovery
13. Case study on solid waste management in Nagoya City
14. Open discussion
15. Open discussion

### Textbook

Handouts

### Additional Reading

Will be introduced in class.

### Grade Assessment

Reports 50%, Exam 50%. Students who attend more than 80% of the classes are eligible for the exam.

### Notes

### Contacting Faculty

Instructor's Contact: Tel: Ext. 6495 E-mail: victor@urban.env.nagoya-u.ac.jp:

## Advanced Structural Mechanics (2.0credits) (構造力学特論)

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Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Lecture	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Autumn Semester	1 Autumn Semester
Lecturer	Junji KATO Professor	

---

### Course Purpose

To learn the basic of homogenization theory and topology optimization for advanced and numerical structural design.

### Prerequisite Subjects

Computational mechanics, Topology optimization, Finite element method

### Course Topics

- 1.Mechanics of heterogeneous material and homogenization theory
  - 2.Topology optimization
  - 3.Mathematics of optimization
- etc.

### Textbook

None. Handouts will be distributed during class hours.

### Additional Reading

None in particular

### Grade Assessment

Report

### Notes

### Contacting Faculty

Students are encouraged to ask questions in the class.

## Advanced Coastal and Offshore Engineering (2.0credits) (海工学特論)

Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Lecture	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Autumn Semester	1 Autumn Semester
Lecturer	norimi mizutani Professor	Tomoaki NAKAMURA Associate Professor

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### Course Purpose

The aim of this course is to understand wave dynamics in a coastal zone, wave-wave and wave-structure interactions, and their numerical analysis methods.

### Course objectives:

Students will be able to

1. understand and explain hydraulic phenomena related to the radiation stress
2. understand and explain diffraction problems
3. understand and explain wave dynamics including evanescent waves
4. understand and explain the dynamic behavior of floating bodies

### Prerequisite Subjects

Advanced Fluvial and Coastal Hydrodynamics

### Course Topics

1. Radiation stress and wave dynamics in a shallow water
2. Diffraction wave theory (vertical cylinder, axisymmetric structure)
3. Dynamic behavior of floating bodies
4. Potential and the boundary element method
5. Green function and numerical methods

### Textbook

### Additional Reading

Coastal Engineering - Wave, Beaches, Wave-Structure Interactions: T. Sawaragi, Elsevier

### Grade Assessment

Final exam/reports

### Notes

### Contacting Faculty

Prof. Mizutani (ext. 4630, [mizutani@civil.nagoya-u.ac.jp](mailto:mizutani@civil.nagoya-u.ac.jp)), Assoc. Prof. Nakamura (ext. 4632, [tnakamura@nagoya-u.jp](mailto:tnakamura@nagoya-u.jp))

## Advanced Soil Dynamics (2.0credits) (地盤動力学特論)

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Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Lecture	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Autumn Semester	1 Autumn Semester
Lecturer	Toshihiro NODA Professor	Kentaro NAKAI Associate Professor

---

### Course Purpose

The fundamental theory for dynamics problems such as liquefaction in geotechnical engineering is provided based on continuum mechanics and mixture theory.

### Prerequisite Subjects

Soil Mechanics, Continuum Mechanics

### Course Topics

#### Textbook

#### Additional Reading

#### Grade Assessment

Oral exam(60%), Report(40%)

#### Notes

#### Contacting Faculty

Send E-mail.

(Ex.3833,noda@nagoya-u.jp)

Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Lecture	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Spring Semester	1 Autumn Semester
Lecturer	NagahisaHIRAYAMA Associate Professor	

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### Course Purpose

Water pollution and solid waste are some of the major environmental problems facing our society today. In this class we will learn about various technologies and measures applied in drinking water supply, control of pollution of water bodies, and solid waste management.

### Prerequisite Subjects

Water and Waste Management Policies

### Course Topics

1. The hydrologic cycle
2. Water treatment and water supply systems
3. Operation and management of water supply systems
4. Discussion: Should water supply be privatized?
5. Domestic wastewater treatment systems
6. Cost of domestic wastewater treatment systems
7. Point and non-point sources of pollution
8. Estimation of point and non-point source pollution load
9. Point and non-point source pollution control measures
10. Design of solid waste handling facilities (I)
11. Design of solid waste handling facilities (II)
12. Solid waste treatment facilities in Nagoya
13. Open Discussion
14. Presentation (about water and/or waste issues in home country)
15. Presentation (about water and/or waste issues in home country)

### Textbook

Handouts

### Additional Reading

Will be introduced in class.

### Grade Assessment

Reports 50%, Exam 50%. Students who attend more than 80% of the classes are eligible for the exam.

### Notes

### Contacting Faculty

Instructor's Contact: Tel Ext. 6495; E-mail [victor@urban.env.nagoya-u.ac.jp](mailto:victor@urban.env.nagoya-u.ac.jp)

## Climate Change Policies (2.0credits) (気候変動政策論)

Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Lecture	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	Autumn Semester ,every other year	1 Autumn Semester
Lecturer	Miho IRYO(ASANO) Associate Professor	

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### Course Purpose

Through lectures and discussions on climate change (global warming) and its countermeasures from viewpoint of infrastructure development, students are expected to understand: 1) basic facts about climate change; 2) climate change mitigation and adaptation policies; 3) United Nations Framework Convention on Climate Change(UNFCCC) and international systems.

### Prerequisite Subjects

Low Carbon Cities Studies, Water and Wastes Management Policies

### Course Topics

1. Introduction: Plan of the course
2. Science of the Climate Change and its Impacts on Social Systems
3. Climate Change and International Systems
4. Regional Mitigation and Adaptation Strategies for Climate Change
5. Presentation by Students and Discussions (1)
6. International Mitigation and Adaptation Strategies for Climate Change
7. International Negotiation and Consensus Building
8. Presentation by Students and Discussions (2)

### Textbook

Material will be distributed.

### Additional Reading

References will be introduced.

### Grade Assessment

Evaluation: Presentation 50%, Reports 50%.

### Notes

### Contacting Faculty

Miho IRYO, iryo@nagoya-u.jp, ext.6044

## Environmental Industry Systems (2.0credits) (環境産業システム論)

Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Lecture	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Autumn Semester	1 Autumn Semester
Lecturer	Hiroki tanikawa Professor	Miho IRYO(ASANO) Associate Professor

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### Course Purpose

This course tries to realize unique style of learning. The course consists of: 1) lectures by environmental industries located in Chubu areas; 2) presentations and/or discussions among the students, 3) discussions between the students and the industry staffs. The industries are prominent companies mainly in the field of manufacturing.

### Prerequisite Subjects

Low Carbon Cities Studies, Water and Wastes Management Policies

### Course Topics

(note: 2018 Autumn)

1. Introduction to the course
2. Lecture by International Christian University (ICU)
3. Lecture by TOYOTA
4. Lecture by TOSHIBA
5. Lecture by CTI Engineering Co. Ltd.
6. Lecture by Central Nippon Expressway (NEXCO CENTRAL)
7. Lecture by MITSUBISHI HEAVY INDUSTRIES
8. Lecture by MAKITA
9. Lecture by Brother Industries, Ltd.
10. Lecture by TOYO CONSTRUCTION
11. Lecture by JICA
12. Lecture by SUNTORY
13. Group presentations and discussions

Lecture 2-12: Case of AY2018

### Textbook

Materials will be distributed.

### Additional Reading

Materials to be introduced.

### Grade Assessment

Evaluation will be carried out by performance of presentations and/or contributions to discussions.

### Notes

### Contacting Faculty

NUGELP office (Extension: 5507)

## Transportation Systems Analysis? (2.0credits) (交通システム分析)

Course Type	Specialized Courses		
Division at course	Master's Course		
Class Format	Lecture		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	1 Spring Semester	1 Spring Semester	
Lecturer	Takayuki MORIKAWA Professor	Toshiyuki YAMAMOTO Professor	Tomio MIWA Associate Professor

### Course Purpose

To understand approaches and methods to analyze travel behavior and demands for various transportation systems

### Prerequisite Subjects

Statistics, Transportation Planning

### Course Topics

1. Transportation policies and transportation systems analysis
2. Travel demand and travel survey
3. Aggregate demand model 1 – Trip generation & production/attraction
4. Aggregate demand model 2 – Trip distribution
5. Aggregate demand model 3 – Modal split
6. Traffic assignment on network 1
7. Traffic assignment on network 2
8. Traffic assignment on network 3
9. Traffic simulation 1
10. Traffic simulation 2
11. Disaggregate demand model 1 – Binary choice
12. Disaggregate demand model 2 – Multinomial choice
13. Disaggregate demand model 3 – Estimation and statistical test
14. Disaggregate demand model 4 – Aggregation and forecast
15. Disaggregate demand model 5 – Multi-dimensional choice

### Textbook

None

### Additional Reading

"Modeling Travel Behavior" by Kitamura, Morikawa, Sasaki, Fujii, & Yamamoto (in Japanese)

"Discrete Choice Analysis" by Ben-Akiva and Lerman

"Discrete Choice Methods with Simulation" by Train

### Grade Assessment

Exam & reports

### Notes

### Contacting Faculty



## Exercise in Inspection of Civil Structures (1.0credits) (インフラ検査・点検演習)

Course Type	Specialized Courses		
Division at course	Master's Course		
Class Format	Exercise		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	1 Spring Semester	1 Spring Semester	
Lecturer	KazuoTATEISHI Professor	Hikaru NAKAMURA Professor	Takeshi HANJI Associate Professor
	Yoshihito Yamamoto Associate Professor	Taito Miura Assistant Professor	Masaru Shimizu Assistant Professor

### Course Purpose

The purpose of this course is to learn deterioration mechanisms of concrete and steel structures and basics of bridge maintenance. Based on the knowledge learned in the course, exercise using "N2U-BRIDGE" and on site inspection of existing bridge is conducted. Furthermore, exercises on preparation of inspection reports, evaluation of deterioration degree, estimation of deterioration mechanism are carried out.

### Prerequisite Subjects

### Course Topics

Orientation

Current situation of bridges in Japan

Historical review of Japanese standards

Defects of concrete and steel structures

Estimation of deterioration mechanism of concrete and steel structures

Guideline for inspection and assessment of infrastructures

Detailed investigation (Principle of nondestructive test)

How to write the investigation worksheet

Inspection training using "N2U-BRIDGE"

Inspection using existing bridges

### Textbook

Prints are distributed

### Additional Reading

### Grade Assessment

Report (100%)

1009089807970696059

### Notes

### Contacting Faculty

Visiting faculty's lab. or asking by e-mail.

## Advanced Work in Hydro-morphologic Processes (1.0credits) (流れ・地形解析学演習)

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Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Exercise	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Spring Semester	1 Spring Semester
Lecturer	Ryota TSUBAKI Associate Professor	OBANAMakiko Assistant Professor

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### Course Purpose

The aims of this course are

1. Understand the model to estimate transport of water and other materials,
2. Preview the result estimated by the model with reasonable boundary conditions, and
3. Understand the theory of aquatic biology.

### Prerequisite Subjects

Fundamentals of Hydrodynamics, Open-channel hydraulics, Hydrology and River Engineering

### Course Topics

1. Analysis of open channel flow and morphological change
2. Analysis of seepage flow in groundwater and unsaturated soil
3. Theory of mathematical modeling for aquatic organisms

### Textbook

Printed document

### Additional Reading

Directed as needed

### Grade Assessment

Report (100%)

### Notes

Contacting Faculty

## Advanced Work in Planning Methods (1.0credits) (社会基盤計画学演習)

Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Exercise	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Spring Semester	1 Spring Semester
Lecturer	Tomio MIWA Associate Professor	

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### Course Purpose

Learn systems analysis on city, transportation, and regional planning.

Objectives are to understand regression models, principal component analysis, discriminant analysis, and discrete choice models, to select an appropriate method for given data, to calculate correct results, and to interpret the results appropriately.

### Prerequisite Subjects

Desirable to have some knowledge on basic microeconomic theory, probability theory and statistics, and mathematical planning method.

### Course Topics

1. Statistical methods for data analysis
2. Regression analysis: basics
3. Regression analysis: application (specification, error term, generalized least squares)
4. Principal component analysis
5. Discriminant analysis
6. Discrete choice model: basics
7. Discrete choice model: application

### Textbook

Lecture note will be provided.

### Additional Reading

Maddala, G.S.: Introduction to Econometrics, Macmillan Publishing Company  
Ben-Akiva, M. and Lerman, S.R.: Discrete Choice Analysis, MIT Press

### Grade Assessment

Students will be evaluated by reports (100%) .

Students are required to submit all reports.

Credits will be awarded to those students who score 60 or more.

Grades are as follows: S:100-90, A:89-80, B:79-70, C:69-60, F:59-0.

### Notes

### Contacting Faculty

Students can ask questions at any time during classes.

Questions during off-class hours can be asked via e-mail: miwa@nagoya-u.jp

## Advanced Work in Structural Mechanics (1.0credits) (構造力学特論演習)

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Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Exercise	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Autumn Semester	1 Autumn Semester
Lecturer	Junji KATO Professor	

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### Course Purpose

To solve the various types of problems based on the contents of advanced structural mechanics.

### Prerequisite Subjects

Computational mechanics, Topology optimization, Finite element method

### Course Topics

1.Mechanics of heterogeneous material and homogenization theory2.Topology optimization3.Mathematics of optimizationetc.

### Textbook

None

### Additional Reading

Several books will be introduced during the class.

### Grade Assessment

Evaluation is based on reports, and the passing score is 60% and higher.

### Notes

### Contacting Faculty

Questions are always welcome.

## Advanced Work in Coastal and Offshore Engineering (1.0credits) (海工学演習)

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Course Type	Specialized Courses		
Division at course	Master's Course		
Class Format	Exercise		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	1 Autumn Semester	1 Autumn Semester	
Lecturer	norimi mizutani Professor	Tomoaki NAKAMURA Associate Professor	YonghwanCHO Assistant Professor

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### Course Purpose

Through this course, students will be able to

1. find what issues are in coastal and ocean engineering
2. come up with how to address them
3. acquire enough skills to address them by themselves

### Prerequisite Subjects

Advanced Fluvial and Coastal Hydrodynamics, Advanced Coastal and Offshore Engineering

### Course Topics

Each group composed of two to three students will select and address an issue in coastal and ocean engineering. Every group will make a presentation on progress every week, and instructors and students will discuss the content of the presentation.

### Textbook

Not directed

### Additional Reading

Not directed

### Grade Assessment

Presentation

### Notes

### Contacting Faculty

Prof. Mizutani (ext. 4630, [mizutani@civil.nagoya-u.ac.jp](mailto:mizutani@civil.nagoya-u.ac.jp)), Assoc. Prof. Nakamura (ext. 4632, [tnakamura@nagoya-u.jp](mailto:tnakamura@nagoya-u.jp)), Assist. Prof. Cho (ext. 4634, [yhcho@civil.nagoya-u.ac.jp](mailto:yhcho@civil.nagoya-u.ac.jp))

## Advanced Work in Soil Mechanics and Geotechnical Engineering (1.0credits) (地盤力学総合演習)

Course Type	Specialized Courses		
Division at course	Master's Course		
Class Format	Exercise		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	1 Autumn Semester	1 Autumn Semester	
Lecturer	Masaki NAKANO Professor SAKAITakayuki Assistant Professor	Toshihiro NODA Professor YOSHIKAWATakahiro Assistant Professor	Kentaro NAKAI Associate Professor

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### Course Purpose

The fundamental problems in soil mechanics and geotechnical engineering are widely understood through the practical exercise and programming.

### Prerequisite Subjects

Advanced Mechanics of Geomaterials, Advanced Soil Dynamics, Advanced Continuum Mechanics, Advanced Numerical Analysis

### Course Topics

1 Understanding of the elasto-plastic constitutive equation of soils ( Mechanical behavior of various soils )  
2 Understanding of the dynamic problems of the ground  
3 Understanding of the theory and analysis method for the ground deformation and failure.  
4. Application of finite element method to geotechnical engineering

### Textbook

Handout

### Additional Reading

### Grade Assessment

Report

### Notes

### Contacting Faculty

Send E-mail.Masaki NAKANO: Ex.4622, nakano@civil.nagoya-u.ac.jp Toshihiro NODA: Ex.3833, noda@nagoya-u.jp Kentaro NAKAI: Ex.5203, nakai@civil.nagoya-u.ac.jp

## Exercise on Conservation and Ecotoxicology of Soil and Water (1.0credits) (土水環境保全学演習)

Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Exercise	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Autumn Semester	1 Autumn Semester
Lecturer	ArataKATAYAMA Professor	

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### Course Purpose

The class aims to understand the basic knowledge and techniques to carry out the research on the microbial remediation of polluted soil and groundwater, and microbial waste treatment by the exercise.

### Prerequisite Subjects

Environmental geotechnology, chemistry, microbiology and hydrology, soil science

### Course Topics

Students are required to complete the exercise on the selected topics of physico-chemical analysis of soil and water in pollution, microbial manipulation, environmental microbiology, analysis of pollutants, and analysis of mass transport in soil and groundwater

### Textbook

#### Additional Reading

Fitts CR, "Groundwater Science" Academic Press, London, UK (2002)

Fetter CW, "Contaminant Hydrology (2nd Ed.)" Waveland Press Inc. Long Grove, Illinois, USA (1999)

Madigan MT, Bender KS, Buckley DH, Sattley WM, Stahl DA, "Brock Biology of Microorganisms Global Edition", Pearson Education, Harlow, UK (2018)

### Grade Assessment

exercise reports

### Notes

### Contacting Faculty

After the class

or

Individual appointment by email/phone

## Practice in Environmental Systems Analysis and Planning (1.0credits) (環境社会システム工学演習)

Course Type	Specialized Courses		
Division at course	Master's Course		
Class Format	Exercise		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	1 Autumn Semester	1 Autumn Semester	
Lecturer	Hiroki tanikawa Professor	Kiichiro HAYASHI Professor	Keijiro Okuoka Assistant Professor

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### Course Purpose

It is important to use "System Thinking" in mathematic model for clarifying the relationship between natural environment and human activity. The goal of this seminar is to understand "statistics", "spreadsheet simulation" and "system dynamics" with using geographic information systems.

### Prerequisite Subjects

better to take courses below, - Low Carbon Studies - Environmental System Analysis and Planning

### Course Topics

Choose and combine methods from the following and apply them to the analysis of topics which the student is interested in. 1. Geographical Information System(ArcGIS) 2. Statistical Analysis such as SPSS or R 3. Systems Dynamics

### Textbook

in the class

### Additional Reading

Information of references will provided in the class.

### Grade Assessment

Grading is based on final reports and attendance.

### Notes

### Contacting Faculty

in the class



## Global Research Internship 1 (2.0credits) (グローバル研究インターンシップ1)

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Course Type	Specialized Courses	
Division at course	Master's Course	
Class Format	Exercise	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Spring and Autumn Semester	
Lecturer	Associated Faculty	

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### Course Purpose

As part of the Forefront Studies Program and the Nagoya University Global Environmental Leaders Program (NUGELP), this course aims at providing students with research-based internship opportunities at universities, research institutions, companies, governmental and non-governmental organizations in Japan and overseas to acquire the ability to conduct practical and applied research.

### Prerequisite Subjects

Students are expected to have taken some lectures offered by the Forefront Studies Program and the Nagoya University Global Environmental Leaders Program (NUGELP).

### Course Topics

Internship should be conducted based on close communication with academic advisor(s). Students are expected to acquire practical research know-how through On-site Research Training (ORT). Details of the Internship such as period and terms of implementation should be decided through thorough consultation with academic advisor(s) and experts at host institutions. Course Schedule: Step 1: Initial Proposal Step 2: Detailed Proposal Step 3: Internship Step 4: Final Report Step 5: Presentation

### Textbook

None

### Additional Reading

None

### Grade Assessment

Performance is graded by Pass or Fail (2 credits). Grading shall be based on student's report and presentation.

### Notes

### Contacting Faculty

Nagoya University Civil and Environmental Engineering International Programs Office Room 401,  
Environmental Studies Hall envleaders@urban.env.nagoya-u.ac.jp Ex.5507

Introduction to Academic Communication (1.0credits) (コミュニケーション学)

Course Type	Comprehensive engineering courses		
Division at course	Master's Course		
Class Format	Lecture		
Course Name	Molecular and Macromolecular Chemistry	Materials Chemistry	Biomolecular Engineering
	Applied Physics	Materials Physics	Materials Design Innovation Engineering
	Materials Process Engineering	Chemical Systems Engineering	Electrical Engineering
	Electronics	Information and Communication Engineering	Mechanical Systems Engineering
	Micro-Nano Mechanical Science and Engineering	Aerospace Engineering	Department of Energy Engineering
	Department of Applied Energy	Civil and Environmental Engineering	Graduate Chemistry
	Graduate Chemistry	Automotive Engineering	Automotive Engineering
	Civil and Environmental Engineering Graduate		
Starts 1	1 Autumn Semester	1 Autumn Semester	1 Autumn Semester
	1 Autumn Semester	1 Autumn Semester	1 Autumn Semester
	1 Autumn Semester	1 Autumn Semester	1 Autumn Semester
	1 Autumn Semester	1 Autumn Semester	1 Autumn Semester
	1 Autumn Semester	1 Autumn Semester	1 Autumn Semester
	1 Autumn Semester	1 Autumn Semester	1 Autumn Semester
	1 Autumn Semester	1 Autumn Semester	1 Autumn Semester
	1 Autumn Semester		
Lecturer	ReikoFURUYA Associate Professor		

**Course Purpose**

This course is intended to help students learn the skills necessary for making an effective presentation in a language (either Japanese or English) different from their native tongue. Japanese students will make presentations in English, and international students in Japanese.

**Prerequisite Subjects**

**Course Topics**

(1) Observing video-taped presentations:By watching model presentations, students will see how an effective presentation is made and learn techniques useful for their own presentations. :(2) Making a presentation:By using presentation techniques discussed

**Textbook**

none

**Additional Reading**

Please refer to the Japanese version of this syllabus.

**Grade Assessment**

Evaluation will be based on presentations and class participation.:

**Notes**

**Contacting Faculty**

**Advanced Lectures on Scientific English (1.0credits) (科学技術英語特論)**

Course Type	Comprehensive engineering courses		
Division at course	Master's Course		
Class Format	Lecture		
Course Name	Molecular and Macromolecular Chemistry	Materials Chemistry	Biomolecular Engineering
	Applied Physics	Materials Physics	Materials Design Innovation Engineering
	Materials Process Engineering	Chemical Systems Engineering	Electrical Engineering
	Electronics	Information and Communication Engineering	Mechanical Systems Engineering
	Micro-Nano Mechanical Science and Engineering	Aerospace Engineering	Department of Energy Engineering
	Department of Applied Energy	Civil and Environmental Engineering	Automotive Engineering
	Automotive Engineering	Civil and Environmental Engineering Graduate	
Starts 1	1 Autumn Semester	1 Autumn Semester	1 Autumn Semester
	1 Autumn Semester	1 Autumn Semester	1 Autumn Semester
	1 Autumn Semester	1 Autumn Semester	1 Autumn Semester
	1 Autumn Semester	1 Autumn Semester	1 Autumn Semester
	1 Autumn Semester	1 Autumn Semester	1 Autumn Semester
	1 Autumn Semester	1 Autumn Semester	1 Autumn Semester
	1 Autumn Semester	1 Autumn Semester	1 Autumn Semester
Lecturer	Part-time Faculty		

**Course Purpose**

Students will acquire basic skills to summarize their research as a paper in English and to make a presentation in English.

**Prerequisite Subjects**

Various subjects relating to English

**Course Topics**

This course focuses on guided practice in written and spoken English in academic and scientific contexts. Students are expected to write short essays, respond to questions from peers and improve their academic quality.

1. Basics of academic writing
2. Unity and coherence
3. Paragraph structures in scientific context
4. Audience-friendly presentation

**Textbook**

**Additional Reading**

Glasman-Deal, Hilary. "Science Research Writing: A Guide for Non-Native Speakers of English" Imperial College Press.

**Grade Assessment**

Quality of written and oral presentation, active participation in discussion, and attendance

**Notes**

This course is open to native and non-native speakers of English who have not received training in logical and critical thinking skills in English.

Contacting Faculty

Email address to be announced in the first class

## Seminar on Structural Engineering 2A (2.0credits) (構造工学セミナー2A)

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Course Type	Specialized Courses	
Division at course	Doctor's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Spring Semester	1 Autumn Semester
Lecturer	Junji KATO Professor	

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### Course Purpose

To understand basic theory of finite element method and continuum mechanics.

### Prerequisite Subjects

Computational Mechanics, Structural Mechanics, Applied Structural Mechanics, Strengths of Structures in Ultimate States, etc.

### Course Topics

1. Finite Element Method:2. Continuum Mechanics:3. Structural Optimization

### Textbook

### Additional Reading

### Grade Assessment

Reports

### Notes

### Contacting Faculty

Questions are welcome during the seminar.

## Seminar on Structural Engineering 2B (2.0credits) (構造工学セミナー2B)

---

Course Type	Specialized Courses	
Division at course	Doctor's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Autumn Semester	1 Spring Semester
Lecturer	Junji KATO Professor	

---

### Course Purpose

To understand basic theory of finite element method and continuum mechanics.

### Prerequisite Subjects

Computational Mechanics, Structural Mechanics, Applied Structural Mechanics, Strengths of Structures in Ultimate States, etc.

### Course Topics

1. Finite Element Method:2. Continuum Mechanics:3. Structural Optimization

### Textbook

### Additional Reading

### Grade Assessment

Reports

### Notes

### Contacting Faculty

Questions are welcome during the seminar.

## Seminar on Structural Engineering 2C (2.0credits) (構造工学セミナー2C)

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Course Type	Specialized Courses	
Division at course	Doctor's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	2 Spring Semester	2 Autumn Semester
Lecturer	Junji KATO Professor	

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### Course Purpose

To understand basic theory of finite element method and continuum mechanics.

### Prerequisite Subjects

Computational Mechanics, Structural Mechanics, Applied Structural Mechanics, Strengths of Structures in Ultimate States, etc.

### Course Topics

1. Finite Element Method:2. Continuum Mechanics:3. Structural Optimization

### Textbook

### Additional Reading

### Grade Assessment

Reports

### Notes

### Contacting Faculty

Questions are welcome during the seminar.

## Seminar on Structural Engineering 2D (2.0credits) (構造工学セミナー2D)

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Course Type	Specialized Courses	
Division at course	Doctor's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	2 Autumn Semester	2 Spring Semester
Lecturer	Junji KATO Professor	

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### Course Purpose

To understand basic theory of finite element method and continuum mechanics.

### Prerequisite Subjects

Computational Mechanics, Structural Mechanics, Applied Structural Mechanics, Strengths of Structures in Ultimate States, etc.

### Course Topics

1. Finite Element Method:2. Continuum Mechanics:3. Structural Optimization

### Textbook

### Additional Reading

### Grade Assessment

Reports

### Notes

### Contacting Faculty

Questions are welcome during the seminar.



## Seminar on Structural Engineering 2E (2.0credits) (構造工学セミナー2E)

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Course Type	Specialized Courses	
Division at course	Doctor's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	3 Spring Semester	3 Autumn Semester
Lecturer	Junji KATO Professor	

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### Course Purpose

To understand basic theory of finite element method and continuum mechanics.

### Prerequisite Subjects

Computational Mechanics, Structural Mechanics, Applied Structural Mechanics, Strengths of Structures in Ultimate States, etc.

### Course Topics

1. Finite Element Method:2. Continuum Mechanics:3. Structural Optimization

### Textbook

### Additional Reading

### Grade Assessment

Reports

### Notes

### Contacting Faculty

Questions are welcome during the seminar.

## Seminar on Materials and Structural Design 2A (2.0credits) (材料・形態学セミナー 2 A)

Course Type	Specialized Courses		
Division at course	Doctor's Course		
Class Format	Seminar		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	1 Spring Semester	1 Autumn Semester	
Lecturer	Hikaru NAKAMURA Professor	Yoshihito Yamamoto Associate Professor	Taito Miura Assistant Professor

### Course Purpose

The purpose of these practices is to acquire basic and applied knowledge for understanding the properties of cement, cement paste and concrete and the mechanisms of cement hydration using text book written in English. Furthermore, the participants would be able to get into the total power such as gathering information, relevant technique investigation and presentation skills as going through the presentation.

### Prerequisite Subjects

Material engineering, concrete structure No.1,2

### Course Topics

#### 1. Property of Cement

Type of cement

Crystal structure of cement

#### 2. Property of Cement paste

Hydration process of each cement type

Micro-structure of cement hydrates

### Textbook

Cement Chemistry 2nd edition H.F.W. Taylor, Thomas Telford

### Additional Reading

No notification

### Grade Assessment

Considering result of Presentation and Oral examination, the acceptance score must be more than 60 points. In this regards, the participant who is absent without notification is more than a half of class he/she isn't evaluation objective.

<graduate school: enrolled student since H23>

10090pts: S, 8980 pts: A, 7970 pts: B, 6960 pts: C, less than 59 pts: F

### Notes

Contacting Faculty

## Seminar on Materials and Structural Design 2B (2.0credits) (材料・形態学セミナー 2 B)

Course Type	Specialized Courses		
Division at course	Doctor's Course		
Class Format	Seminar		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	1 Autumn Semester	1 Spring Semester	
Lecturer	Hikaru NAKAMURA Professor	Yoshihito Yamamoto Associate Professor	Taito Miura Assistant Professor

### Course Purpose

The purpose of these practices is to acquire basic and applied knowledge for understanding the properties of cement, cement paste and concrete and the mechanisms of cement hydration using text book written in English. Furthermore, the participants would be able to get into the total power such as gathering information, relevant technique investigation and presentation skills as going through the presentation.

### Prerequisite Subjects

Material engineering, concrete structure No.1,2

### Course Topics

#### 1. Property of Cement

Type of cement

Crystal structure of cement

#### 2. Property of Cement paste

Hydration process of each cement type

Micro-structure of cement hydrates

### Textbook

Cement Chemistry 2nd edition H.F.W. Taylor, Thomas Telford

### Additional Reading

No notification

### Grade Assessment

Considering result of Presentation and Oral examination, the acceptance score must be more than 60 points. In this regards, the participant who is absent without notification is more than a half of class he/she isn't evaluation objective.

<graduate school: enrolled student since H23>

10090pts: S, 8980 pts: A, 7970 pts: B, 6960 pts: C, less than 59 pts: F

### Notes

### Contacting Faculty

## Seminar on Materials and Structural Design 2C (2.0credits) (材料・形態学セミナー 2 C)

Course Type	Specialized Courses		
Division at course	Doctor's Course		
Class Format	Seminar		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	2 Spring Semester	2 Autumn Semester	
Lecturer	Hikaru NAKAMURA Professor	Yoshihito Yamamoto Associate Professor	Taito Miura Assistant Professor

### Course Purpose

The purpose of these practices is to acquire basic and applied knowledge for understanding the properties of cement, cement paste and concrete and the mechanisms of cement hydration using text book written in English. Furthermore, the participants would be able to get into the total power such as gathering information, relevant technique investigation and presentation skills as going through the presentation.

### Prerequisite Subjects

Material engineering, concrete structure No.1,2

### Course Topics

#### 1. Property of Cement

Type of cement

Crystal structure of cement

#### 2. Property of Cement paste

Hydration process of each cement type

Micro-structure of cement hydrates

### Textbook

Cement Chemistry 2nd edition H.F.W. Taylor, Thomas Telford

### Additional Reading

No notification

### Grade Assessment

Considering result of Presentation and Oral examination, the acceptance score must be more than 60 points. In this regards, the participant who is absent without notification is more than a half of class he/she isn't evaluation objective.

<graduate school: enrolled student since H23>

10090pts: S, 8980 pts: A, 7970 pts: B, 6960 pts: C, less than 59 pts: F

### Notes

### Contacting Faculty

## Seminar on Materials and Structural Design 2D (2.0credits) (材料・形態学セミナー 2 D)

Course Type	Specialized Courses		
Division at course	Doctor's Course		
Class Format	Seminar		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	2 Autumn Semester	2 Spring Semester	
Lecturer	Hikaru NAKAMURA Professor	Yoshihito Yamamoto Associate Professor	Taito Miura Assistant Professor

### Course Purpose

The purpose of these practices is to acquire basic and applied knowledge for understanding the properties of cement, cement paste and concrete and the mechanisms of cement hydration using text book written in English. Furthermore, the participants would be able to get into the total power such as gathering information, relevant technique investigation and presentation skills as going through the presentation.

### Prerequisite Subjects

Material engineering, concrete structure No.1,2

### Course Topics

#### 1. Property of Cement

Type of cement

Crystal structure of cement

#### 2. Property of Cement paste

Hydration process of each cement type

Micro-structure of cement hydrates

### Textbook

Cement Chemistry 2nd edition H.F.W. Taylor, Thomas Telford

### Additional Reading

No notification

### Grade Assessment

Considering result of Presentation and Oral examination, the acceptance score must be more than 60 points. In this regards, the participant who is absent without notification is more than a half of class he/she isn't evaluation objective.

<graduate school: enrolled student since H23>

10090pts: S, 8980 pts: A, 7970 pts: B, 6960 pts: C, less than 59 pts: F

### Notes

Contacting Faculty

## Seminar on Materials and Structural Design 2E (2.0credits) (材料・形態学セミナー 2 E)

Course Type	Specialized Courses		
Division at course	Doctor's Course		
Class Format	Seminar		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	3 Spring Semester	3 Autumn Semester	
Lecturer	Hikaru NAKAMURA Professor	Yoshihito Yamamoto Associate Professor	Taito Miura Assistant Professor

### Course Purpose

The purpose of these practices is to acquire basic and applied knowledge for understanding the properties of cement, cement paste and concrete and the mechanisms of cement hydration using text book written in English. Furthermore, the participants would be able to get into the total power such as gathering information, relevant technique investigation and presentation skills as going through the presentation.

### Prerequisite Subjects

Material engineering, concrete structure No.1,2

### Course Topics

#### 1. Property of Cement

Type of cement

Crystal structure of cement

#### 2. Property of Cement paste

Hydration process of each cement type

Micro-structure of cement hydrates

### Textbook

Cement Chemistry 2nd edition H.F.W. Taylor, Thomas Telford

### Additional Reading

No notification

### Grade Assessment

Considering result of Presentation and Oral examination, the acceptance score must be more than 60 points. In this regards, the participant who is absent without notification is more than a half of class he/she isn't evaluation objective.

<graduate school: enrolled student since H23>

10090pts: S, 8980 pts: A, 7970 pts: B, 6960 pts: C, less than 59 pts: F

### Notes

### Contacting Faculty

## Seminar on Conservation Engineering of River Basins 2A (2.0credits) (流域保全学セミナー2A)

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Course Type	Specialized Courses	
Division at course	Doctor's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Spring Semester	1 Autumn Semester
Lecturer	Yuji Toda Professor	RyotaTSUBAKI Associate Professor OBANAMakiko Assistant Professor

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### Course Purpose

### Prerequisite Subjects

River engineering, Hydrology, Hydraulics, Open-channel hydraulics, Human activities and environment

### Course Topics

1. Concept of improvement/management of river and basin: 2. Structure of river/basin landscape: 3. Runoff and sediment yield: 4. Fluvial process: 5. Habitat evaluation method

### Textbook

### Additional Reading

### Grade Assessment

Presentation and report:

### Notes

### Contacting Faculty

## Seminar on Conservation Engineering of River Basins 2B (2.0credits) (流域保全学セミナー2B)

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Course Type	Specialized Courses		
Division at course	Doctor's Course		
Class Format	Seminar		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	1 Autumn Semester	1 Spring Semester	
Lecturer	Yuji Toda Professor	Ryota TSUBAKI Associate Professor	OBANAMakiko Assistant Professor

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### Course Purpose

Basic and advanced research on fluvial hydraulics and hydrology and its relation to the ecosystem will be reviewed and discussed. Research methods will also be reviewed and discussed.

### Prerequisite Subjects

Hydrology and River Engineering, Open-channel hydraulics, Fundamental of Hydrodynamics with Exercises, Human activities and environment

### Course Topics

1. Concept of improvement/management of river and basin
2. Structure of river/basin landscape
3. Runoff and sediment yield
4. Fluvial process
5. Habitat evaluation method

### Textbook

Directed as needed

### Additional Reading

Directed as needed

### Grade Assessment

Presentation and report:

### Notes

### Contacting Faculty



## Seminar on Conservation Engineering of River Basins 2C (2.0credits) (流域保全学セミナー2C)

Course Type	Specialized Courses		
Division at course	Doctor's Course		
Class Format	Seminar		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	2 Spring Semester	2 Autumn Semester	
Lecturer	Yuji Toda Professor	Ryota TSUBAKI Associate Professor	OBANAMakiko Assistant Professor

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### Course Purpose

Basic and advanced research on fluvial hydraulics and hydrology and its relation to the ecosystem will be reviewed and discussed. Research methods will also be reviewed and discussed.

### Prerequisite Subjects

Hydrology and River Engineering, Open-channel hydraulics, Fundamental of Hydrodynamics with Exercises, Human activities and environment

### Course Topics

1. Concept of improvement/management of river and basin
2. Structure of river/basin landscape
3. Runoff and sediment yield
4. Fluvial process
5. Habitat evaluation method

### Textbook

Directed as needed

### Additional Reading

Directed as needed

### Grade Assessment

Presentation and report:

### Notes

### Contacting Faculty

## Seminar on Conservation Engineering of River Basins 2D (2.0credits) (流域保全学セミナー2D)

Course Type	Specialized Courses		
Division at course	Doctor's Course		
Class Format	Seminar		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	2 Autumn Semester	2 Spring Semester	
Lecturer	Yuji Toda Professor	Ryota TSUBAKI Associate Professor	OBANAMakiko Assistant Professor

### Course Purpose

Basic and advanced research on fluvial hydraulics and hydrology and its relation to the ecosystem will be reviewed and discussed. Research methods will also be reviewed and discussed.

### Prerequisite Subjects

Hydrology and River Engineering, Open-channel hydraulics, Fundamental of Hydrodynamics with Exercises, Human activities and environment

### Course Topics

1. Concept of improvement/management of river and basin
2. Structure of river/basin landscape
3. Runoff and sediment yield
4. Fluvial process
5. Habitat evaluation method

### Textbook

Directed as needed

### Additional Reading

Directed as needed

### Grade Assessment

Presentation and report:

### Notes

Contacting Faculty

## Seminar on Conservation Engineering of River Basins 2E (2.0credits) (流域保全学セミナー2E)

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Course Type	Specialized Courses		
Division at course	Doctor's Course		
Class Format	Seminar		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	3 Spring Semester	3 Autumn Semester	
Lecturer	Yuji Toda Professor	Ryota TSUBAKI Associate Professor	OBANAMakiko Assistant Professor

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### Course Purpose

Basic and advanced research on fluvial hydraulics and hydrology and its relation to the ecosystem will be reviewed and discussed. Research methods will also be reviewed and discussed.

### Prerequisite Subjects

Hydrology and River Engineering, Open-channel hydraulics, Fundamental of Hydrodynamics with Exercises, Human activities and environment

### Course Topics

1. Concept of improvement/management of river and basin
2. Structure of river/basin landscape
3. Runoff and sediment yield
4. Fluvial process
5. Habitat evaluation method

### Textbook

Directed as needed

### Additional Reading

Directed as needed

### Grade Assessment

Presentation and report:

### Notes

### Contacting Faculty

## Seminar on Coastal and Maritime Engineering 2A (2.0credits) (海岸・海洋工学セミナー 2 A)

Course Type	Specialized Courses		
Division at course	Doctor's Course		
Class Format	Seminar		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	1 Spring Semester	1 Autumn Semester	
Lecturer	norimi mizutani Professor	Tomoaki NAKAMURA Associate Professor	YonghwanCHO Assistant Professor

### Course Purpose

The aim of this course is to review and discuss refereed journal papers in order to understand physical processes on coastal and ocean engineering.

### Course objectives:

Students will be able to

1. explain what theoretical, experimental, and numerical methods used in coastal and ocean engineering are
2. understand state-of-the-art research in coastal and ocean engineering

### Prerequisite Subjects

Advanced Fluvial and Coastal Hydrodynamics, Advanced Coastal and Offshore Engineering, Advanced Work in Coastal and Offshore Engineering

### Course Topics

Presentation and discussion on a refereed journal paper on coastal and ocean engineering

### Textbook

Students will select refereed journal papers closely related to their research topic

### Additional Reading

Not directed

### Grade Assessment

Presentation and discussion

### Notes

### Contacting Faculty

Prof. Mizutani (ext. 4630, mizutani@civil.nagoya-u.ac.jp), Assoc. Prof. Nakamura (ext. 4632, tnakamura@nagoya-u.jp), Assist. Prof. Cho (ext. 4634, yhcho@civil.nagoya-u.ac.jp)

## Seminar on Coastal and Maritime Engineering 2B (2.0credits) (海岸・海洋工学セミナー 2 B)

Course Type	Specialized Courses		
Division at course	Doctor's Course		
Class Format	Seminar		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	1 Autumn Semester	1 Spring Semester	
Lecturer	norimi mizutani Professor	Tomoaki NAKAMURA Associate Professor	YonghwanCHO Assistant Professor

### Course Purpose

The aim of this course is to review and discuss refereed journal papers in order to understand physical processes on coastal and ocean engineering.

### Course objectives:

Students will be able to

1. explain what theoretical, experimental, and numerical methods used in coastal and ocean engineering are
2. understand state-of-the-art research in coastal and ocean engineering

### Prerequisite Subjects

Advanced Fluvial and Coastal Hydrodynamics, Advanced Coastal and Offshore Engineering, Advanced Work in Coastal and Offshore Engineering

### Course Topics

Presentation and discussion on a refereed journal paper on coastal and ocean engineering

### Textbook

Students will select refereed journal papers closely related to their research topic

### Additional Reading

Not directed

### Grade Assessment

Presentation and discussion

### Notes

### Contacting Faculty

Prof. Mizutani (ext. 4630, mizutani@civil.nagoya-u.ac.jp), Assoc. Prof. Nakamura (ext. 4632, tnakamura@nagoya-u.jp), Assist. Prof. Cho (ext. 4634, yhcho@civil.nagoya-u.ac.jp)

## Seminar on Coastal and Maritime Engineering 2C (2.0credits) (海岸・海洋工学セミナー 2 C)

Course Type	Specialized Courses		
Division at course	Doctor's Course		
Class Format	Seminar		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	2 Spring Semester	2 Autumn Semester	
Lecturer	norimi mizutani Professor	Tomoaki NAKAMURA Associate Professor	YonghwanCHO Assistant Professor

### Course Purpose

The aim of this course is to review and discuss refereed journal papers in order to understand physical processes on coastal and ocean engineering.

### Course objectives:

Students will be able to

1. explain what theoretical, experimental, and numerical methods used in coastal and ocean engineering are
2. understand state-of-the-art research in coastal and ocean engineering

### Prerequisite Subjects

Advanced Fluvial and Coastal Hydrodynamics, Advanced Coastal and Offshore Engineering, Advanced Work in Coastal and Offshore Engineering

### Course Topics

Presentation and discussion on a refereed journal paper on coastal and ocean engineering

### Textbook

Students will select refereed journal papers closely related to their research topic

### Additional Reading

Not directed

### Grade Assessment

Presentation and discussion

### Notes

### Contacting Faculty

Prof. Mizutani (ext. 4630, mizutani@civil.nagoya-u.ac.jp), Assoc. Prof. Nakamura (ext. 4632, tnakamura@nagoya-u.jp), Assist. Prof. Cho (ext. 4634, yhcho@civil.nagoya-u.ac.jp)

## Seminar on Coastal and Maritime Engineering 2D (2.0credits) (海岸・海洋工学セミナー 2 D)

Course Type	Specialized Courses		
Division at course	Doctor's Course		
Class Format	Seminar		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	2 Autumn Semester	2 Spring Semester	
Lecturer	norimi mizutani Professor	Tomoaki NAKAMURA Associate Professor	YonghwanCHO Assistant Professor

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### Course Purpose

The aim of this course is to review and discuss refereed journal papers in order to understand physical processes on coastal and ocean engineering.

Course objectives:

Students will be able to

1. explain what theoretical, experimental, and numerical methods used in coastal and ocean engineering are
2. understand state-of-the-art research in coastal and ocean engineering

### Prerequisite Subjects

Advanced Fluvial and Coastal Hydrodynamics, Advanced Coastal and Offshore Engineering, Advanced Work in Coastal and Offshore Engineering

### Course Topics

Presentation and discussion on a refereed journal paper on coastal and ocean engineering

### Textbook

Students will select refereed journal papers closely related to their research topic

### Additional Reading

Not directed

### Grade Assessment

Presentation and discussion

### Notes

### Contacting Faculty

Prof. Mizutani (ext. 4630, mizutani@civil.nagoya-u.ac.jp), Assoc. Prof. Nakamura (ext. 4632, tnakamura@nagoya-u.jp), Assist. Prof. Cho (ext. 4634, yhcho@civil.nagoya-u.ac.jp)

## Seminar on Coastal and Maritime Engineering 2E (2.0credits) (海岸・海洋工学セミナー 2 E)

Course Type	Specialized Courses		
Division at course	Doctor's Course		
Class Format	Seminar		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	3 Spring Semester	3 Autumn Semester	
Lecturer	norimi mizutani Professor	Tomoaki NAKAMURA Associate Professor	YonghwanCHO Assistant Professor

### Course Purpose

The aim of this course is to review and discuss refereed journal papers in order to understand physical processes on coastal and ocean engineering.

### Course objectives:

Students will be able to

1. explain what theoretical, experimental, and numerical methods used in coastal and ocean engineering are
2. understand state-of-the-art research in coastal and ocean engineering

### Prerequisite Subjects

Advanced Fluvial and Coastal Hydrodynamics, Advanced Coastal and Offshore Engineering, Advanced Work in Coastal and Offshore Engineering

### Course Topics

Presentation and discussion on a refereed journal paper on coastal and ocean engineering

### Textbook

Students will select refereed journal papers closely related to their research topic

### Additional Reading

Not directed

### Grade Assessment

Presentation and discussion

### Notes

### Contacting Faculty

Prof. Mizutani (ext. 4630, [mizutani@civil.nagoya-u.ac.jp](mailto:mizutani@civil.nagoya-u.ac.jp)), Assoc. Prof. Nakamura (ext. 4632, [tnakamura@nagoya-u.jp](mailto:tnakamura@nagoya-u.jp)), Assist. Prof. Cho (ext. 4634, [yhcho@civil.nagoya-u.ac.jp](mailto:yhcho@civil.nagoya-u.ac.jp))



## Seminar on Geomaterial Engineering2A (2.0credits) (地盤材料工学セミナー2A)

Course Type	Specialized Courses	
Division at course	Doctor's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Spring Semester	1 Autumn Semester
Lecturer	Masaki NAKANO Professor	SAKAI Takayuki Assistant Professor

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### Course Purpose

Understanding of latest knowledge and research tendency on geotechnical engineering and mechanics of geomaterials, students will be able to draw related issue and discuss the solution under related theory as well as to learn reading skill of paper and presentation skill, etc.

### Prerequisite Subjects

Advanced Mechanics of Geomaterials, Advanced Soil Dynamics, Advanced Continuum Mechanics, Advanced Numerical Analysis

### Course Topics

Reading the latest paper on geotechnical engineering and mechanics of geomaterials in turn.

### Textbook

Paper

### Additional Reading

none

### Grade Assessment

Evaluation of presentation, Q&A and discussion in seminar, and 60% or more are accepted.

### Notes

### Contacting Faculty

Send E-mail. Masaki NAKANO: Ex.4622, nakano@civil.nagoya-u.ac.jp Shotaro YAMADA: Ex.4621, s-yamada@civil.nagoya-u.ac.jp Takayuki Sakai: Ex.2734t-sakai@civil.nagoya-u.ac.jp

## Seminar on Geomaterial Engineering2B (2.0credits) (地盤材料工学セミナー2B)

Course Type	Specialized Courses	
Division at course	Doctor's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Autumn Semester	1 Spring Semester
Lecturer	Masaki NAKANO Professor	SAKAI Takayuki Assistant Professor

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### Course Purpose

Understanding of latest knowledge and research tendency on geotechnical engineering and mechanics of geomaterials, students will be able to draw related issue and discuss the solution under related theory as well as to learn reading skill of paper and presentation skill, etc.

### Prerequisite Subjects

Advanced Mechanics of Geomaterials, Advanced Soil Dynamics, Advanced Continuum Mechanics, Advanced Numerical Analysis

### Course Topics

Reading the latest paper on geotechnical engineering and mechanics of geomaterials in turn.

### Textbook

Paper

### Additional Reading

none

### Grade Assessment

Evaluation of presentation, Q&A and discussion in seminar, and 60% or more are accepted.

### Notes

### Contacting Faculty

Send E-mail. Masaki NAKANO: Ex.4622, nakano@civil.nagoya-u.ac.jp Shotaro YAMADA: Ex.4621, s-yamada@civil.nagoya-u.ac.jp Takayuki Sakai: Ex.2734t-sakai@civil.nagoya-u.ac.jp

## Seminar on Geomaterial Engineering2C (2.0credits) (地盤材料工学セミナー2C)

Course Type	Specialized Courses	
Division at course	Doctor's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	2 Spring Semester	2 Autumn Semester
Lecturer	Masaki NAKANO Professor	SAKAI Takayuki Assistant Professor

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### Course Purpose

Understanding of latest knowledge and research tendency on geotechnical engineering and mechanics of geomaterials, students will be able to draw related issue and discuss the solution under related theory as well as to learn reading skill of paper and presentation skill, etc.

### Prerequisite Subjects

Advanced Mechanics of Geomaterials, Advanced Soil Dynamics, Advanced Continuum Mechanics, Advanced Numerical Analysis

### Course Topics

Reading the latest paper on geotechnical engineering and mechanics of geomaterials in turn.

### Textbook

Paper

### Additional Reading

none

### Grade Assessment

Evaluation of presentation, Q&A and discussion in seminar, and 60% or more are accepted.

### Notes

### Contacting Faculty

Send E-mail. Masaki NAKANO: Ex.4622, nakano@civil.nagoya-u.ac.jp Shotaro YAMADA: Ex.4621, s-yamada@civil.nagoya-u.ac.jp Takayuki Sakai: Ex.2734t-sakai@civil.nagoya-u.ac.jp

## Seminar on Geomaterial Engineering2D (2.0credits) (地盤材料工学セミナー2D)

Course Type	Specialized Courses	
Division at course	Doctor's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	2 Autumn Semester	2 Spring Semester
Lecturer	Masaki NAKANO Professor	SAKAITakayuki Assistant Professor

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### Course Purpose

Understanding of latest knowledge and research tendency on geotechnical engineering and mechanics of geomaterials, students will be able to draw related issue and discuss the solution under related theory as well as to learn reading skill of paper and presentation skill, etc.

### Prerequisite Subjects

Advanced Mechanics of Geomaterials, Advanced Soil Dynamics, Advanced Continuum Mechanics, Advanced Numerical Analysis

### Course Topics

Reading the latest paper on geotechnical engineering and mechanics of geomaterials in turn.

### Textbook

Paper

### Additional Reading

none

### Grade Assessment

Evaluation of presentation, Q&A and discussion in seminar, and 60% or more are accepted.

### Notes

### Contacting Faculty

Send E-mail.Masaki NAKANO: Ex.4622, nakano@civil.nagoya-u.ac.jpShotaro YAMADA: Ex.4621, s-yamada@civil.nagoya-u.ac.jpTakayuki Sakai: Ex.2734t-sakai@civil.nagoya-u.ac.jp

## Seminar on Geomaterial Engineering2E (2.0credits) (地盤材料工学セミナー2E)

Course Type	Specialized Courses	
Division at course	Doctor's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	3 Spring Semester	3 Autumn Semester
Lecturer	Masaki NAKANO Professor	SAKAITakayuki Assistant Professor

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### Course Purpose

Understanding of latest knowledge and research tendency on geotechnical engineering and mechanics of geomaterials, students will be able to draw related issue and discuss the solution under related theory as well as to learn reading skill of paper and presentation skill, etc.

### Prerequisite Subjects

Advanced Mechanics of Geomaterials, Advanced Soil Dynamics, Advanced Continuum Mechanics, Advanced Numerical Analysis

### Course Topics

Reading the latest paper on geotechnical engineering and mechanics of geomaterials in turn.

### Textbook

Paper

### Additional Reading

none

### Grade Assessment

Evaluation of presentation, Q&A and discussion in seminar, and 60% or more are accepted.

### Notes

### Contacting Faculty

Send E-mail.Masaki NAKANO: Ex.4622, nakano@civil.nagoya-u.ac.jpShotaro YAMADA: Ex.4621, s-yamada@civil.nagoya-u.ac.jpTakayuki Sakai: Ex.2734t-sakai@civil.nagoya-u.ac.jp

## Seminar on Disaster Prevention Geotechnical Engineering 2A (2.0credits) (国土防災安全工学セミナー2A)

Course Type	Specialized Courses	
Division at course	Doctor's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Spring Semester	1 Autumn Semester
Lecturer	Toshihiro NODA Professor	Kentaro NAKAI Associate Professor YOSHIKAWA Takahiro Assistant Professor

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Course Purpose

Prerequisite Subjects

Course Topics

Textbook

Additional Reading

Grade Assessment

Notes

Contacting Faculty

## Seminar on Disaster Prevention Geotechnical Engineering 2B (2.0credits) (国土防災安全工学セミナー2B)

Course Type	Specialized Courses	
Division at course	Doctor's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Autumn Semester	1 Spring Semester
Lecturer	Toshihiro NODA Professor	Kentaro NAKAI Associate Professor YOSHIKAWA Takahiro Assistant Professor

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Course Purpose

Prerequisite Subjects

Course Topics

Textbook

Additional Reading

Grade Assessment

Notes

Contacting Faculty

## Seminar on Disaster Prevention Geotechnical Engineering 2C (2.0credits) (国土防災安全工学セミナー2C)

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Course Type	Specialized Courses	
Division at course	Doctor's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	2 Spring Semester	2 Autumn Semester
Lecturer	Toshihiro NODA Professor	Kentaro NAKAI Associate Professor YOSHIKAWA Takahiro Assistant Professor

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Course Purpose

Prerequisite Subjects

Course Topics

Textbook

Additional Reading

Grade Assessment

Notes

Contacting Faculty



## Seminar on Disaster Prevention Geotechnical Engineering 2D (2.0credits) (国土防災安全工学セミナー2D)

Course Type	Specialized Courses	
Division at course	Doctor's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	2 Autumn Semester	2 Spring Semester
Lecturer	Toshihiro NODA Professor	Kentaro NAKAI Associate Professor YOSHIKAWA Takahiro Assistant Professor

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Course Purpose

Prerequisite Subjects

Course Topics

Textbook

Additional Reading

Grade Assessment

Notes

Contacting Faculty

## Seminar on Disaster Prevention Geotechnical Engineering 2E (2.0credits) (国土防災安全工学セミナー2E)

Course Type	Specialized Courses	
Division at course	Doctor's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	3 Spring Semester	3 Autumn Semester
Lecturer	Toshihiro NODA Professor	Kentaro NAKAI Associate Professor YOSHIKAWA Takahiro Assistant Professor

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Course Purpose

Prerequisite Subjects

Course Topics

Textbook

Additional Reading

Grade Assessment

Notes

Contacting Faculty

## Seminar on Maintenance of Civil Structures 2A (2.0credits) (社会基盤維持管理学セミナー2A)

Course Type	Specialized Courses		
Division at course	Doctor's Course		
Class Format	Seminar		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	1 Spring Semester	1 Autumn Semester	
Lecturer	KazuoTATEISHI Professor	Takeshi HANJI Associate Professor	Masaru Shimizu Assistant Professor

### Course Purpose

Seminar on design concept, maintenance and long-term management method for infrastructures.

### Prerequisite Subjects

bridge engineering, structural engineering, steel structures, structural design

### Course Topics

Reading and discussing some literatures on history, design and maintenance of infrastructures

### Textbook

Textbooks will be determined by the supervisors.

### Additional Reading

Reference books will be determined by the supervisors.

### Grade Assessment

Evaluation will be comprehensively based on attendance, presentation and discussion among students, etc.

S:100~90, A:89~80, B:79~70, C:69~60, F:59~

### Notes

### Contacting Faculty

## Seminar on Maintenance of Civil Structures 2B (2.0credits) (社会基盤維持管理学セミナー2B)

Course Type	Specialized Courses		
Division at course	Doctor's Course		
Class Format	Seminar		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	1 Autumn Semester	1 Spring Semester	
Lecturer	KazuoTATEISHI Professor	Takeshi HANJI Associate Professor	Masaru Shimizu Assistant Professor

### Course Purpose

Seminar on design concept, maintenance and long-term management method for infrastructures.

### Prerequisite Subjects

bridge engineering, structural engineering, steel structures, structural design

### Course Topics

Reading and discussing some literatures on history, design and maintenance of infrastructures.

### Textbook

Textbooks will be determined by the supervisors.

### Additional Reading

Reference books will be determined by the supervisors.

### Grade Assessment

Evaluation will be comprehensively based on attendance, presentation and discussion among students, etc.

S:100~90, A:89~80, B:79~70, C:69~60, F:59~

### Notes

### Contacting Faculty

## Seminar on Maintenance of Civil Structures 2C (2.0credits) (社会基盤維持管理学セミナー2C)

Course Type	Specialized Courses		
Division at course	Doctor's Course		
Class Format	Seminar		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	2 Spring Semester	2 Autumn Semester	
Lecturer	KazuoTATEISHI Professor	Takeshi HANJI Associate Professor	Masaru Shimizu Assistant Professor

### Course Purpose

Seminar on design concept, maintenance and long-term management method for infrastructures

### Prerequisite Subjects

bridge engineering, structural engineering, steel structures, structural design

### Course Topics

Reading and discussing some literatures on history, design and maintenance of infrastructures.

### Textbook

Textbooks will be determined by the supervisors.

### Additional Reading

Reference books will be determined by the supervisors.

### Grade Assessment

Evaluation will be comprehensively based on attendance, presentation and discussion among students, etc.

S:100~90, A:89~80, B:79~70, C:69~60, F:59~

### Notes

### Contacting Faculty

## Seminar on Maintenance of Civil Structures 2D (2.0credits) (社会基盤維持管理学セミナー2D)

Course Type	Specialized Courses		
Division at course	Doctor's Course		
Class Format	Seminar		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	2 Autumn Semester	2 Spring Semester	
Lecturer	KazuoTATEISHI Professor	Takeshi HANJI Associate Professor	Masaru Shimizu Assistant Professor

### Course Purpose

Seminar on design concept, maintenance and long-term management method for infrastructures.

### Prerequisite Subjects

bridge engineering, structural engineering, steel structures, structural design

### Course Topics

Reading and discussing some literatures on history, design and maintenance of infrastructures.

### Textbook

Textbooks will be determined by the supervisors.

### Additional Reading

Reference books will be determined by the supervisors.

### Grade Assessment

Evaluation will be comprehensively based on attendance, presentation and discussion among students, etc.

S:100~90, A:89~80, B:79~70, C:69~60, F:59~

### Notes

### Contacting Faculty

## Seminar on Maintenance of Civil Structures 2E (2.0credits) (社会基盤維持管理学セミナー2E)

Course Type	Specialized Courses		
Division at course	Doctor's Course		
Class Format	Seminar		
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate	
Starts 1	3 Spring Semester	3 Autumn Semester	
Lecturer	KazuoTATEISHI Professor	Takeshi HANJI Associate Professor	Masaru Shimizu Assistant Professor

### Course Purpose

Seminar on design concept, maintenance and long-term management method for infrastructures.

### Prerequisite Subjects

bridge engineering, structural engineering, steel structures, structural design

### Course Topics

Reading and discussing some literatures on history, design and maintenance of infrastructures.

### Textbook

Textbooks will be determined by the supervisors.

### Additional Reading

Reference books will be determined by the supervisors.

### Grade Assessment

Evaluation will be comprehensively based on attendance, presentation and discussion among students, etc.

S:100~90, A:89~80, B:79~70, C:69~60, F:59~

### Notes

### Contacting Faculty

## Land Design Seminar 2A (2.0credits) (国土デザイン学セミナー 2 A)

Course Type	Specialized Courses	
Division at course	Doctor's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Spring Semester	1 Autumn Semester
Lecturer	NAKAMURASHinichiro Associate Professor	

### Course Purpose

This seminar aim to cultivate a capacity for understanding and expressiveness related to methodologies to create cultural, safe and secure regional and infrastructure design under the climate change and the aging society, in which technologies, institutions and policy measures are discussed within the scope of regional design, economy and public policy analysis.

### Prerequisite Subjects

Urban and Regional Planning

### Course Topics

Students review and collect the relevant advanced and recent literatures related to methodologies to create cultural, safe and secure region and infrastructure. The results are presented and discussed together with students and the supervisor.

### Textbook

#### Additional Reading

Intergovernmental Panel on Climate Change(IPCC): Fifth Assessment Report (AR5), 2014,  
<http://www.ipcc.ch/index.html>.Maggie Black, Jannet King: The Atlas of Water: Mapping the World's Most Critical Resource, University of California Press(2009)

### Grade Assessment

The capacity and positive attitude for discussions and presentations are evaluated.Attendance for all seminars is required.

### Notes

#### Contacting Faculty

Sending e-mail or visiting the supervisor's office.E-mail: [shinichiro@civil.nagoya-u.ac.jp](mailto:shinichiro@civil.nagoya-u.ac.jp)Office: Room 305, Engineering Building No.9



## Land Design Seminar 2B (2.0credits) (国土デザイン学セミナー 2 B)

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Course Type	Specialized Courses	
Division at course	Doctor's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Autumn Semester	1 Spring Semester
Lecturer	NAKAMURASHinichiro Associate Professor	

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### Course Purpose

This seminar aim to cultivate a capacity for understanding and expressiveness related to methodologies to create cultural, safe and secure regional and infrastructure design under the climate change and the aging society, in which technologies, institutions and policy measures are discussed within the scope of regional design, economy and public policy analysis.

### Prerequisite Subjects

Urban and Regional Planning

### Course Topics

Students review and collect the relevant advanced and recent literatures related to methodologies to create cultural, safe and secure region and infrastructure. The results are presented and discussed together with students and the supervisor.

### Textbook

#### Additional Reading

Intergovernmental Panel on Climate Change(IPCC): Fifth Assessment Report (AR5), 2014,  
<http://www.ipcc.ch/index.html>.Maggie Black, Jannet King: The Atlas of Water: Mapping the World's Most Critical Resource, University of California Press(2009)

### Grade Assessment

The capacity and positive attitude for discussions and presentations are evaluated.Attendance for all seminars is required.

### Notes

#### Contacting Faculty

Sending e-mail or visiting the supervisor's office.E-mail: [shinichiro@civil.nagoya-u.ac.jp](mailto:shinichiro@civil.nagoya-u.ac.jp)Office: Room 305, Engineering Building No.9

## Land Design Seminar 2C (2.0credits) (国土デザイン学セミナー 2C)

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Course Type	Specialized Courses	
Division at course	Doctor's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	2 Spring Semester	2 Autumn Semester
Lecturer	NAKAMURASHinichiro Associate Professor	

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### Course Purpose

This seminar aim to cultivate a capacity for understanding and expressiveness related to methodologies to create cultural, safe and secure regional and infrastructure design under the climate change and the aging society, in which technologies, institutions and policy measures are discussed within the scope of regional design, economy and public policy analysis.

### Prerequisite Subjects

Urban and Regional Planning

### Course Topics

Students review and collect the relevant advanced and recent literatures related to methodologies to create cultural, safe and secure region and infrastructure. The results are presented and discussed together with students and the supervisor.

### Textbook

#### Additional Reading

Intergovernmental Panel on Climate Change(IPCC): Fifth Assessment Report (AR5), 2014,  
<http://www.ipcc.ch/index.html>.Maggie Black, Jannet King: The Atlas of Water: Mapping the World's Most Critical Resource, University of California Press(2009)

### Grade Assessment

The capacity and positive attitude for discussions and presentations are evaluated.Attendance for all seminars is required.

### Notes

#### Contacting Faculty

Sending e-mail or visiting the supervisor's office.E-mail: [shinichiro@civil.nagoya-u.ac.jp](mailto:shinichiro@civil.nagoya-u.ac.jp)Office: Room 305, Engineering Building No.9

## Land Design Seminar 2D (2.0credits) (国土デザイン学セミナー 2D)

Course Type	Specialized Courses	
Division at course	Doctor's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	2 Autumn Semester	2 Spring Semester
Lecturer	NAKAMURASHinichiro Associate Professor	

### Course Purpose

This seminar aim to cultivate a capacity for understanding and expressiveness related to methodologies to create cultural, safe and secure regional and infrastructure design under the climate change and the aging society, in which technologies, institutions and policy measures are discussed within the scope of regional design, economy and public policy analysis.

### Prerequisite Subjects

Urban and Regional Planning

### Course Topics

Students review and collect the relevant advanced and recent literatures related to methodologies to create cultural, safe and secure region and infrastructure. The results are presented and discussed together with students and the supervisor.

### Textbook

#### Additional Reading

Intergovernmental Panel on Climate Change(IPCC): Fifth Assessment Report (AR5), 2014,  
<http://www.ipcc.ch/index.html>.Maggie Black, Jannet King: The Atlas of Water: Mapping the World's Most Critical Resource, University of California Press(2009)

### Grade Assessment

The capacity and positive attitude for discussions and presentations are evaluated.Attendance for all seminars is requir

### Notes

#### Contacting Faculty

Sending e-mail or visiting the supervisor's office.E-mail: [shinichiro@civil.nagoya-u.ac.jp](mailto:shinichiro@civil.nagoya-u.ac.jp)Office: Room 305, Engineering Building No.9

## Land Design Seminar 2E (2.0credits) (国土デザイン学セミナー 2E)

Course Type	Specialized Courses	
Division at course	Doctor's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	3 Spring Semester	3 Autumn Semester
Lecturer	NAKAMURASHinichiro Associate Professor	

### Course Purpose

This seminar aim to cultivate a capacity for understanding and expressiveness related to methodologies to create cultural, safe and secure regional and infrastructure design under the climate change and the aging society, in which technologies, institutions and policy measures are discussed within the scope of regional design, economy and public policy analysis.

### Prerequisite Subjects

Urban and Regional Planning

### Course Topics

Students review and collect the relevant advanced and recent literatures related to methodologies to create cultural, safe and secure region and infrastructure. The results are presented and discussed together with students and the supervisor.

### Textbook

#### Additional Reading

Intergovernmental Panel on Climate Change(IPCC): Fifth Assessment Report (AR5), 2014,  
<http://www.ipcc.ch/index.html>.Maggie Black, Jannet King: The Atlas of Water: Mapping the World's Most Critical Resource, University of California Press(2009)

### Grade Assessment

The capacity and positive attitude for discussions and presentations are evaluated.Attendance for all seminars is required.

### Notes

#### Contacting Faculty

Sending e-mail or visiting the supervisor's office.E-mail: [shinichiro@civil.nagoya-u.ac.jp](mailto:shinichiro@civil.nagoya-u.ac.jp)Office: Room 305, Engineering Building No.9

## Seminar on Conservation of Geoenvironment 2A (2.0credits) (地圏環境保全学セミナー2A)

Course Type	Specialized Courses	
Division at course	Doctor's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Spring Semester	1 Autumn Semester
Lecturer	ArataKATAYAMA Professor	

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### Course Purpose

The aim of this class is to understand the fundamental phenomena in relation to the pollution of soil and ground water: mechanism and modeling of pollutant behavior, bioremediation technologies and microbial behavior, external electron transfer and its microbial system, waste management and environmental risk assessment and etc. Students are required to explain one of the above issues with comprehensive understanding after finding the important points by themselves.

### Prerequisite Subjects

Human activities and the environment, Environmental geotechnology, sanitary engineering, Social environmental conservation, microbiology, chemistry, mathematics, Hydrology, Seminar on Conservation of Geoenvironment 1A,1B, 1C & 1D and etc.

### Course Topics

Students in this class are required to present the topics in relation to the researches on pollution of soil and ground water, mechanism and modeling of pollutant behavior, bioremediation technologies and microbial behavior, external electron transfer and microbial system, waste management and environmental impact assessment. The topics presentation should be prepared by reading more than 10 journal papers, and show the frontier of the research in the topic.

### Textbook

### Additional Reading

### Grade Assessment

Understanding level, presentation ability, participation to the discussion: Higher than 60 points in 100 as full mark is passed.

### Notes

### Contacting Faculty

## Seminar on Conservation of Geoenvironment 2B (2.0credits) (地圏環境保全学セミナー2B)

Course Type	Specialized Courses	
Division at course	Doctor's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Autumn Semester	1 Spring Semester
Lecturer	ArataKATAYAMA Professor	

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### Course Purpose

The aim of this class is to understand the fundamental phenomena in relation to the pollution of soil and ground water: mechanism and modeling of pollutant behavior, bioremediation technologies and microbial behavior, external electron transfer and microbial system, waste management and environmental risk assessment and etc. Students in this class are required to compare different research approaches and to explain them critically concerning on the issues selected by themselves.

### Prerequisite Subjects

Human activities and the environment, Environmental geotechnology, sanitary engineering, Social environmental conservation, microbiology, chemistry, mathematics, Hydrology, Seminar on Conservation of Geoenvironment 1A,1B, 1C &&&& 1D and etc.

### Course Topics

Students in this class are required to present the topics in relation to the researches on pollution of soil and ground water, mechanism and modeling of pollutant behavior, bioremediation technologies and microbial behavior, external electron transfer and microbial system, waste management and environmental impact assessment. The topics presentation should be prepared by reading more than 10 journal papers, and show the frontier of the research in the topic.

### Textbook

### Additional Reading

### Grade Assessment

Understanding level, presentation ability, participation to the discussion:Higher than 60 points in 100 as full mark is passed.

### Notes

### Contacting Faculty

## Seminar on Conservation of Geoenvironment 2C (2.0credits) (地圏環境保全学セミナー2C)

Course Type	Specialized Courses	
Division at course	Doctor's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	2 Spring Semester	2 Autumn Semester
Lecturer	ArataKATAYAMA Professor	

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### Course Purpose

The aim of this class is to understand the fundamental phenomena in relation to the pollution of soil and ground water: mechanism and modeling of pollutant behavior, bioremediation technologies and microbial behavior, external electron transfer and microbial system, waste management and environmental risk assessment and etc. Students in this class are required to compare different logical explanation of the authors in different research groups and to explain them critically concerning on the issues selected by themselves.

### Prerequisite Subjects

Human activities and the environment, Environmental geotechnology, sanitary engineering, Social environmental conservation, microbiology, chemistry, mathematics, Hydrology, Seminar on Conservation of Geoenvironment 1A,1B, 1C, 1D and etc.

### Course Topics

Students in this class are required to present the topics in relation to the researches on pollution of soil and ground water, mechanism and modeling of pollutant behavior, bioremediation technologies and microbial behavior, external electron transfer and microbial system, waste management and environmental impact assessment. The topics presentation should be prepared by reading more than 10 journal papers, and show the frontier of the research in the topic.

### Textbook

### Additional Reading

### Grade Assessment

Understanding level, presentation ability, participation to the discussion:Higher than 60 points in 100 as full mark is passed.

### Notes

### Contacting Faculty

## Seminar on Conservation of Geoenvironment 2D (2.0credits) (地圏環境保全学セミナー2D)

Course Type	Specialized Courses	
Division at course	Doctor's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	2 Autumn Semester	2 Spring Semester
Lecturer	ArataKATAYAMA Professor	

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### Course Purpose

The aim of this class is to understand the fundamental phenomena in relation to the pollution of soil and ground water: mechanism and modeling of pollutant behavior, bioremediation technologies and microbial behavior, external electron transfer and microbial system, waste management and environmental risk assessment and etc. Students in this class are required to propose their own idea on the issue selected after the comparison and the critical explanation of different logical explanation of the authors in different research groups.

### Prerequisite Subjects

Human activities and the environment, Environmental geotechnology, sanitary engineering, Social environmental conservation, microbiology, chemistry, mathematics, Hydrology, Seminar on Conservation of Geoenvironment 1A,1B, 1C, 1D, and etc.

### Course Topics

Students in this class are required to present the topics in relation to the researches on pollution of soil and ground water, mechanism and modeling of pollutant behavior, bioremediation technologies and microbial behavior, external electron transfer and microbial system, waste management and environmental impact assessment. The topics presentation should be prepared by reading more than 10 journal papers, and show the frontier of the research in the topic.

### Textbook

### Additional Reading

### Grade Assessment

Understanding level, presentation ability, participation to the discussion: Higher than 60 points in 100 as full mark is passed

### Notes

### Contacting Faculty



## Seminar on Conservation of Geoenvironment 2E (2.0credits) (地圏環境保全学セミナー2E)

Course Type	Specialized Courses	
Division at course	Doctor's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	3 Spring Semester	3 Autumn Semester
Lecturer	ArataKATAYAMA Professor	

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### Course Purpose

The aim of this class is to understand the fundamental phenomena in relation to the pollution of soil and ground water: mechanism and modeling of pollutant behavior, bioremediation technologies and microbial behavior, external electron transfer and microbial system, waste management and environmental risk assessment and etc. Students in this class are required to go through the process they learned in this series of the classes from 2A to 2D, by taking a issue different from the previous theme that students selected.

### Prerequisite Subjects

Human activities and the environment, Environmental geotechnology, sanitary engineering, Social environmental conservation, microbiology, chemistry, mathematics, Hydrology, Seminar on Conservation of Geoenvironment 1A,1B, 1C, 1D, and etc.

### Course Topics

Students in this class are required to present the topics in relation to the researches on pollution of soil and ground water, mechanism and modeling of pollutant behavior, bioremediation technologies and microbial behavior, external electron transfer and microbial system, waste management and environmental impact assessment. The topics presentation should be prepared by reading more than 10 journal papers, and show the frontier of the research in the topic.

### Textbook

### Additional Reading

### Grade Assessment

Understanding level, presentation ability, participation to the discussion:Higher than 60 points in 100 as full mark is passed.

### Notes

### Contacting Faculty

## Global Environmental Cooperation Seminar2A (2.0credits) (国際環境協力セミナー 2 A)

Course Type	Specialized Courses	
Division at course	Doctor's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Spring Semester	1 Autumn Semester
Lecturer	Kiichiro HAYASHI Professor	

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### Course Purpose

The objective of the seminar is to study institutions, policies and assessment methods on sustainable development issues in global and local scales. The seminar will develop the basic and applied skills of students to collect and review relevant literatures and to present the results and findings from their own perspectives, in a comprehensive manner.

### Prerequisite Subjects

Civil Engineering and Policies for Developing Countries I, II, Human activities and the environment, Urban Environmental Systems Engineering, Global Environmental Cooperation Seminar1A,1B,1C,1D

### Course Topics

Students are required to study institutions and policies and assessment methods on sustainable development issues from the perspective of environmental system engineering, environmental policy study and environmental economics. Students are required to collect articles and do study by themselves and present and discuss the results of findings with teachers. Also if there is a student who needs English communication, the seminar will be conducted in English.

### Textbook

### Additional Reading

### Grade Assessment

Grading will be made taking into consideration understanding level, presentation ability, participation to the discussion, etc. Students are required to attend all classes. Higher than 60 points in 100 as full mark is passed.

### Notes

### Contacting Faculty

in the class and/or by e-mail.

## Global Environmental Cooperation Seminar2B (2.0credits) (国際環境協力セミナー 2 B)

Course Type	Specialized Courses	
Division at course	Doctor's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Autumn Semester	1 Spring Semester
Lecturer	Kiichiro HAYASHI Professor	

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### Course Purpose

The objective of the seminar is to study institutions, policies and assessment methods on sustainable development issues in global and local scales. The seminar will develop the basic and applied skills of students to collect and review relevant literatures and to present the results and findings from their own perspectives, in a comprehensive manner.

### Prerequisite Subjects

Civil Engineering and Policies for Developing Countries I, II, Human activities and the environment, Urban Environmental Systems Engineering, Global Environmental Cooperation Seminar1A,1B,1C,1D,2A

### Course Topics

Students are required to study institutions and policies and assessment methods on sustainable development issues from the perspective of environmental system engineering, environmental policy study and environmental economics. Students are required to collect articles and do study by themselves and present and discuss the results of findings with teachers. Also if there is a student who needs English communication, the seminar will be conducted in English.

### Textbook

### Additional Reading

### Grade Assessment

Grading will be made taking into consideration understanding level, presentation ability, participation to the discussion, etc. Students are required to attend all classes. Higher than 60 points in 100 as full mark is passed.

### Notes

### Contacting Faculty

in the class and/or by e-mail.

## Global Environmental Cooperation Seminar2C (2.0credits) (国際環境協力セミナー 2 C)

Course Type	Specialized Courses	
Division at course	Doctor's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	2 Spring Semester	2 Autumn Semester
Lecturer	Kiichiro HAYASHI Professor	

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### Course Purpose

The objective of the seminar is to study institutions, policies and assessment methods on sustainable development issues in global and local scales. The seminar will develop the basic and applied skills of students to collect and review relevant literatures and to present the results and findings from their own perspectives, in a comprehensive manner.

### Prerequisite Subjects

Civil Engineering and Policies for Developing Countries I, II, Human activities and the environment, Urban Environmental Systems Engineering, Global Environmental Cooperation Seminar1A,1B,1C,1D,2A,2B

### Course Topics

Students are required to study institutions and policies and assessment methods on sustainable development issues from the perspective of environmental system engineering, environmental policy study and environmental economics. Students are required to collect articles and do study by themselves and present and discuss the results of findings with teachers. Also if there is a student who needs English communication, the seminar will be conducted in English.

### Textbook

### Additional Reading

### Grade Assessment

Grading will be made taking into consideration understanding level, presentation ability, participation to the discussion, etc. Students are required to attend all classes. Higher than 60 points in 100 as full mark is passed.

### Notes

### Contacting Faculty

in the class and/or by e-mail.

## Global Environmental Cooperation Seminar2D (2.0credits) (国際環境協力セミナー 2 D)

Course Type	Specialized Courses	
Division at course	Doctor's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	2 Autumn Semester	2 Spring Semester
Lecturer	Kiichiro HAYASHI Professor	

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### Course Purpose

The objective of the seminar is to study institutions, policies and assessment methods on sustainable development issues in global and local scales. The seminar will develop the basic and applied skills of students to collect and review relevant literatures and to present the results and findings from their own perspectives, in a comprehensive manner.

### Prerequisite Subjects

Civil Engineering and Policies for Developing Countries I, II, Human activities and the environment, Urban Environmental Systems Engineering, Global Environmental Cooperation Seminar1A,1B,1C,1D,2A,2B,2C

### Course Topics

Students are required to study institutions and policies and assessment methods on sustainable development issues from the perspective of environmental system engineering, environmental policy study and environmental economics. Students are required to collect articles and do study by themselves and present and discuss the results of findings with teachers. Also if there is a student who needs English communication, the seminar will be conducted in English.

### Textbook

### Additional Reading

### Grade Assessment

Grading will be made taking into consideration understanding level, presentation ability, participation to the discussion, etc. Students are required to attend all classes. Higher than 60 points in 100 as full mark is passed.

### Notes

### Contacting Faculty

in the class and/or by e-mail.

## Global Environmental Cooperation Seminar2E (2.0credits) (国際環境協力セミナー 2 E)

Course Type	Specialized Courses	
Division at course	Doctor's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	3 Spring Semester	3 Autumn Semester
Lecturer	Kiichiro HAYASHI Professor	

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### Course Purpose

The objective of the seminar is to study institutions, policies and assessment methods on sustainable development issues in global and local scales. The seminar will develop the basic and applied skills of students to collect and review relevant literatures and to present the results and findings from their own perspectives, in a comprehensive manner.

### Prerequisite Subjects

Civil Engineering and Policies for Developing Countries I, II, Human activities and the environment, Urban Environmental Systems Engineering, Global Environmental Cooperation Seminar1A,1B,1C,1D,2A,2B,2C,2D

### Course Topics

Students are required to study institutions and policies and assessment methods on sustainable development issues from the perspective of environmental system engineering, environmental policy study and environmental economics. Students are required to collect articles and do study by themselves and present and discuss the results of findings with teachers. Also if there is a student who needs English communication, the seminar will be conducted in English.

### Textbook

### Additional Reading

### Grade Assessment

Grading will be made taking into consideration understanding level, presentation ability, participation to the discussion, etc. Students are required to attend all classes. Higher than 60 points in 100 as full mark is passed.

### Notes

### Contacting Faculty

in the class and/or by e-mail.

## Seminar on Environmental Ecology System2A (2.0credits) (環境エコロジーシステムセミナー2A)

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Course Type	Specialized Courses	
Division at course	Doctor's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Spring Semester	1 Autumn Semester
Lecturer	Toshiyuki YAMAMOTO Professor	Tomio MIWA Associate Professor

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### Course Purpose

Learn travel behavior analysis, transportation planning, transport and environment dynamics, etc. in order to understand policies for environmental sustainability and related issues.

### Prerequisite Subjects

History of City and Civilization, Probability and Statistics, Spatial Planning, Transportation Planning, Infrastructure Planning, Urban and National Land Planning

### Course Topics

Discuss on methodological issues concerned with environmentally sustainable transport such as travel behavior analysis, transportation planning, transport environment dynamics, etc. with the aid of reading advanced English literature

### Textbook

To be announced

### Additional Reading

### Grade Assessment

Presentation and active participation to the class (including questions and comments to presentations of other groups)

### Notes

### Contacting Faculty

## Seminar on Environmental Ecology System2B (2.0credits) (環境エコロジーシステムセミナー2B)

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Course Type	Specialized Courses	
Division at course	Doctor's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Autumn Semester	1 Spring Semester
Lecturer	Toshiyuki YAMAMOTO Professor	Tomio MIWA Associate Professor

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### Course Purpose

Learn travel behavior analysis, transportation planning, transport and environment dynamics, etc. in order to understand policies for environmental sustainability and related issues.

### Prerequisite Subjects

History of City and Civilization, Probability and Statistics, Spatial Planning, Transportation Planning, Infrastructure Planning, Urban and National Land Planning

### Course Topics

Discuss on methodological issues concerned with environmentally sustainable transport such as travel behavior analysis, transportation planning, transport environment dynamics, etc. with the aid of reading advanced English literature

### Textbook

To be announced

### Additional Reading

### Grade Assessment

Presentation and active participation to the class (including questions and comments to presentations of other groups)

### Notes

### Contacting Faculty



## Seminar on Environmental Ecology System2C (2.0credits) (環境エコロジーシステムセミナー2C)

Course Type	Specialized Courses	
Division at course	Doctor's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	2 Spring Semester	2 Autumn Semester
Lecturer	Toshiyuki YAMAMOTO Professor	Tomio MIWA Associate Professor

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### Course Purpose

Learn travel behavior analysis, transportation planning, transport and environment dynamics, etc. in order to understand policies for environmental sustainability and related issues.

### Prerequisite Subjects

History of City and Civilization, Probability and Statistics, Spatial Planning, Transportation Planning, Infrastructure Planning, Urban and National Land Planning

### Course Topics

Discuss on methodological issues concerned with environmentally sustainable transport such as travel behavior analysis, transportation planning, transport environment dynamics, etc. with the aid of reading advanced English literature

### Textbook

To be announced

### Additional Reading

### Grade Assessment

Presentation and active participation to the class (including questions and comments to presentations of other groups)

### Notes

### Contacting Faculty

## Seminar on Environmental Ecology Systems2D (2.0credits) (環境エコロジ-システムセミナー2D)

Course Type	Specialized Courses	
Division at course	Doctor's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	2 Autumn Semester	2 Spring Semester
Lecturer	Toshiyuki YAMAMOTO Professor	Tomio MIWA Associate Professor

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### Course Purpose

Learn travel behavior analysis, transportation planning, transport and environment dynamics, etc. in order to understand policies for environmental sustainability and related issues.

### Prerequisite Subjects

History of City and Civilization, Probability and Statistics, Spatial Planning, Transportation Planning, Infrastructure Planning, Urban and National Land Planning

### Course Topics

Discuss on methodological issues concerned with environmentally sustainable transport such as travel behavior analysis, transportation planning, transport environment dynamics, etc. with the aid of reading advanced English literature

### Textbook

To be announced

### Additional Reading

### Grade Assessment

Presentation and active participation to the class (including questions and comments to presentations of other groups)

### Notes

### Contacting Faculty

## Seminar on Environmental Ecology System2E (2.0credits) (環境エコロジーシステムセミナー2E)

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Course Type	Specialized Courses	
Division at course	Doctor's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	3 Spring Semester	3 Autumn Semester
Lecturer	Toshiyuki YAMAMOTO Professor	Tomio MIWA Associate Professor

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### Course Purpose

Learn travel behavior analysis, transportation planning, transport and environment dynamics, etc. in order to understand policies for environmental sustainability and related issues.

### Prerequisite Subjects

History of City and Civilization, Probability and Statistics, Spatial Planning, Transportation Planning, Infrastructure Planning, Urban and National Land Planning

### Course Topics

Discuss on methodological issues concerned with environmentally sustainable transport such as travel behavior analysis, transportation planning, transport environment dynamics, etc. with the aid of reading advanced English literature

### Textbook

To be announced

### Additional Reading

### Grade Assessment

Presentation and active participation to the class (including questions and comments to presentations of other groups)

### Notes

### Contacting Faculty

## Global Environmental Leaders Seminar 2A (2.0credits) (国際環境人材育成セミナー 2 A)

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Course Type	Specialized Courses	
Division at course	Doctor's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Spring Semester	2 Autumn Semester
Lecturer	Associated Faculty	

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### Course Purpose

As part of the Forefront Studies Program and the Nagoya University Global Environmental Leaders Program (NUGELP), this seminar aims at providing students with opportunities to acquire the ability to conduct and manage several activities in the international specialized programs for civil and environmental engineering.

### Prerequisite Subjects

Students are expected to have taken some lectures offered by the Forefront Studies Program and the Nagoya University Global Environmental Leaders Program (NUGELP).

### Course Topics

Every week, one or two students will be required to explain their own research activities; problem awareness, methodology and progress. After that, all participants will have a discussion. Through this process, the ability to describe their own research activities clearly and effectively, the ability to understand research topics of other students correctly, and the ability to think flexibly from different viewpoints will be enhanced.

### Textbook

None

### Additional Reading

None

### Grade Assessment

Evaluation will be based on reports, contribution to discussion in the seminar and presentation.

### Notes

### Contacting Faculty

Nagoya University Civil and Environmental Engineering International Programs Office Room 401,  
Environmental Studies Hall envleaders@urban.env.nagoya-u.ac.jp Ex.5507

## Global Environmental Leaders Seminar 2B (2.0credits) (国際環境人材育成セミナー 2 B)

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Course Type	Specialized Courses	
Division at course	Doctor's Course	
Class Format	Seminar	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Autumn Semester	2 Spring Semester
Lecturer	Associated Faculty	

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### Course Purpose

As part of the Forefront Studies Program and the Nagoya University Global Environmental Leaders Program (NUGELP), this seminar aims at providing students with opportunities to acquire the ability to conduct and manage several activities in the international specialized programs for civil and environmental engineering.

### Prerequisite Subjects

Students are expected to have taken some lectures offered by the Forefront Studies Program and the Nagoya University Global Environmental Leaders Program (NUGELP).

### Course Topics

Every week, one or two students will be required to explain their own research activities; problem awareness, methodology and progress. After that, all participants will have a discussion. Through this process, the ability to describe their own research activities clearly and effectively, the ability to understand research topics of other students correctly, and the ability to think flexibly from different viewpoints will be enhanced.

### Textbook

None

### Additional Reading

None

### Grade Assessment

Evaluation will be based on reports, contribution to discussion in the seminar and presentation.

### Notes

### Contacting Faculty

Nagoya University Civil and Environmental Engineering International Programs Office Room 401,  
Environmental Studies Hall envleaders@urban.env.nagoya-u.ac.jp Ex.5507

## Global Research Internship 2 (2.0credits) (グローバル研究インターンシップ2)

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Course Type	Specialized Courses	
Division at course	Doctor's Course	
Class Format	Exercise	
Course Name	Civil and Environmental Engineering	Civil and Environmental Engineering Graduate
Starts 1	1 Spring and Autumn Semester	
Lecturer	Associated Faculty	

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### Course Purpose

As part of the Forefront Studies Program and the Nagoya University Global Environmental Leaders Program (NUGELP), this course aims at providing students with research-based internship opportunities at universities, research institutions, companies, governmental and non-governmental organizations in Japan and overseas to acquire the ability to conduct practical and applied research.

### Prerequisite Subjects

Students are expected to have taken some lectures offered by the Forefront Studies Program and the Nagoya University Global Environmental Leaders Program (NUGELP).

### Course Topics

Internship should be conducted based on close communication with academic advisor(s). Students are expected to acquire practical research know-how through On-site Research Training (ORT). Details of the Internship such as period and terms of implementation should be decided through thorough consultation with academic advisor(s) and experts at host institutions. Course Schedule: Step 1: Initial Proposal Step 2: Detailed Proposal Step 3: Internship Step 4: Final Report Step 5: Presentation

### Textbook

None

### Additional Reading

None

### Grade Assessment

Performance is graded by Pass or Fail (2 credits). Grading shall be based on student's report and presentation.

### Notes

### Contacting Faculty

Nagoya University Civil and Environmental Engineering International Programs Office Room 401,  
Environmental Studies Hall envleaders@urban.env.nagoya-u.ac.jp Ex.5507